Question 1 - CMA 695 3-3 - Process Costing

Kimbeth Manufacturing uses a process cost system to manufacture Dust Density Sensors for the mining industry. The following information pertains to operations for the month of May.

<table>
<thead>
<tr>
<th>Units</th>
<th>May 1</th>
<th>May 100,000</th>
<th>May 92,000</th>
<th>May 24,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning work-in-process inventory</td>
<td>16,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Started in production during May</td>
<td></td>
<td>100,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Completed production during May</td>
<td></td>
<td></td>
<td>92,000</td>
<td></td>
</tr>
<tr>
<td>Ending work-in-process inventory, May</td>
<td>24,000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The beginning inventory was 60% complete for materials and 20% complete for conversion costs. The ending inventory was 90% complete for materials and 40% complete for conversion costs.

Costs pertaining to the month of May are as follows:
- Beginning inventory costs are materials, $54,560; direct labor, $20,320; and factory overhead, $15,240.
- Costs incurred during May are materials used, $468,000; direct labor, $182,880; and factory overhead, $391,160.

Using the FIFO method, the equivalent unit cost of materials for May is

A. $4.60  
B. $4.50  
C. $4.12  
D. $4.80

A. This is the cost per unit under the weighted average method.

B. In order to calculate the cost per unit of materials under FIFO we simply divide the costs incurred for materials this period by the EUP of materials for the period. The EUP for the materials was 104,000 (this is shown in the following paragraph) and the cost for the period was $468,000 (we use the cost of the materials used in production). This gives a per unit cost for materials of $4.50. Under the FIFO method of process costing we need to make three calculations to determine the EUP. These are: calculate how many EUP were required to finish BWIP, how many units were started and completed and how many EUP were needed to start the EWIP. There were 16,000 units in BWIP and they were 60% complete for materials, meaning that they needed to do 40%, or 6,400 EUP to finish BWIP. There were a total of 76,000 units started and completed during the period (92,000 completed minus the 16,000 in BWIP). There were 24,000 units in EWIP that were 90% complete for materials, meaning that 21,600 EUP of materials had been done on the EWIP. Adding these three numbers together, we get 104,000 units.

C. This answer uses the EUP as calculated for the weighted average method.

D. This answer does not use the correct EUP for the period.

Question 2 - CMA 690 4-5 - General Overhead Allocation

Alex Company had the following inventories at the beginning and end of the month of January.

<table>
<thead>
<tr>
<th></th>
<th>January 1</th>
<th>January 31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finished goods</td>
<td>$125,000</td>
<td>$117,000</td>
</tr>
<tr>
<td>Work-in-process</td>
<td>235,000</td>
<td>251,000</td>
</tr>
<tr>
<td>Direct materials</td>
<td>134,000</td>
<td>124,000</td>
</tr>
</tbody>
</table>

The following additional manufacturing data were available for the month of January:
Direct materials purchased $189,000
Purchase returns and allowances 1,000
Transportation-in 3,000
Direct labor 300,000
Actual factory overhead 175,000

Alex Company applies factory overhead at a rate of 60% of direct labor cost, and any overapplied or underapplied
factory overhead is deferred until the end of the year, December 31.

Alex Company’s balance in factory overhead control for January was

A. $5,000 debit, under-applied.
B. $5,000 credit, over-applied.
C. $5,000 debit, over-applied.
D. $5,000 credit, under-applied.

A. The overhead was overapplied, which will give a credit balance in the overhead control account.

B. When the actual costs were incurred, the factory overhead account was debited for $175,000. When the
overhead was applied, the account was credited for $180,000 (60% of the $300,000 labor cost). This leaves a
credit balance of $5,000 in the account and this represents an overapplied amount since the applied overhead
was greater than the actual overhead.

C. An overapplied overhead balance results in a credit balance in the overhead control account.

D. A credit balance in the overhead control account represents overapplied, not underapplied overhead.

Question 3 - CIA 594 III-77 - Service Cost Allocation

A company has two service departments, Power and Maintenance, and two production departments, Machining and
Assembly. All costs are regarded as strictly variable. For September the following information is available:

<table>
<thead>
<tr>
<th></th>
<th>Power</th>
<th>Maintenance</th>
<th>Machining</th>
<th>Assembly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct costs</td>
<td>$62,500</td>
<td>$40,000</td>
<td>$25,000</td>
<td>$15,000</td>
</tr>
<tr>
<td>Actual activity:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kilowatt hrs.</td>
<td>50,000</td>
<td>150,000</td>
<td>50,000</td>
<td></td>
</tr>
<tr>
<td>Maintenance hours</td>
<td>250</td>
<td>1,125</td>
<td>1,125</td>
<td></td>
</tr>
</tbody>
</table>

Assume the company uses the sequential or step method for allocating service department costs to production
departments. The company begins with the service department, which receives the least service from other service
departments. What dollar amount of Power Department costs will be allocated to the Maintenance Department for
September?

A. $8,000
B. $6,250
C. $12,500
D. $0

A. This answer is incorrect.
B. This answer is incorrect.
C. Under the step method the costs of the service departments are allocated one by one. The costs of a service department will be allocated to the production department and to any service department whose costs have not yet been allocated. We are told that the service department that receives the least services from the other service department will be allocated first. In this question, we need to allocate the power department first since it receives only 10% of the maintenance department work, and the maintenance department uses 20% of the power. So, the costs of the power department need to be allocated to the maintenance department and the production departments. In total, the power department provided 250,000 kilowatt hours and the maintenance department used 50,000, or 20% of those hours. The maintenance department will then receive 20%, or $12,500 of the power department costs.

D. Under the step method some service department costs are allocated to the other service departments. Since the power department receives less 'service' from the maintenance department than it provides to the maintenance department, the power department is allocated first. Some of the power department costs will be allocated to the maintenance department.

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**Question 4** - CIA 1187 IV-5 - Process Costing

Which of the industries listed is most likely to use process costing in accounting for production costs?

A. Road builder.
B. Electrical contractor.
C. Newspaper publisher.
D. Clothing manufacturing.

A. A road builder would probably use job-order costing since each road is unique.
B. An electrical contractor would probably use job-order costing since each job is unique.
C. Process costing is best used when similar items are produced in large quantities. Of the choices given, this is the industry most likely to use process costing.
D. A clothing manufacturer would probably use operations costing since the jobs are similar in their execution, but have different materials in them.

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**Question 5** - CMA 1290 3-1 - General Overhead Allocation

Practical capacity as a plant capacity concept

A. Includes consideration of idle time caused by both limited sales orders and human and equipment inefficiencies.
B. Is the production volume that is necessary to meet sales demand for the next year.
C. Assumes all personnel and equipment will operate at peak efficiency and total plant capacity will be used.
D. Does not consider idle time caused by inadequate sales demand.

A. Practical capacity includes downtime from human and equipment inefficiencies, but not from the lack of demand.
B. This is not related to practical capacity - it is just the requirement needed to meet demand.
C. Practical capacity assumes that there will be some down time in the factory production as a result of human and machine inefficiencies.
D. By definition, practical capacity is the maximum that can be produced efficiently. It does not include any downtime for lack of demand, though it does include down time for other factors.

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Valyn Corporation employs an absorption costing system for internal reporting purposes; however, the company is considering using variable costing. Data regarding Valyn's planned and actual operations for the calendar year are presented below.

### Question 6 - CMA 1290 H4 - Variable and Absorption Costing

The planned per unit cost figures shown in the above schedule were based on Valyn producing and selling 140,000 units. Valyn uses a predetermined manufacturing overhead rate for applying manufacturing overhead to its product; thus, a combined manufacturing overhead rate of $9.00 per unit was employed for absorption costing purposes. Any over- or underapplied manufacturing overhead is closed to the Cost of Goods Sold account at the end of the reporting year.

The beginning finished goods inventory for absorption costing purposes was valued at the previous year's planned unit manufacturing cost, which was the same as the current year's planned unit manufacturing cost. There are no work-in-process inventories at either the beginning or the end of the year. The planned and actual unit selling price for the current year was $70.00 per unit.

The total variable cost currently expensed currently by Valyn Corporation on the variable costing basis was

A. $4,550,000  
B. $4,375,000  
C. $4,325,000  
D. $4,500,000

A. This answer is incorrect.

B. Under variable costing, all variable production costs are put into inventory and are expensed only when the unit is sold. The variable production costs per unit were $25 (direct labor, direct materials and variable overhead). The number of units sold was 125,000, to the total variable production costs expensed were $3,125,000. Additionally, the variable selling and administrative costs need to be included in our answer. The variable selling costs were $8 per unit and there were 125,000 units sold, so this is $1,000,000 in variable selling expenses. This also equals the actual variable selling costs. The variable administrative costs were budgeted based on the number of units sold, so since 125,000 units were sold, the variable administrative costs would be $250,000, which is also equal to the actual costs. Adding these three numbers together, we get $4,375,000.

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Question 7 - CMA 1286 4-16 - Process Costing

Levittown Company employs a process cost system for its manufacturing operations. All direct materials are added at the beginning of the process and conversion costs are added proportionately. Levittown’s production quantity schedule for November is reproduced as follows.

<table>
<thead>
<tr>
<th>Units</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-in-process on November 1</td>
<td>1,000</td>
</tr>
<tr>
<td>(60% complete as to conversion costs)</td>
<td></td>
</tr>
<tr>
<td>Units started during November</td>
<td>5,000</td>
</tr>
<tr>
<td>Total units to account for</td>
<td>6,000</td>
</tr>
<tr>
<td>Units completed and transferred out from BI</td>
<td>1,000</td>
</tr>
<tr>
<td>Units started and completed during November</td>
<td>3,000</td>
</tr>
<tr>
<td>Work-in-process on November 30</td>
<td>2,000</td>
</tr>
<tr>
<td>(20% complete as to conversion costs)</td>
<td></td>
</tr>
<tr>
<td>Total units accounted for</td>
<td>6,000</td>
</tr>
</tbody>
</table>

Using the weighted-average method, the equivalent units for direct materials for November are

A. 6,000 units.
B. 3,400 units.
C. 4,400 units.
D. 5,000 units.

A. Under weighted average we assume that the work that was in BWIP was done during the current period. Therefore, EUP for materials will include not only units started this period, but also the number of units in BWIP. This is 6,000 in total (5,000 started and 1,000 in BWIP).

B. This answer is incorrect as it does not treat beginning WIP or ending WIP properly.

C. This answer does not treat beginning or ending WIP correctly.

D. This answer does not include the units that were in beginning WIP.

Question 8 - CMA 696 3-30 - Activity Based Costing

New-Rage Cosmetics has used a traditional cost accounting system to apply quality control costs uniformly to all products at a rate of 14.5% of direct labor cost. Monthly direct labor cost for Satin Sheen makeup is $27,500. In an attempt to distribute quality control costs more equitably, New-Rage is considering activity-based costing.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Cost Driver</th>
<th>Cost Rates</th>
<th>Quantity for Satin Sheen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incoming material inspection</td>
<td>Type of material</td>
<td>$11.50 per type</td>
<td>12 types</td>
</tr>
<tr>
<td>In-process inspection</td>
<td>Number of units</td>
<td>$0.14 per unit</td>
<td>17,500 units</td>
</tr>
<tr>
<td>Product certification</td>
<td>Per order</td>
<td>$77 per order</td>
<td>25 orders</td>
</tr>
</tbody>
</table>

(c) HOCK international, page 5
The monthly quality control cost assigned to Satin Sheen makeup using activity-based costing (ABC) is

A. $525.50 lower than the cost using the traditional system.
B. $88.64 per order.
C. $8,500.50
D. $525.50 higher than the cost using the traditional system.

A. This answer is incorrect.
B. This answer is incorrect.
C. This answer is incorrect.

D. Under the traditional system, overheads are allocated based on direct labor at a rate of 14.5% of direct labor. Direct labor costs were $27,500 and 14.5% of this is $3,987.50. Under ABC we will need to make three allocations - one for each activity. For incoming materials the amount charged to Satin Sheen is $138 (12 * $11.50). For in-process inspection it is $2,450 (17,500 * $.14). For product certification it is $1,925 (25 * $77). Adding these three amounts together, we get $4,513, which is $525.50 more than what was allocated under the traditional system.

Question 9 - CIA 587 IV-6 - Joint and By-Products

A lumber company produces two-by-fours and four-by-eights as joint products and sawdust as a by-product. The packaged sawdust can be sold for $2 per pound. Packaging costs for the sawdust are $.10 per pound and sales commissions are 10% of sales price. The by-product net revenue serves to reduce joint processing costs for joint products. Joint products are assigned joint costs based on board feet. Data follows:

- Joint processing costs: $50,000
- Two-by-fours produced (board feet): 200,000
- Four-by-eights produced (board feet): 100,000
- Sawdust produced (pounds): 1,000

What is the cost assigned to two-by-fours?

A. $33,333.
B. $32,133.
C. $32,000.
D. $32,200.

A. This is the amount that would be allocated if the net revenue from the by-product did not reduce the joint costs to be allocated.

B. This answer does not include the $.10 per pound packaging costs as a reduction of the net revenue from the by-product.

C. This is the answer if the joint costs are reduced by the entire $2,000 selling price of the sawdust. The joint costs are reduced only by the amount of the net revenue of the by-product.

D. In this question, we can very easily see that the two-by-fours represent 2/3 of the total board feet that is produced and as such will be allocated 2/3 of the joint costs. What makes this question a bit more difficult is the need to reduce the joint costs by the net revenues from the sale of the sawdust (the by-product). There are 1,000 pounds of sawdust produced and this will be sold for $2.00 a pound. However, there is a $.10 packaging charge per pound of sawdust and a 10% commission, which is $.20. SO, for each pound of sawdust, the company will receive $1.70. In total, this is $1,700. This will reduce the joint costs to $48,300, and
2/3 of this is $32,200.

Question 10 - CMA 1293 3-3 H2 - Joint and By-Products

Atlas Foods produces the following three supplemental food products simultaneously through a refining process costing $93,000.

- **Alfa:** 10,000 pounds of Alfa, a popular but relatively rare grain supplement having a caloric value of 4,400 calories per pound.
- **Betters:** 5,000 pounds of Betters, a flavoring material high in carbohydrates with a caloric value of 11,200 calories per pound.
- **Morefeed:** 1,000 pounds of Morefeed, used as a cattle feed supplement with a caloric value of 1,000 calories per pound.

The joint products, Alfa and Betters, have a final selling price of $4 per pound and $10 per pound, respectively, after additional processing costs of $2 per pound of each product are incurred after the split-off point. Morefeed, a by-product, is sold at the split-off point for $3 per pound.

Assuming Atlas Foods inventories Morefeed, the by-product, the joint cost to be allocated to Betters using the weighted-quantity method based on caloric value per pound is

A. $39,600
B. $39,208
C. $40,920
D. $50,400

A. This is the amount that is allocated to Alfa.

B. This is the amount that would be allocated to Alfa if we included the calories from the Morefeed into the calculation.

C. This is the amount that would be allocated to Alfa if the joint costs are not reduced by the sales value of the by-product.

D. The total calories of Alfa are 44,000,000 and the total calories of Betters are 56,000,000. In total, this is 100,000,000 calories, of which Better is 56%. The total joint costs to allocate are $90,000. This is made up of the $93,000 in joint costs reduced by the inventoried sales value of the by-product. Betters is to receive 56% of this $90,000, or $50,400.

Question 11 - CMA Sample Q3-6 - Process Costing

When compared with normal spoilage, abnormal spoilage

A. Is generally thought to be more controllable by production management than normal spoilage.
B. Is given the same accounting treatment as normal spoilage.
C. Arises more frequently from factors that are inherent in the manufacturing process.
D. Is not typically influenced by the "tightness" of production standard.

A. Because the level of normal spoilage is what happens naturally in the process, abnormal spoilage will only occur if something unusual occurs. Therefore, production management should be able to reduce abnormal spoilage through proper monitoring of the process to detect and abnormal problems before they reach the actual production process, leading to abnormal spoilage.
B. Abnormal spoilage is expensed on the income statement, and normal spoilage is added to the costs of the good units produced. There is a difference in the treatment of the costs of spoilage.

C. Since abnormal spoilage is the spoilage that is in excess of the expected spoilage, normal spoilage will occur more often than abnormal spoilage.

D. Answer D is incorrect. Since abnormal spoilage is the spoilage in excess of the expected spoilage, tighter standards will cause there to be more abnormal spoilage. This is because with tight standards fewer units will be expected to be spoiled normally.

Question 12 - CMA 697 3-4 - Process Costing

Smile Labs develops 35mm film using a four-step process that moves progressively through four departments. The company specializes in overnight service and has the largest drug store chain as its primary customer. Currently, direct labor, direct materials, and overhead are accumulated by department. The cost accumulation system that best describes the system Smile Labs is using is

A. Operation costing.
B. Activity-based costing.
C. Job-order costing.
D. Process costing.

A. Operation costing is used when there is a similar process applied to units that differ in the materials that are input into the process. This is not the case here.

B. Activity-based costing requires the identification and use of cost drivers, which are not present in the information given.

C. Job-order costing is used when each product is different and unique from the others.

D. Process costing is usually used in a system like this where the similar products move through a process with different stages or departments.

Question 13 - CMA 697 3-6 - Service Cost Allocation

The Photocopying Department provides photocopy services for both Departments A and B and has prepared its total budget using the following information for next year.

Fixed costs $100,000
Available capacity 4,000,000 pages
Budgeted usage
Department A 1,200,000 pages
Department B 2,400,000 pages
Variable cost $0.03 per page

Assume that the single-rate method of cost allocation is used and the allocation base is budgeted usage. How much photo copying cost will be allocated to Department B in the budget year?

A. $138,667
B. $72,000
C. $132,000
D. $122,000

A. If the only allocation base is the budgeted usage, then Department B will receive 2/3 of the fixed costs since they use 2/3 of the printing services. This is $66,667. In addition to the fixed costs, though, they will also receive a charge of $.03 per page that they are budgeted to print. Since they were budgeted to print 2,400,000 pages, this variable charge is $72,000. So, in total Department B will be charged $138,667.

B. This is the variable charge for Department B and does not include the fixed charge they will receive.

C. This answer allocates the fixed costs at a rate calculated using the capacity, not the budgeting usage.

D. This answer allocates the fixed costs equally between the two departments.

Question 14 - CMA 1292 3-6 - Other Costing Systems

The costing method that is properly classified for both external and internal reporting purposes is

External Reporting / Internal Reporting

A. Job-order costing - No / Yes
B. Variable costing - No / Yes
C. Process costing - No / No
D. Activity-based costing - No / Yes

A. Job-order costing may be used for external reporting.

B. Variable costing may not be used for external reporting, but may be used for internal reporting, so this is properly classified.

C. Process costing may be used for both internal and external reporting.

D. Activity-based costing may be used for external reporting.

Question 15 - CMA 693 3-2 - General Overhead Allocation

Because of changes that are occurring in the basic operations of many firms, all of the following represent trends in the way indirect costs are allocated except

A. Treating direct labor as an indirect manufacturing cost in an automated factory.
B. Using throughput time as an application base to increase awareness of the costs associated with lengthened throughput time.
C. Using several machine cost pools to measure product costs on the basis of time in a machine center.
D. Preferring plant-wide application rates that are applied to machine hours rather than incurring the cost of detailed allocations.

A. In an automated factory there is not much labor and it does not come into direct contact with the products being produced. Therefore, it may be treated as an indirect manufacturing cost, essentially like maintenance.

B. This is a trend in costing because the time that a unit spends in the factory does have a cost with it. This would probably not be used as the only allocation basis, but it may be used for the allocation of some factory overheads.

C. The trends now are to use several cost pools in the allocation of the costs.
D. With computer systems, there is a trend to move away from plant-wide rates for allocation.

**Question 16 - CMA 678 4-12 - Cost Terminology and Classifications**

Controllable costs are those that

A. Will be unaffected by current managerial decisions.
B. Management decides to incur in the current period to enable the company to achieve objectives other than the filling of orders placed by customers.
C. Are likely to respond to the amount of attention devoted to them by a specified manager.
D. Are governed mainly by past decisions that established the present levels of operating and organizational capacity and that only change slowly in response to small changes in capacity.

A. This is the definition of a sunk cost.
B. This is the definition of a discretionary cost.
C. Controllable costs are the production costs that are able to be controlled by a manager. Therefore, the more time a manager devotes to them, the more the cost will change.
D. This is the definition of a committed cost.

**Question 17 - CMA 1293 3-2 - Service Cost Allocation**

The most accurate method of allocating service department costs is the

A. Step method.
B. Accretion method.
C. Direct method.
D. Reciprocal method.

A. The step method allocates some service department costs to other service departments, but does not allocate them back to those service departments already allocated.
B. The accretion method is not a method of allocating the costs of the service departments.
C. The direct method does not consider any services provided by one service department to another service department. Therefore, though quick and easy, the direct method does not provide the most accurate allocation of the costs of the service departments.
D. The reciprocal method is the most accurate method of allocating service department costs because it takes into account all of the services that are provided by one service department to other service departments.

**Question 18 - CMA 1296 3-28 - Activity Based Costing**

The use of activity-based costing normally results in

(c) HOCK international, page 10
A. Substantially lower unit costs for low-volume products than is reported by traditional product costing.
B. Decreased setup costs being charged to low-volume products.
C. Equalizing setup costs for all product lines.
D. Substantially greater unit costs for low-volume products than is reported by traditional product costing.

A. Usually, under ABC the items that are low in volume have more costs charged to them than under a traditional, or other system.
B. Under ABC there will probably be more setup costs charged to low volume products because the setup costs are probably allocated and distributed separately from other overhead costs.
C. Under ABC not all product lines will have the same setup costs because it is unlikely that every product line has the same number of setups required.
D. Because of the fact that ABC usually uses more allocation bases than other methods, those small units that may not use much of the overall machine hours or labor hours usually end up with more overhead costs allocated to them under ABC.

**Question 19 - CMA 1292 3-16 - General Overhead Allocation**

Nanjones Company manufactures a line of products distributed nationally through wholesalers. Presented below are planned manufacturing data for the year and actual data for November of the current year. The company applies overhead based on planned machine hours using a predetermined annual rate.

<table>
<thead>
<tr>
<th>Planning Data</th>
<th>Annual</th>
<th>November</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed manufacturing overhead</td>
<td>$1,200,000</td>
<td>$100,000</td>
</tr>
<tr>
<td>Variable manufacturing overhead</td>
<td>2,400,000</td>
<td>220,000</td>
</tr>
<tr>
<td>Direct labor hours</td>
<td>48,000</td>
<td>4,000</td>
</tr>
<tr>
<td>Machine hours</td>
<td>240,000</td>
<td>22,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data for November</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct labor hours (actual)</td>
<td>4,200</td>
<td></td>
</tr>
<tr>
<td>Direct labor hours (plan based on output)</td>
<td>4,000</td>
<td></td>
</tr>
<tr>
<td>Machine hours (actual)</td>
<td>21,600</td>
<td></td>
</tr>
<tr>
<td>Machine hours (plan based on output)</td>
<td>21,000</td>
<td></td>
</tr>
<tr>
<td>Fixed manufacturing overhead</td>
<td>$101,200</td>
<td></td>
</tr>
<tr>
<td>Variable manufacturing overhead</td>
<td>$214,000</td>
<td></td>
</tr>
</tbody>
</table>

The total amount of overhead applied to production for November was

A. $315,000.
B. $300,000.
C. $320,000.
D. $316,200.

A. Nanjones applies overhead based on planned machine hours using a predetermined annual rate. The total amount of planned annual manufacturing overhead is the sum of fixed and variable factory overheads, or $3,600,000 ($1,200,000 fixed + $2,400,000 variable). Planned machine hours are 240,000. Knowing these two numbers we can now calculate the predetermined overhead application rate of $15 per hour ($3,600,000 ÷ 240,000). Now we can calculate the amount of overhead applied using this application rate and the number of machine hours planned for particular level of output, which is 21,000 hours. The total overhead applied is $15 * 21,000, or $315,000.

B. This amount is calculated using labor hours as the base of overhead allocation at the rate of $75 and the amount of
planned direct labor hours for given level of output. See the correct answer for a complete explanation.

C. This answer is incorrect. See the correct answer for a complete explanation.

D. This answer is incorrect. See the correct answer for a complete explanation.

Question 20 - CIA 590 IV-8 - Service Cost Allocation

A public accounting firm has two departments, Management Consulting Services (MCS) and Tax Advisory Services (TAS). These two departments use the services of two service departments, Computer Programming (CP) and Computer Operations (CO). The percentages of each service used by each department for a typical period are:

<table>
<thead>
<tr>
<th></th>
<th>CP</th>
<th>CO</th>
<th>MCS</th>
<th>TAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP</td>
<td>30%</td>
<td>50%</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td>CO</td>
<td>25%</td>
<td>45%</td>
<td>30%</td>
<td></td>
</tr>
</tbody>
</table>

The company prices its management consulting and tax advisory services on the basis of estimated costs of providing those services. Based upon this information, the most appropriate method for allocating service department costs is the

A. Reciprocal method.
B. Physical-units method.
C. Massachusetts Formula.
D. Step-down method.

A. Because the service departments use each other, the best method of the service department overhead is the reciprocal method. This allocates costs from the service departments to each other, and then to the production departments.

B. This is a method for allocating joint costs, not for allocating the overhead of service departments.

C. The Massachusetts Formula is not covered on the CMA and CFM Exams.

D. The step down method would be appropriate if one of the service departments did not use the services of the other service department. However, since both service departments use each other, the reciprocal method is more appropriate.

Question 21 - CMA 678 4-9 - Cost Terminology and Classifications

Variable costs are all costs

A. That are associated with marketing, shipping, warehousing, and billing activities.
B. Of manufacturing incurred to produce units of output.
C. That fluctuate in total in response to small changes in the rate of utilization of capacity.
D. That do not change in total for a given period and relevant range but become progressively smaller on a per unit basis as volume increases.

A. These are selling and administration costs and while some of these costs may be variable, some of them will be fixed.

B. While many manufacturing costs are variable, not all of them are variable.
C. Variable costs are costs that are incurred only if production takes place. Therefore, the more units that are produced, the greater the total variable costs will be. And if production decreases, so will the total variable costs.

D. This is the definition of fixed costs as fixed costs do not change in total as production levels change.

---

**Question 22 - CMA 1292 3-17 - General Overhead Allocation**

Nanjones Company manufactures a line of products distributed nationally through wholesalers. Presented below are planned manufacturing data for the year and actual data for November of the current year. The company applies overhead based on planned machine hours using a predetermined annual rate.

<table>
<thead>
<tr>
<th>Planning Data</th>
<th>Annual</th>
<th>November</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed manufacturing overhead</td>
<td>$1,200,000</td>
<td>$100,000</td>
</tr>
<tr>
<td>Variable manufacturing overhead</td>
<td>2,400,000</td>
<td>220,000</td>
</tr>
<tr>
<td>Direct labor hours</td>
<td>48,000</td>
<td>4,000</td>
</tr>
<tr>
<td>Machine hours</td>
<td>240,000</td>
<td>22,000</td>
</tr>
</tbody>
</table>

**Data for November**

- Direct labor hours (actual): 4,200
- Direct labor hours (plan based on output): 4,000
- Machine hours (actual): 21,600
- Machine hours (plan based on output): 21,000
- Fixed manufacturing overhead: $101,200
- Variable manufacturing overhead: $214,000

The amount of over or underapplied variable manufacturing overhead for November was

A. $20,000 overapplied.
B. $4,000 underapplied.
C. $6,000 underapplied.
D. $6,000 overapplied.

A. This answer is incorrect. See the correct answer for a complete explanation.

B. Nanjones applies overhead based on planned machine hours using a predetermined annual rate. The amount of planned variable manufacturing overhead was $2,400,000 and amount of planned machine hours were 240,000. Thus, application rate for variable manufacturing overhead was $10 per hour ($2,400,000 / 240,000). Now we can determine how much VMOH was applied using this application rate and number of machine hours planned for the particular level of output as follows: $10 * 21,000 = $210,000. Comparing the actual amount of VMOH ($214,000) with the applied ($210,000) we conclude that there was $4,000 of underapplied overhead.

C. This answer is incorrect. See the correct answer for a complete explanation.

D. In solving this question we should use the flexible budget number of overhead allocation basis, or the number of machine hours planned for the particular level of output (21,000 hours) instead of the static budget figure planned for November (22,000 hours), which this answer uses. If we were to use the static budget figure of 22,000 hours, we would get $220,000 VMOH applied. Comparing actual amount of VMOH ($214,000) with applied ($220,000) we would get 6,000 overapplied VMOH.
Question 23 - CMA 1292 3-5 - Variable and Absorption Costing

Absorption costing and variable costing are two different methods of assigning costs to units produced. Of the 4 cost items listed below, identify the one that is not correctly accounted for as a product cost.

Part of Product Cost under Absorption Cost / Variable Cost:

A. Packaging and shipping costs - Yes / Yes
B. Direct labor cost - Yes / Yes
C. Manufacturing supplies - Yes / Yes
D. Insurance on factory - Yes / No

A. Packaging and shipping are not production costs so they are not product costs under either method.
B. Direct labor is a product cost under both methods.
C. Manufacturing costs are product costs under both methods.
D. Insurance is a fixed factory overhead cost so it is a product cost under absorption costing, but not under variable costing.

Question 24 - CMA 1290 3-4 - General Overhead Allocation

Units of production is an appropriate overhead allocation base when

A. Only one product is manufactured.
B. Direct labor costs are low.
C. Direct material costs are large relative to direct labor costs incurred.
D. Several well-differentiated products are manufactured.

A. The only time when units of production is an appropriate allocation base is when the company produces only one product.
B. The only time when units of production is an appropriate allocation base is when the company produces only one product.
C. The only time when units of production is an appropriate allocation base is when the company produces only one product.
D. The only time when units of production is an appropriate allocation base is when the company produces only one product.

Question 25 - CMA Sample Q3-3 - Variable and Absorption Costing

The change in period-to-period operating income when using variable costing can be explained by the change in the

A. Unit sales level multiplied by a constant unit contribution margin.
B. Unit sales level multiplied by the unit sales price.
C. Finished goods inventory level multiplied by a constant unit contribution margin.
D. Finished goods inventory level multiplied by the unit sales price.

A. Under variable costing all fixed costs are expensed in the period in which they are incurred. Therefore, if
the unit contribution margin is stable and the fixed costs are stable, the difference in income between two periods can be explained by change in the level of sales multiplied by the contribution margin per unit.

B. This simply calculates the level of revenue, which does not necessarily equal the change in income from one period to the next.

C. A change in the level of inventory will not explain or measure the change in profit.

D. A change in the level of inventory will not explain or measure the change in profit.

---

**Question 26**  -  CMA 1292 3-4 - Joint and By-Products

In joint-product costing and analysis, which one of the following costs is relevant when deciding the point at which a product should be sold to maximize profits?

A. Joint costs to the split-off point.
B. Separable costs after the split-off point.
C. Sales salaries for the period when the units were produced.
D. Purchase costs of the materials required for the joint products.

A. To determine when a product should be sold, we need to look at the costs to manufacture further and the incremental revenue that will be received by manufacturing further. The join costs up to the split-off point are irrelevant in this decision as they are sunk costs.

B. To determine when a product should be sold, we need to look at the costs to manufacture further and the incremental revenue that will be received by manufacturing further. The costs incurred after the split-off point are the costs of further manufacture and are therefore relevant to this decision.

C. To determine when a product should be sold, we need to look at the costs to manufacture further and the incremental revenue that will be received by manufacturing further. The sales salaries for the period are not relevant costs.

D. To determine when a product should be sold, we need to look at the costs to manufacture further and the incremental revenue that will be received by manufacturing further. The material costs for the joint products are irrelevant in this decision as they are sunk costs.

---

**Question 27**  -  CMA 692 3-2 - Process Costing

Marlan Manufacturing produces a product that passes through two departments. The units from the molding department are completed in the assembly department. The units are completed in assembly by adding the remaining direct materials when the units are 60% complete with respect to conversion costs. Conversion costs are added proportionately in assembly. The production activity in the assembly department for the current month is presented as follows. Marlan uses the FIFO (first-in, first-out) inventory method in its process cost system.

<table>
<thead>
<tr>
<th>Beginning inventory units (25% complete with respect to conversion costs)</th>
<th>8,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units transferred in from the molding department during the month</td>
<td>42,000</td>
</tr>
<tr>
<td>Units to account for</td>
<td>50,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Units completed and transferred to finished goods inventory</th>
<th>38,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ending inventory units (40% complete with respect to conversion costs)</td>
<td>12,000</td>
</tr>
<tr>
<td>Units accounted for</td>
<td>50,000</td>
</tr>
</tbody>
</table>


(c) HOCK international, page 15
The equivalent units transferred from the molding department to the assembly department for the current month are

A. 42,000 units.
B. 30,000 units.
C. 40,800 units.
D. 38,000 units.

A. This is actually a very simple question since there are no calculations to make. The EUP related to the units transferred in from the previous department will be equal to the physical number of units transferred in.

B. This is the number of units started and completed during the period.

C. This is the equivalent units of production for conversion costs for the period.

D. This is the number of units transferred out of the assembly department.

---

**Question 28** - CIA 1193 IV-1 - Cost Terminology and Classifications

Many companies recognize three major categories of costs of manufacturing a product. These are direct materials, direct labor, and overhead. Which of the following is an overhead cost in the production of an automobile?

A. The cost of the tires on each automobile.
B. The cost of small tools used in mounting tires on each automobile.
C. The cost of the laborers who place tires on each automobile.
D. The delivery costs for the tires on each automobile.

A. The tires are direct materials and can be traced to each individual automobile.

B. The cost of small tools are not able to be traced to an individual automobile so would be included in factory overhead.

C. The laborers who place the tires on the automobile are direct labor and can be traced to each automobile.

D. The delivery costs for each tire will be included in the cost of the tire and are therefore direct materials.

---

**Question 29** - CMA 695 3-7 - Process Costing

Kimbeth Manufacturing uses a process cost system to manufacture Dust Density Sensors for the mining industry. The following information pertains to operations for the month of May.

<table>
<thead>
<tr>
<th></th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning work-in-process inventory, May 1</td>
<td>16,000</td>
</tr>
<tr>
<td>Started in production during May</td>
<td>100,000</td>
</tr>
<tr>
<td>Completed production during May</td>
<td>92,000</td>
</tr>
<tr>
<td>Ending work-in-process inventory, May 31</td>
<td>24,000</td>
</tr>
</tbody>
</table>

The beginning inventory was 60% complete for materials and 20% complete for conversion costs. The ending inventory was 90% complete for materials and 40% complete for conversion costs.

Costs pertaining to the month of May are as follows:

- Beginning inventory costs are materials, $54,560; direct labor, $20,320; and factory overhead, $15,240.
Costs incurred during May are materials used, $468,000; direct labor, $182,880; and factory overhead, $391,160.

Using the weighted-average method, the equivalent unit conversion cost for May is

- A. $6.20
- B. $6.00
- C. $5.65
- D. $5.83

A. This answer is incorrect.

B. Under the weighted average method to calculate the equivalent units, we simply need to add together the number of units completed and the number of EUP that were done in order to start the EWIP. In this question 92,000 units were completed and the 24,000 units in EWIP are 40% complete for conversion costs, giving us 9,600 EUP in EWIP. This gives a total of 101,600 EUP of conversion costs for the period. The total costs for conversion costs under the weighted average method will include the costs used during the period ($182,880 + $391,160) as well as the costs of the conversion costs in BWIP ($20,320 + $15,240). The total cost for conversion costs is $609,600 and this is divided by the 101,600 EUP giving us a cost per unit of materials of $6.00.

C. This answer does not include the costs of the conversion costs that were in BWIP.

D. This is the answer under the FIFO method.

---

**Question 30 - CMA 1273 4-2 - Variable and Absorption Costing**

When a firm prepares financial reports by using absorption costing,

- A. Profits will always decrease with decreases in sales.
- B. Profits will always increase with increases in sales.
- C. Decreased output and constant sales result in increased profits.
- D. Profits may decrease with increased sales even if there is no current change in selling prices and costs.

A. Under absorption costing, a decrease in sales may not lead to a decrease in profits. If the cost of the item is more than the sales price, a decrease in sales would in a sense increase profits.

B. Profits will not always increase with an increase in sales under the absorption method.

C. If output is decreased there will be an in crease in the per unit cost, so as a unit is sold there will be a smaller profit. There will still be a profit (unless the cost increases too much), but it will be a decreased profit.

D. Under absorption costing it is possible that profits will decrease even if there is an increase in sales and prices and costs do not change. This would occur if the fixed cost per unit in the prior period was larger than in the current period and the per unit fixed costs in the prior period actually made the cost of the unit larger than the current selling price. In this case, the cost of goods sold would be higher than the sales price and profit would be decreased, even though sales increased. This is unlikely to happen, but theoretically, it could happen under absorption costing.

---

**Question 31 - CMA 691 3-16 - Service Cost Allocation**

The managers of Rochester Manufacturing are discussing ways to allocate the cost of service departments such as
Quality Control and Maintenance to the production departments. To aid them in this discussion, the controller has provided the following information:

<table>
<thead>
<tr>
<th></th>
<th>Quality Control</th>
<th>Maintenance</th>
<th>Machining</th>
<th>Assembly</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budgeted overhead costs before allocation</td>
<td>$350,000</td>
<td>$200,000</td>
<td>$400,000</td>
<td>$300,000</td>
<td>$1,250,000</td>
</tr>
<tr>
<td>Budgeted machine hours</td>
<td>50,000</td>
<td>50,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Budgeted direct labor hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Budgeted hours of service:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality control</td>
<td>7,000</td>
<td>21,000</td>
<td>7,000</td>
<td>35,000</td>
<td>70,000</td>
</tr>
<tr>
<td>Maintenance</td>
<td>10,000</td>
<td>18,000</td>
<td>12,000</td>
<td>40,000</td>
<td>42,000</td>
</tr>
</tbody>
</table>

If Rochester Manufacturing uses the direct method of allocating service department costs, the total service costs allocated to the assembly department would be

A. $87,500.
B. $120,000.
C. $167,500.
D. $80,000.

A. This answer is incorrect.
B. This answer is incorrect.

C. Under the direct method the service department costs are not allocated to other service departments. As such, we need to make certain that when we determine the ratio to allocate the costs to the production departments, we do not include the usage by the other service departments. In order to allocate the costs of the quality control department to assembly, we need to determine what percentage of the quality control time that was used by the production departments was used by assembly. Assembly used QC 7,000 hours and machining used QC 21,000. Thus, assembly will get 25% (or $87,500) of the QC costs. Assembly used the maintenance department a total of 12,000 hours and machining used maintenance for 18,000 hours. Thus, assembly will get 40% of the maintenance costs (or $80,000). In total, therefore, the assembly department received $167,500 from the service departments.

D. This answer is incorrect.

---

**Question 32 - CMA 1296 3-29 - Other Costing Systems**

Life-cycle costing

A. Includes only manufacturing cost, selling expense, and distribution expense.
B. Emphasizes cost savings opportunities during the manufacturing cycle.
C. Includes only manufacturing costs incurred over the life of the product.
D. Is sometimes used as a basis for cost planning and product pricing.

A. All non-manufacturing costs such as research and development and advertising are also considered in life-cycle costing.
B. Life-cycle costing looks for savings opportunities in all parts of the value-chain, not only in the manufacturing cycle.
C. Non-manufacturing costs such as research and development and advertising are also considered in life-cycle costing.
D. Life-cycle costing takes into account all costs associated with a product, including those that come before production and after the sale. This method is often in cost planning and product pricing when there are
significant non-production costs that need to be recovered.

---

**Question 33 - CIA 586 IV-6 - Process Costing**

A company that manufactures baseballs begins operations on January 1. Each baseball requires three elements: a hard plastic core, several yards of twine that are wrapped around the plastic core, and a piece of leather to cover the baseball. The plastic core is started down a conveyor belt and is automatically wrapped with twine to the approximate size of a baseball at which time the leather cover is sewn to the wrapped twine. Finished baseballs are inspected and defective ones are pulled out. Defective baseballs cannot be economically salvaged and are destroyed. Normal spoilage is 3% of the number of baseballs that pass inspection. Cost and production reports for the first week of operations are:

- Raw materials cost $840
- Conversion cost 315
- Total cost $1,155

During the week 2,100 baseballs were completed and 2,000 passed inspection. There was no ending work-in-process. Calculate abnormal spoilage.

A. $1,100.
B. $33.
C. $20.35.
D. $22.

A. This is the cost of good baseballs that were produced.
B. This is the amount of normal spoilage.
C. This answer calculates normal spoilage as 3% of the number of baseballs completed, not of the baseballs that pass inspection.
D. The first thing that we need to do is to determine how many units are abnormal spoilage. Since 3% of the good units is considered normal, this is 60 baseballs (3% * 2,000 units passing inspection). Since there were 100 spoiled units and 60 is the normal spoilage, abnormal spoilage was 40 units. After this, we need to determine the cost per unit. Remember that we allocate costs to the spoiled units. Because there was no beginning or ending work in progress, we can treat all of the costs the same, giving a total cost of $1,155. This is allocated to each of the 2,100 units produced, giving a rate of $.55 per unit. This is the cost that is allocated to the 40 abnormally spoiled units, giving a total cost of $22 for abnormal spoilage.

---

**Question 34 - CMA 1295 3-26 - Activity Based Costing**

An accounting system that collects financial and operating data on the basis of the underlying nature and extent of the cost drivers is

A. Cycle-time costing.
B. Activity-based costing.
C. Variable costing.
D. Direct costing.

A. Cycle-time is the amount of time that the customer must wait for their order after the order has been placed.
B. Activity-based costing is the system that uses cost drivers to allocate costs.

C. In variable costing, fixed overheads are expensed in the period that they are incurred and cost drivers are not used. This is the same method as direct costing.

D. In direct costing, fixed overheads are expensed in the period that they are incurred and cost drivers are not used. This is the same method as variable costing.

Question 35 - CMA 690 4-6 - Joint and By-Products

Sonimad Sawmill manufactures two lumber products from a joint milling process. The two products developed are mine support braces (MSB) and unseasoned commercial building lumber (CBL). A standard production run incurs joint costs of $300,000 and results in 60,000 units of MSB and 90,000 units of CBL. Each MSB sells for $2 per unit, and each CBL sells for $4 per unit.

Assuming no further processing work is done after the split-off point, the amount of joint cost allocated to commercial building lumber (CBL) on a physical quantity allocation basis would be

A. $180,000.
B. $75,000.
C. $120,000.
D. $225,000.

A. In order to allocate the costs using the physical quantity method, we know to know the total physical quantity. There are 60,000 units of MSB and 90,000 units of CBL. There are 150,000 total units and CBL represents 60% of the total units. The joint costs are $300,000 and CBL should be allocated 60%, or $180,000, of the joint costs.

B. This is how much would be allocated to MSB if the allocation was done using the sales value of the products.

C. This is how much should be allocated to MSB using the physical units as the basis of allocation.

D. This is how much would be allocated to CBL if the allocation was done using the sales value of the products.

Question 36 - CMA 690 4-10 - Process Costing

During May 1997, Mercer Company completed 50,000 units costing $600,000, exclusive of spoilage allocation. Of these completed units, 25,000 were sold during the month. An additional 10,000 units, costing $80,000, were 50% complete at May 31. All units are inspected between the completion of manufacturing and transfer to finished goods inventory. Normal spoilage for the month was $20,000, and abnormal spoilage of $50,000 was also incurred during the month. The portion of total spoilage that should be charged against revenue in May is

A. $60,000.
B. $50,000.
C. $70,000.
D. $20,000.

A. The abnormal spoilage of $50,000 is charged directly to the income statement in this period. The $20,000 of normal spoilage is allocated to the 50,000 good units produced. This normal spoilage will then be on the income statement only when the units are sold. Since only half of the good units were sold, only 1/2 of the normal spoilage, or $10,000, has been charged against revenue. So, the total spoilage costs on the income statement in May are $60,000.

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B. This is the amount of abnormal spoilage, and it is charged to the income statement.

C. This is the total of the normal and abnormal spoilage. However, some of the normal spoilage is still in inventory at the end of the period and has not been charged against income.

D. This is the total normal spoilage for the month and it is allocated to the good units that were finished.

**Question 37** - CIA 577 IV-18 - Variable and Absorption Costing

In the application of direct costing as a cost-allocation process in manufacturing,

A. Variable indirect costs are treated as product costs.
B. Variable direct costs are treated as period costs.
C. Nonvariable direct costs are treated as product costs.
D. Nonvariable indirect costs are treated as product costs.

**A. Under direct (or variable) costing all variable production costs (direct or indirect) to be product costs.**

B. Variable direct costs are treated as a product cost under direct (or variable) costing.

C. Fixed direct costs are expensed as a period cost under direct (or variable) costing.

D. Fixed indirect costs are expensed under direct (or variable) costing.

**Question 38** - CMA 1293 3-8 - Joint and By-Products

The principal disadvantage of using the physical quantity method of allocating joint costs is that

A. Physical quantities may be difficult to measure.
B. Costs assigned to inventories may have no relationship to value.
C. Joint costs, by definition, should not be separated on a unit basis.
D. Additional processing costs affect the allocation base.

A. Physical quantities should not be difficult to measure.

**B. When physical quantities are used to allocate joint costs, it is possible that the costs that are allocated to the units do not have a corresponding relationship to the value.**

C. Joint costs may be allocated on a per-unit basis.

D. If physical quantity is used, additional processing will not affect the allocation base.

**Question 39** - CIA 591 IV-14 - Variable and Absorption Costing

<table>
<thead>
<tr>
<th>Product sales:</th>
<th>1,000 units at $10 each</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable manufacturing costs:</td>
<td>$5.50 per unit</td>
</tr>
<tr>
<td>Fixed manufacturing overhead:</td>
<td>$1,200</td>
</tr>
</tbody>
</table>

(c) HOCK international, page 21
Variable selling and administrative costs: $.50 per unit sold
Fixed selling and administrative costs: $1,000
No beginning inventory
Units produced: 1,200

Assuming operating income under variable costing is $1,800, operating income under absorption costing is

A. $1,800
B. $2,167
C. $1,967
D. $2,000

A. This is the operating income under variable costing.
B. This answer is incorrect.
C. This answer is incorrect.
D. There are two ways that we can solve this problem. The first is to calculate a full absorption costing income statement. The second is to use the differences between variable and absorption costing to calculate the difference between the two methods. Since we are given the variable costing income, we can then back into the absorption costing income. The difference between the two methods is the treatment of fixed manufacturing overhead. Under variable costing it is expensed, but under absorption costing it is treated as a product cost. Since the fixed factory overheads were $1,200 and they produced 1,200 units, the fixed factory overhead per unit was only $1. Since production was 1,200 units and sales were only 1,000, inventory increased by 200 units. This means that the fixed factory overhead related to those 200 units is not on the income statement, but on the balance sheet. Therefore, the absorption method income will be $200 higher than the variable method income, or $2,000.

---

**Question 40 - CMA 1290 H5 - Variable and Absorption Costing**

Valyn Corporation employs an absorption costing system for internal reporting purposes; however, the company is considering using variable costing. Data regarding Valyn's planned and actual operations for the calendar year are presented below.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Planned</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning finished goods inventory</td>
<td>35,000</td>
<td>35,000</td>
</tr>
<tr>
<td>Sales</td>
<td>140,000</td>
<td>125,000</td>
</tr>
<tr>
<td>Production</td>
<td>140,000</td>
<td>130,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Costs</th>
<th>Planned Per Unit</th>
<th>Costs Total</th>
<th>Incurred Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct materials</td>
<td>$12.00</td>
<td>$1,680,000</td>
<td>$1,560,000</td>
</tr>
<tr>
<td>Direct labor</td>
<td>9.00</td>
<td>1,260,000</td>
<td>1,170,000</td>
</tr>
<tr>
<td>Variable manufacturing overhead</td>
<td>4.00</td>
<td>560,000</td>
<td>520,000</td>
</tr>
<tr>
<td>Fixed manufacturing overhead</td>
<td>5.00</td>
<td>700,000</td>
<td>715,000</td>
</tr>
<tr>
<td>Variable selling expenses</td>
<td>8.00</td>
<td>1,120,000</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Fixed selling expenses</td>
<td>7.00</td>
<td>980,000</td>
<td>980,000</td>
</tr>
<tr>
<td>Variable administrative expenses</td>
<td>2.00</td>
<td>280,000</td>
<td>250,000</td>
</tr>
<tr>
<td>Fixed administrative expenses</td>
<td>3.00</td>
<td>420,000</td>
<td>425,000</td>
</tr>
<tr>
<td>Total</td>
<td>$50.00</td>
<td>$7,000,000</td>
<td>$6,620,000</td>
</tr>
</tbody>
</table>

(c) HOCK international, page 22
The planned per unit cost figures shown in the above schedule were based on Valyn producing and selling 140,000 units. Valyn uses a predetermined manufacturing overhead rate for applying manufacturing overhead to its product; thus, a combined manufacturing overhead rate of $9.00 per unit was employed for absorption costing purposes. Any over- or underapplied manufacturing overhead is closed to the Cost of Goods Sold account at the end of the reporting year.

The beginning finished goods inventory for absorption costing purposes was valued at the previous year's planned unit manufacturing cost, which was the same as the current year's planned unit manufacturing cost. There are no work-in-process inventories at either the beginning or the end of the year. The planned and actual unit selling price for the current year was $70.00 per unit.

The difference between Valyn Corporation's operating income calculated on the absorption costing basis and calculated on the variable costing basis was

A. $40,000
B. $65,000
C. $25,000
D. $90,000

A. This answer is incorrect.
B. This answer is incorrect.
C. The difference between the two methods is the treatment of fixed factory overheads. Under the absorption method these costs are put into the units produced and under the variable method they are expensed. The fixed factory overhead cost per unit is $5 and we can determine the difference between these two methods by multiplying this $5 per unit difference by the number of units that were added to inventory during the period. Inventory increased by 5,000 units and 5,000 * $5 gives us a $25,000 difference in income between the two methods.
D. This answer is incorrect.

Question 41 - CMA 690 4-1 - Process Costing

Alex Company had the following inventories at the beginning and end of the month of January.

<table>
<thead>
<tr>
<th></th>
<th>January 1</th>
<th>January 31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finished goods</td>
<td>$125,000</td>
<td>$117,000</td>
</tr>
<tr>
<td>Work-in-process</td>
<td>235,000</td>
<td>251,000</td>
</tr>
<tr>
<td>Direct materials</td>
<td>134,000</td>
<td>124,000</td>
</tr>
</tbody>
</table>

The following additional manufacturing data were available for the month of January:

- Direct materials purchased: $189,000
- Purchase returns and allowances: $1,000
- Transportation-in: $3,000
- Direct labor: $300,000
- Actual factory overhead: $175,000

Alex Company applies factory overhead at a rate of 60% of direct labor cost, and any overapplied or underapplied factory overhead is deferred until the end of the year, December 31.

Alex Company's prime cost for January was
A. $199,000.
B. $201,000.
C. $489,000.
D. $501,000.

A. This is simply the direct materials, but it is calculated without taking into account transportation in and returns.

B. This is only the direct materials used and does not include direct labor, which is also a prime cost.

C. This is direct labor plus direct materials purchased.

D. The prime costs are direct materials and direct labor. We are told that the direct labor was $300,000, but will need to calculate the direct materials for January. The beginning direct materials was $134,000. During the period, they purchased $189,000 of direct materials and also incurred $3,000 in transportation in costs. However, they also returned $1,000 of direct materials during the period. Adding these together we can calculate the total direct materials that they had during January as $325,000. Since there was an ending inventory of $124,000, they must have used $201,000 of direct materials during the period. Added to the direct labor, the total prime costs were $501,000. We do not worry about the raw materials and finished goods inventory numbers because the amounts in those accounts were not related to the current period.

Question 42 - CMA 696 3-21 - General Overhead Allocation

The appropriate method for the disposition of underapplied or overapplied factory overhead

A. Depends on the significance of the amount.
B. Is apportioned to cost of goods sold and finished goods inventory.
C. Is to cost of goods sold only.
D. Is to finished goods inventory only.

A. The treatment of the underapplied or overapplied overhead depends on the materiality of the amount. If it is immaterial it is moved to cost of goods sold. If it is material it is apportioned between work in process, finished goods and cost of goods sold.

B. If the amount is material the underapplied or overapplied overhead is apportioned to work in process, finished goods and cost of goods sold.

C. If the amount of underapplied or overapplied overhead is immaterial, it is put into cost of goods sold. However, if the amount is material it is allocated to work in process and finished goods and cost of goods sold.

D. The underapplied or overapplied overhead is never allocated only to finished goods inventory.

Question 43 - CIA 591 IV-9 - Process Costing

Abnormal spoilage is

A. Not expected to occur under efficient operating conditions.
B. Not expected to occur when perfection standards are used.
C. Not usually controllable by the production supervisor.
D. The result of unrealistic production standards.

A. By definition, abnormal spoilage is the spoilage that is above what is expected to occur in normal, efficient operating conditions.
B. Because abnormal spoilage is spoilage that is above the expected amount, abnormal spoilage is never expected to occur.

C. Abnormal spoilage is usually considered to be something that the production supervisor can control. This is because abnormal spoilage will only occur if something outside of what was expected occurs.

D. Abnormal spoilage is not an automatic result of unrealistic production standards.

Question 44 - CMA 697 3-8 - Service Cost Allocation

M&P Tool has three service departments that support the production area. Outlined below is the estimated overhead by department for the upcoming year.

<table>
<thead>
<tr>
<th>Service Departments</th>
<th>Estimated Overhead</th>
<th>Number of Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receiving</td>
<td>$25,000</td>
<td>2</td>
</tr>
<tr>
<td>Repair</td>
<td>$35,000</td>
<td>2</td>
</tr>
<tr>
<td>Tool</td>
<td>$10,000</td>
<td>1</td>
</tr>
</tbody>
</table>

Production Departments
- Assembly: 25 employees
- Bolting: 12 employees

The Repair Department supports the greatest number of departments, followed by the Tool Department. Overhead cost is allocated to departments based upon the number of employees.

Using the direct method of allocation, how much of the Repair Department's overhead will be allocated to the Tool Department?

A. $7,000  
B. $11,667  
C. $875  
D. $0  

A. Under the direct method the costs of one service department are not allocated to the other service departments.

B. Under the direct method the costs of one service department are not allocated to the other service departments.

C. Under the direct method the costs of one service department are not allocated to the other service departments.

D. Under the direct method the costs of one service department are not allocated to the other service departments.

Question 45 - CMA 689 4-13 - Cost Terminology and Classifications

Hitchcock Industries has developed two new products but has only enough plant capacity to introduce one of these products this year. The company controller has gathered the following data to assist management in deciding which product should be selected for production.

Hitchcock's fixed overhead includes proportional rent and utilities, machinery depreciation, and supervisory salaries. Selling and administrative expenses are not allocated to products.
The costs included in Hitchcock's fixed overhead are

A. Prime costs.
B. Discretionary costs.
C. Committed costs.
D. Sunk costs.

A. Prime costs are the costs of direct material and direct labor.

B. Discretionary costs are costs that do not need to be incurred in the short-term. Since these are production costs, they do not need to be incurred and are not discretionary costs.

C. Because the costs for fixed overhead relate to items like rent, these are committed costs. This means that even though the company has not yet incurred the costs, they have already committed to incurring them in the future.

D. Sunk costs are costs that have already been spent and cannot be changed by current or future decisions. Not all of the fixed overhead are sunk costs, though it is possible that some of them are.

---

**Question 46 - CIA 586 IV-11 - Joint and By-Products**

A company processes a raw material into products F1, F2, and F3. Each ton of raw material produces five units of F1, two units of F2, and three units of F3. Joint-processing costs to the split-off point are $15 per ton. Further processing results in the following per-unit figures:

<table>
<thead>
<tr>
<th></th>
<th>F1</th>
<th>F2</th>
<th>F3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional processing costs per unit</td>
<td>$28</td>
<td>$30</td>
<td>$25</td>
</tr>
<tr>
<td>Selling price per unit</td>
<td>30</td>
<td>35</td>
<td>35</td>
</tr>
</tbody>
</table>

If joint costs are allocated based on the net realizable value (NRV) of finished product, what proportion of joint costs should be allocated to F1?

A. 30%.
B. 33-1/3%.
C. 20%.
D. 50%.

A. This is the answer if the allocation was done based on selling price, not NRV.

B. This is the amount that would be allocated if the joint costs were allocated equally to the three products.

C. The NRV of an item is calculated as the selling price minus the costs to complete and dispose. In order to allocate joint costs based on NRV, we need to calculate the total NRV that all of the joint products have at the
split off point. We will make these calculations based on one ton of raw materials - we can do this because
the answer is in %, not in the dollar amount. F1 has a NRV of $2 per unit and there are 5 units - this is $10 of
NRV. F2 has a NRV of $5 per unit and there are 2 units - this is $10 of NRV. F3 has a NRV of $10 per unit and
there are three units - this is $30 of NRV. In total there is $50 of NRV and the NRV of F1 is 20% of this amount.

D. This is the amount that would be allocated to F1 if physical units were used to allocate the joint costs.

Question 47 - CMA 689 4-9 - Variable and Absorption Costing

Hitchcock Industries has developed two new products but has only enough plant capacity to introduce one of these
products this year. The company controller has gathered the following data to assist management in deciding which
product should be selected for production.

Hitchcock's fixed overhead includes proportional rent and utilities, machinery depreciation, and supervisory salaries.
Selling and administrative expenses are not allocated to products.

<table>
<thead>
<tr>
<th>Cost per unit:</th>
<th>Power Drill</th>
<th>Power Saw</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw materials</td>
<td>$22.00</td>
<td>$18.00</td>
</tr>
<tr>
<td>Machining at $12/hr.</td>
<td>9.00</td>
<td>7.50</td>
</tr>
<tr>
<td>Assembly at $10/hr.</td>
<td>15.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Variable O/H at $8/hr.</td>
<td>18.00</td>
<td>9.00</td>
</tr>
<tr>
<td>Fixed O/H at $4/hr.</td>
<td>9.00</td>
<td>4.50</td>
</tr>
<tr>
<td><strong>Total unit cost:</strong></td>
<td><strong>$73.00</strong></td>
<td><strong>$44.00</strong></td>
</tr>
<tr>
<td>Suggested selling price</td>
<td>$88.98</td>
<td>$49.95</td>
</tr>
<tr>
<td>Actual research and development costs</td>
<td>$180,000</td>
<td>$95,000</td>
</tr>
<tr>
<td>Proposed advertising and promotion costs</td>
<td>$300,000</td>
<td>$250,000</td>
</tr>
</tbody>
</table>

The difference between the $49.95 selling price of Hitchcock's power saw and its total unit cost of $44.00 represents
the unit

A. Gross profit margin ratio.
B. Contribution margin.
C. Contribution margin ratio.
D. Gross profit.

A. Gross profit margin is the gross profit divided by the sales price.
B. Contribution margin is the sales price minus the variable costs.
C. Contribution margin ratio is the unit contribution margin (sales price minus variable costs) divided by sales price.
D. Gross profit is sales price minus total unit cost.

Question 48 - CMA 691 3-48a - Process Costing

Gregg Industries manufactures molded chairs. The three models of molded chairs, which are all variations of the
same design, are Standard (can be stacked), Deluxe (with arms), and Executive (with arms and padding). The
company uses batch manufacturing and has an operation costing system.

Gregg has an extrusion operation and subsequent operations to form, trim, and finish the chairs. Plastic sheets are
produced by the extrusion operation, some of which are sold directly to other manufacturers. During the forming
operation, the remaining plastic sheets are molded into chair seats and the legs are added; the standard model is sold
after this operation. During the trim operation, the arms are added to the deluxe and executive models and the chair edges are smoothed. Only the executive model enters the finish operation where the padding is added. All of the units produced are subject to the same steps within each operation, and no units are in process at the end of the period. The units of production and direct materials costs were as follows:

<table>
<thead>
<tr>
<th>Units Produced</th>
<th>Extrusion Materials</th>
<th>Form Materials</th>
<th>Trim Materials</th>
<th>Finish Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic sheets</td>
<td>5,000</td>
<td>$ 60,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard model</td>
<td>6,000</td>
<td>72,000</td>
<td>$24,000</td>
<td></td>
</tr>
<tr>
<td>Deluxe model</td>
<td>3,000</td>
<td>36,000</td>
<td>12,000</td>
<td>$9,000</td>
</tr>
<tr>
<td>Executive model</td>
<td>2,000</td>
<td>24,000</td>
<td>8,000</td>
<td>$12,000</td>
</tr>
<tr>
<td></td>
<td>16,000</td>
<td>$192,000</td>
<td>$44,000</td>
<td>$15,000</td>
</tr>
</tbody>
</table>

Manufacturing costs applied during the month were:

<table>
<thead>
<tr>
<th>Extrusion Operation</th>
<th>Form Operation</th>
<th>Trim Operation</th>
<th>Finish Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct labor</td>
<td>$152,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factory overhead</td>
<td>240,000</td>
<td>72,000</td>
<td>39,000</td>
</tr>
</tbody>
</table>

The unit cost of a standard model is

A. $69.30
B. $96.30
C. $52.50
D. $36.50

A. This is the unit cost of a deluxe model.
B. This is the unit cost of an executive model.
C. The standard model material costs are $96,000 ($72,000 + $24,000). Thus, the standard model unit cost for materials is $16.00 ($96,000 / 6,000 units of standard model). Next, we need to determine how much labor and overhead was allocated to the standard model at each stage of production. In the extrusion operation, the per unit cost is $24.50 ($392,000 total conversion costs / 16,000 units). In the form operation the unit cost is $12 per unit ($132,000 / 11,000 units). There are no costs allocated to the standard model from the trim and finish operations because the standard model does not go through these operations. Materials cost of $16.00 plus extrusion operation cost of $24.50 plus form operation cost of $12 equals total per unit cost of $52.50.
D. This is the cost of the plastic sheet.

---

**Question 49 - CMA 685 5-6 - Cost Terminology and Classifications**

A cost incurred for the benefit of more than one cost objective is

A. A prime cost.
B. A variable cost.
C. A common cost.
D. A conversion cost.

A. Prime costs are direct material and direct labor and they are traceable to one cost objective.
B. Variable costs are costs that vary as production changes. They may or may not benefit more than one cost objective.

C. Common costs are the costs that are shared by more than one cost objective.
D. Conversion costs are the costs of converting direct material to the finished goods - direct labor and overhead. They may or may not benefit more than one cost objective.

**Question 50 - CMA 689 4-22 - Joint and By-Products**

Killian Company manufactures two skin care lotions, Liquid Skin and Silken Skin, out of a joint process. The joint (common) costs incurred are $420,000 for a standard production run that generates 180,000 gallons of Liquid Skin (LS) and 120,000 gallons of Silken Skin (SS). Liquid Skin sells for $2.40 per gallon, and Silken Skin sells for $3.90 per gallon.

If no additional costs are incurred after the split-off point, the amount of joint cost of each production run allocated to Silken Skin on a physical-quantity basis is

A. $201,600.
B. $252,000.
C. $168,000.
D. $218,400.

A. This is the amount that would be allocated to LS using the NRV as the allocation basis.
B. This is the amount that would be allocated to LS using the physical quantity as the allocation basis.
C. In order to allocate the joint costs using the physical-quantity basis, we need to determine the total physical quantity that was produced. There were 180,000 gallons of LS and 120,000 gallons of SS. In total there were 300,000 gallons, of which SS comprised 40%. Therefore, SS should receive 40% of the $420,000 in joint costs. This is $168,000.
D. This is the amount that would be allocated to SS using the NRV as the allocation basis.

**Question 51 - CMA 1296 3-18 - Other Costing Systems**

Which one of the following alternatives correctly classifies the business application to the appropriate costing system?

Job Costing System / Process Costing System

A. Paint manufacturer / Retail banking
B. Print shop / Beverage drink manufacturer
C. Aircraft assembly / Public accounting firm
D. Wallpaper manufacturer / Oil refinery

A. A paint manufacturer would probably use process costing.
B. A print shop would use job order costing and a beverage drink manufacturer would probably use process costing.
C. A public accounting firm would use a job-order costing system.
D. A wallpaper manufacturer would probably use a process costing system.
Question 52 - CMA 690 4-9 - Joint and By-Products

Sonimad Sawmill manufactures two lumber products from a joint milling process. The two products developed are mine support braces (MSB) and unseasoned commercial building lumber (CBL). A standard production run incurs joint costs of $300,000 and results in 60,000 units of MSB and 90,000 units of CBL. Each MSB sells for $2 per unit, and each CBL sells for $4 per unit. Assume the commercial building lumber is not marketable at split-off but must be further planed and sized at a cost of $200,000 per production run. During this process, 10,000 units are unavoidably lost; these spoiled units have no discernible value. The remaining units of commercial building lumber are salable at $10.00 per unit. The mine support braces, although salable immediately at the split-off point, are coated with a tar-like preservative that costs $100,000 per production run. The braces are then sold for $5 each.

If Sonimad Sawmill chose not to process the mine support braces beyond the split-off point, the contribution from the joint milling process would be

A. $50,000 higher.
B. $100,000 higher.
C. $150,000 higher.
D. $80,000 lower.

A. This answer is incorrect.
B. This answer is incorrect.
C. This answer is incorrect.
D. If Sonimad were to process the MSB further, they would incur an additional cost of $100,000. They would also be able to sell the 60,000 units for $3 more per unit. This is an additional $180,000 in revenue. When reduced by the additional costs, Sonimad would increase their contribution by $80,000 if they further processed the MSB. By not processing the MSB further, their contribution would be $80,000 less.

Question 53 - CMA 1290 3-3 - Service Cost Allocation

There are several methods for allocating service department costs to the production departments. The method that recognizes service provided by one service department to another but does not recognize reciprocal interdepartmental service is the

A. Step-down method.
B. Direct method.
C. Variable method.
D. Reciprocal method.

A. Under the step method, the services that one department provides to the other departments are recognized. However, in the allocation of the costs of the second service department, no costs are allocated back to the first department. In the allocation of the costs of the third service department, no costs are allocated back to the first or second service department, and so on.
B. Under the direct method no costs are allocated between the service departments.
C. This answer is incorrect because it is not a method of allocating service department costs.
D. Under the reciprocal method the costs of the service departments are allocated to each other, so there is a recognition of reciprocal interdepartmental service.
Question 54 - CIA 1187 IV-51 - Variable and Absorption Costing

Assuming absorption costing, which of the following columns includes only product costs?

<table>
<thead>
<tr>
<th></th>
<th>I.</th>
<th>II.</th>
<th>III.</th>
<th>IV.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct labor</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Direct materials</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Sales materials</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advertising costs</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indirect factory materials</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Indirect labor</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Sales commissions</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Factory utilities</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Administrative supplies expense</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administrative labor</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depreciation on administration building</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Cost of research on customer demographics</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

A. II.
B. III.
C. IV.
D. I.

A. Direct labor and factory utilities are product costs, but sales and administrative supplies are not.

B. Direct materials and indirect factory materials are product costs, but advertising, administration and demographic research are not.

C. Under absorption costing, direct labor, direct materials and factory overheads - fixed and variable - are treated as product costs.

D. Indirect labor is a product cost and sales commissions and depreciation on the administrative building are not.

Question 55 - CMA 691 3-19 - Service Cost Allocation

The managers of Rochester Manufacturing are discussing ways to allocate the cost of service departments such as Quality Control and Maintenance to the production departments. To aid them in this discussion, the controller has provided the following information:

<table>
<thead>
<tr>
<th></th>
<th>Quality Control</th>
<th>Maintenance</th>
<th>Machining</th>
<th>Assembly</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budgeted overhead costs before allocation</td>
<td>$350,000</td>
<td>$200,000</td>
<td>$400,000</td>
<td>$300,000</td>
<td>$1,250,000</td>
</tr>
<tr>
<td>Budgeted machine hours</td>
<td>50,000</td>
<td></td>
<td>50,000</td>
<td></td>
<td>25,000</td>
</tr>
<tr>
<td>Budgeted direct labor hours</td>
<td></td>
<td></td>
<td>25,000</td>
<td>25,000</td>
<td></td>
</tr>
<tr>
<td>Budgeted hours of service: Quality control</td>
<td>7,000</td>
<td>21,000</td>
<td>7,000</td>
<td>35,000</td>
<td></td>
</tr>
<tr>
<td>Maintenance</td>
<td>10,000</td>
<td>18,000</td>
<td>12,000</td>
<td>40,000</td>
<td></td>
</tr>
</tbody>
</table>

If Rochester Manufacturing uses the step-down method of allocating service costs beginning with quality control, the maintenance costs allocated to the assembly department would be

A. $70,000.
B. $108,000.

(c) HOCK international, page 31
C. $162,000.
D. $200,000.

A. This answer is incorrect.

B. In the step down method we need to first allocate costs from QC, and in this process we will allocate some of its costs to the maintenance department. In total, QC provided 35,000 hours of service and maintenance used 7,000 of them. So, maintenance will get 20% of the QC costs, or $70,000. Adding this to the $200,000 of its own costs, the maintenance department has $270,000 to allocate. These will be allocated only to the production departments. The assembly department used 40% of the maintenance hours that were used by production departments, so $108,000 will be allocated to the assembly department ($270,000 * .4).

C. This answer is incorrect.

D. This answer is incorrect.

Question 56 - CMA 1293 3-3 H1 - Joint and By-Products

Atlas Foods produces the following three supplemental food products simultaneously through a refining process costing $93,000.

- Alfa: 10,000 pounds of Alfa, a popular but relatively rare grain supplement having a caloric value of 4,400 calories per pound.
- Betters: 5,000 pounds of Betters, a flavoring material high in carbohydrates with a caloric value of 11,200 calories per pound.
- Morefeed: 1,000 pounds of Morefeed, used as a cattle feed supplement with a caloric value of 1,000 calories per pound.

The joint products, Alfa and Betters, have a final selling price of $4 per pound and $10 per pound, respectively, after additional processing costs of $2 per pound of each product are incurred after the split-off point. Morefeed, a by-product, is sold at the split-off point for $3 per pound.

Assuming Atlas Foods inventories Morefeed, the by-product, and that it incurs no additional processing costs for Alfa and Betters, the joint cost to be allocated to Alfa using the gross market value method is

A. $36,000
B. $41,333
C. $40,000
D. $50,000

A. This answer is incorrect.

B. This is the amount that would be allocated to Alfa if the joint costs were not reduced by the sales value of the by-product.

C. The gross market value of Alfa is $40,000 and the gross market value of Betters is $50,000. In total, this is $90,000. If the sales value of the by-product is inventoried, the total joint costs to allocate are $90,000. Of this, $40,000 would be allocated to Alfa.

D. This is the amount that would be allocated to Betters.

Question 57 - CIA 596 III-82 - Service Cost Allocation

(c) HOCK international, page 32
Fabricating and Finishing are the two production departments of a manufacturing company. Building Operations and Information Services are service departments that provide support to the two production departments as well as to each other. The company employs departmental overhead rates in the two production departments to allocate the service department costs to the production departments. Square footage is used to allocate building operations, and computer time is used to allocate information services.

The costs of the service departments and relevant operating data for the departments are as follows:

<table>
<thead>
<tr>
<th></th>
<th>Building Operations</th>
<th>Information Services</th>
<th>Fabricating</th>
<th>Finishing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor and benefit costs</td>
<td>$200,000</td>
<td>$300,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other traceable costs</td>
<td>350,000</td>
<td>900,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$550,000</td>
<td>$1,200,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Operating Data:        |                     |                      |             |           |
| Square feet occupied   | 5,000               | 10,000               | 16,000      | 24,000    |
| Computer time (in hours) | 200                | 1,200                | 600         |           |

If the company employs the direct method to allocate the costs of the service departments, then the amount of building operations costs allocated to Fabricating would be

A. $176,000
B. $160,000
C. $140,000
D. $220,000

A. This answer includes the other service department in the calculation of the total square feet. This would be done under the step method.

B. This answer includes all of the departments (including building operations) in the calculation of total square feet.

C. This answer ignores the labor and benefit costs, which also need to be allocated.

D. Under the direct method we ignore services that are provided to the other service departments. In order to allocate the building operation costs to fabricating, we simply need to determine what percentage of the building space taken up by production departments is used by fabricating (we ignore the building usage by the other service departments under direct costing). There is a total of 40,000 square feet and fabricating occupies 40% of that so they will get 40% of the building costs, or $220,000.

---

Kimbeth Manufacturing uses a process cost system to manufacture Dust Density Sensors for the mining industry. The following information pertains to operations for the month of May.

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning work-in-process inventory, May 1</td>
</tr>
<tr>
<td>Started in production during May</td>
</tr>
<tr>
<td>Completed production during May</td>
</tr>
<tr>
<td>Ending work-in-process inventory, May 31</td>
</tr>
</tbody>
</table>

The beginning inventory was 60% complete for materials and 20% complete for conversion costs. The ending inventory was 90% complete for materials and 40% complete for conversion costs.

Costs pertaining to the month of May are as follows:
Beginning inventory costs are materials, $54,560; direct labor, $20,320; and factory overhead, $15,240.

Costs incurred during May are materials used, $468,000; direct labor, $182,880; and factory overhead, $391,160.

Using the first-in, first-out (FIFO) method, the equivalent units of production (EUP) for materials are

A. 104,000 units.
B. 107,200 units.
C. 97,600 units.
D. 108,000 units.

A. Under the FIFO method of process costing we need to make three calculations to determine the EUP. These are: calculate how many EUP were required to finish BWIP, how many units were started and completed and how many EUP were needed to start the EWIP. There were 16,000 units in BWIP and they were 60% complete for materials, meaning that they needed to do 40%, or 6,400 EUP to finish BWIP. There were a total of 76,000 units started and completed during the period (92,000 completed minus the 16,000 in BWIP). There were 24,000 units in EWIP that were 90% complete for materials, meaning that 21,600 EUP of materials had been done on the EWIP. Adding these three numbers together, we get 104,000 units.

B. This answer is incorrect.
C. This answer does not include the units that are in BWIP and the work that is needed to be done to finish them.
D. This answer is incorrect.

Question 59 - CMA 1290 H2 - Variable and Absorption Costing

Valyn Corporation employs an absorption costing system for internal reporting purposes; however, the company is considering using variable costing. Data regarding Valyn's planned and actual operations for the calendar year are presented below.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Planned Activity</th>
<th>Actual Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning finished goods inventory</td>
<td>35,000</td>
<td>35,000</td>
</tr>
<tr>
<td>Sales</td>
<td>140,000</td>
<td>125,000</td>
</tr>
<tr>
<td>Production</td>
<td>140,000</td>
<td>130,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Costs</th>
<th>Planned Costs</th>
<th>Costs</th>
<th>Incurred Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct materials</td>
<td>$12.00</td>
<td>$1,680,000</td>
<td>$1,560,000</td>
</tr>
<tr>
<td>Direct labor</td>
<td>9.00</td>
<td>1,260,000</td>
<td>1,170,000</td>
</tr>
<tr>
<td>Variable manufacturing overhead</td>
<td>4.00</td>
<td>560,000</td>
<td>520,000</td>
</tr>
<tr>
<td>Fixed manufacturing overhead</td>
<td>5.00</td>
<td>700,000</td>
<td>715,000</td>
</tr>
<tr>
<td>Variable selling expenses</td>
<td>8.00</td>
<td>1,120,000</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Fixed selling expenses</td>
<td>7.00</td>
<td>980,000</td>
<td>980,000</td>
</tr>
<tr>
<td>Variable administrative expenses</td>
<td>2.00</td>
<td>280,000</td>
<td>250,000</td>
</tr>
<tr>
<td>Fixed administrative expenses</td>
<td>3.00</td>
<td>420,000</td>
<td>425,000</td>
</tr>
<tr>
<td>Total</td>
<td>$50.00</td>
<td>$7,000,000</td>
<td>$6,620,000</td>
</tr>
</tbody>
</table>

The planned per unit cost figures shown in the above schedule were based on Valyn producing and selling 140,000 units. Valyn uses a predetermined manufacturing overhead rate for applying manufacturing overhead to its product; thus, a combined manufacturing overhead rate of $9.00 per unit was employed for absorption costing purposes. Any over- or underapplied manufacturing overhead is closed to the Cost of Goods Sold account at the end of the reporting period.

(c) HOCK international, page 34
The beginning finished goods inventory for absorption costing purposes was valued at the previous year's planned unit manufacturing cost, which was the same as the current year's planned unit manufacturing cost. There are no work-in-process inventories at either the beginning or the end of the year. The planned and actual unit selling price for the current year was $70.00 per unit.

The value of Valyn Corporation's actual ending finished goods inventory on the variable costing basis was

A. $1,000,000  
B. $750,000  
C. $1,125,000  
D. $1,400,000

A. Under variable costing, the per unit cost of inventory includes all variable production costs. As such, the per unit cost for Valyn is $25 (this is made up of direct materials, direct labor and variable overhead). At the end of the period there were 40,000 units in ending inventory - there were 35,000 at the start of the period and they produced 5,000 more units than were sold during the period. This gives an ending finished goods inventory of $1,000,000.

B. This answer is incorrect.  
C. This answer is incorrect.  
D. This answer is incorrect.

**Question 60 - CMA 697 3-2 - Cost Terminology and Classifications**

Which one of the following is correct regarding a relevant range?

A. Total variable costs will not change. 
B. Actual fixed costs usually fall outside the relevant range. 
C. Total fixed costs will not change. 
D. The relevant range cannot be changed after being established.

A. In the relevant range, total variable costs will increase as output increases and decrease as output decreases. 
B. Actual fixed costs should not differ much from budgeted, so actual fixed costs should always fall within the relevant range. 
C. **Within the relevant range total fixed costs do not change.** 
D. The relevant range may be changed as circumstances change.

**Question 61 - CMA 1296 3-3 - Cost Terminology and Classifications**

Conversion cost pricing

A. Places minimal emphasis on the cost of materials used in manufacturing a product. 
B. Could be used when the customer furnishes the material used in manufacturing a product. 
C. Places heavy emphasis on indirect costs and disregards consideration of direct costs. 
D. Places heavy emphasis on direct costs and disregards consideration of indirect costs.
A. Conversion cost pricing does not use materials at all in the pricing because materials are not a conversion cost.


B. Conversion costs are the costs of converting the materials to the finished product. As such, in a situation in which the customer provides the materials, conversion cost pricing could be appropriate.

C. Direct labor is a conversion cost and is also a conversion cost, so this statement is not true.

D. Overheads are indirect costs and also conversion costs so this statement is not true.

---

**Question 62 - CMA 1285 4-27 - General Overhead Allocation**

Farber Company employs a normal (nonstandard) absorption cost system. The following information is from the financial records of the company for the year.

- Total manufacturing costs were $2,500,000.
- Cost of goods manufactured was $2,425,000.
- Applied factory overhead was 30% of total manufacturing costs.
- Factory overhead was applied to production at a rate of 80% of direct labor cost.
- Work-in-process inventory at January 1 was 75% of work-in-process inventory at December 31.

The carrying value of Farber Company's work-in-process inventory at December 31 is

A. $300,000.
B. $75,000.
C. $100,000.
D. $225,000.

A. To answer this question we will need to work backwards since we are not told any information about the value of ending or beginning inventory and all we are told is that the beginning inventory was 75% of ending inventory. We are told the total manufacturing cost and the cost of goods manufactured amounts and the difference between these two items is the change in the work in progress. So, we can set up a formula as follows: $2,500,000 + .75 EWIP - EWIP = $2,425,000. This reduces to $2,500,000 - .25 EWIP = $2,425,000. Solving foe EWIP we get EWIP = $300,000.

B. This is the change in work-in-progress during the period.

C. This answer is incorrect.

D. This is the beginning work-in-progress amount.

---

**Question 63 - CIA 1190 IV-12 - Variable and Absorption Costing**

During its first year of operations, a company produced 275,000 units and sold 250,000 units. The following costs were incurred during the year:

**Variable costs per unit:**

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct materials</td>
<td>$15.00</td>
</tr>
<tr>
<td>Direct labor</td>
<td>$10.00</td>
</tr>
<tr>
<td>Manufacturing overhead</td>
<td>$12.50</td>
</tr>
<tr>
<td>Selling and administrative</td>
<td>$2.50</td>
</tr>
</tbody>
</table>

(c) HOCK international, page 36
Total fixed costs:
Manufacturing overhead   $2,200,000
Selling and administrative  1,375,000

What is the difference between operating income calculated on the absorption-costing basis and on the variable-costing basis?

A. Absorption-costing operating income is greater than variable-costing operating income by $220,000.
B. Absorption-costing operating income is greater than variable-costing operating income by $325,000.
C. Absorption-costing operating income is greater than variable-costing operating income by $200,000.
D. Variable-costing operating income is greater than absorption-costing operating income by $62,500.

A. Though the absorption costing income will be higher, it is not higher by this amount. This answer allocates the fixed costs based on the number of units sold.

B. Though the absorption costing income will be higher, it is not higher by this amount. This answer includes the fixed selling and administrative costs as a product cost.

C. We know that the number of units in inventory increased during the period, so we know that absorption costing income will be greater than variable costing income. The question we have left is how much. The only difference between the two methods is in the treatment of fixed factory overheads. Under absorption costing the fixed factory overheads are allocated to the units produced and under variable costing they are expensed. Because this is the first year of operations we can simply multiply the fixed factory overhead per unit by the increase in inventory to determine the difference between the two methods. There was $2,200,000 of fixed factory overhead that was applied to the 275,000 units produced. This is $8 per unit. Inventory increased by 25,000, so the difference between the two methods would be $200,000 (25,000 units * $8 per unit). Because these $200,000 in fixed costs are on the balance sheet under absorption costing, income will be higher under absorption costing.

D. Absorption costing will give a higher income and the difference will be a different amount than in this answer.

---

**Question 64 - CMA 689 4-11 - Cost Terminology and Classifications**

Hitchcock Industries has developed two new products but has only enough plant capacity to introduce one of these products this year. The company controller has gathered the following data to assist management in deciding which product should be selected for production.

Hitchcock’s fixed overhead includes proportional rent and utilities, machinery depreciation, and supervisory salaries. Selling and administrative expenses are not allocated to products.

**Cost per unit:**

<table>
<thead>
<tr>
<th>Raw materials</th>
<th>Power Drill</th>
<th>$22.00</th>
<th>Power Saw</th>
<th>$18.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machining at $12/hr.</td>
<td>9.00</td>
<td></td>
<td>7.50</td>
<td></td>
</tr>
<tr>
<td>Assembly at $10/hr.</td>
<td>15.00</td>
<td></td>
<td>5.00</td>
<td></td>
</tr>
<tr>
<td>Variable O/H at $8/hr.</td>
<td>18.00</td>
<td></td>
<td>9.00</td>
<td></td>
</tr>
<tr>
<td>Fixed O/H at $4/hr.</td>
<td>9.00</td>
<td></td>
<td>4.50</td>
<td></td>
</tr>
</tbody>
</table>

**Total unit cost:**

<table>
<thead>
<tr>
<th>Power Drill</th>
<th>Power Saw</th>
</tr>
</thead>
<tbody>
<tr>
<td>$73.00</td>
<td>$44.00</td>
</tr>
</tbody>
</table>

**Suggested selling price**

- Power Drill: $88.98
- Power Saw: $49.95

**Actual research and development costs**

- Power Drill: $180,000
- Power Saw: $95,000

**Proposed advertising and promotion costs**

- Power Drill: $300,000
- Power Saw: $250,000

Research and development costs for Hitchcock’s two new products are

A. Conversion costs.
Question 65 - CMA 694 3-26 - Activity Based Costing

Zeta Company is preparing its annual profit plan. As part of its analysis of the profitability of individual products, the controller estimates the amount of overhead that should be allocated to the individual product lines from the information given as follows:

<table>
<thead>
<tr>
<th></th>
<th>Wall Mirrors</th>
<th>Specialty Windows</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units produced</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Material moves per product line</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>Direct labor hours per unit</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Budgeted materials handling costs</td>
<td>$50,000</td>
<td></td>
</tr>
</tbody>
</table>

Under activity-based costing (ABC), the materials handling costs allocated to one unit of wall mirrors would be

A. $500
B. $1,500
C. $1,000
D. $2,500

A. Under and ABC system, the materials handling costs would be allocated based on the number of materials moves for each product. In total, Zeta has 20 materials moves (5 moves for the wall mirrors + 15 moves for specialty mirrors). This gives a per move cost of $2,500. Since there are 5 material moves for the wall mirrors, this is $12,500 that needs to be allocated to the 25 units. This is a per unit cost for materials handling of $500.

B. This is the amount that would be allocated to each specialty mirror.

C. This is the amount that would be allocated if the allocation basis was direct labor hours.

D. This answer is incorrect.

Question 66 - CMA 690 4-8 - Joint and By-Products

Sonimad Sawmill manufactures two lumber products from a joint milling process. The two products developed are mine support braces (MSB) and unseasoned commercial building lumber (CBL). A standard production run incurs joint costs of $300,000 and results in 60,000 units of MSB and 90,000 units of CBL. Each MSB sells for $2 per unit, and each CBL sells for $4 per unit. Assume the commercial building lumber is not marketable at split-off but must be
further planed and sized at a cost of $200,000 per production run. During this process, 10,000 units are unavoidably lost; these spoiled units have no discernible value. The remaining units of commercial building lumber are salable at $10.00 per unit. The mine support braces, although salable immediately at the split-off point, are coated with a tar-like preservative that costs $100,000 per production run. The braces are then sold for $5 each.

Using the net realizable value (NRV) basis, the completed cost assigned to each unit of commercial building lumber would be

A. $5.625.
B. $2.50.
C. $2.92.
D. $5.3125.

A. This answer is incorrect.
B. This answer is incorrect because it does not include any joint costs allocated to CBL.
C. This answer is incorrect.
D. The NRV is calculated as sales price minus costs required to complete and dispose of the item. In order to allocate joint costs using NRV we first need to calculate the NRV for each of the two products. There are 60,000 units of MSB that will be sold for $5 each after further processing, or $300,000. There are also $100,000 of additional costs that will be incurred, so the NRV of MSB is $200,000. There are only 80,000 good units of CBL produced because 10,000 units are damaged in further processing. These units will be sold for $10 each, or a total of $800,000. However, there are also additional costs of $200,000, making the NRV of CBL only $600,000. In total there is a NRV of $800,000, of which CBL makes up 75%. Therefore, CBL should receive 75% of the joint costs, or $225,000. The question is the total cost that would be assigned to a CBL unit. In addition to the joint costs, we also need to include the additional processing costs of $200,000. In total, then, there are $425,000 of costs that need to be allocated to the 80,000 units of CBL. This is $5.3125 per unit.

---

**Question 67 - CPA 1192 T-45 - Activity Based Costing**

Nile Co. is a manufacturer whose cost assignment and product costing procedures follow activity-based costing principles. Activities have been identified and classified as being either value-adding or nonvalue-adding as to each product. Which of the following activities, used in Nile's production process, is nonvalue-adding?

A. Design engineering activity.
B. Drill press activity.
C. Raw materials storage activity.
D. Heat treatment activity.

A. Design engineering is value-added activity.
B. Drill press is value-added activity.
C. Material storage activity is nonvalue-adding activity because it does not provide any contribution to the customer.
D. Heat treatment is value-added activity.

---

**Question 68 - CMA 1293 3-1 - Activity Based Costing**

(c) HOCK international, page 39
Cost drivers are
A. Activities that cause costs to increase as the activity increases.
B. Accounting techniques used to control costs.
C. A mechanical basis, such as machine hours, computer time, size of equipment, or square footage of factory, used to assign costs to activities.
D. Accounting measurements used to evaluate whether or not performance is proceeding according to plan.

**A. By definition a cost driver is an activity that causes costs to be incurred each time the activity occurs.**

B. Cost drivers are activities that cause costs to be incurred each time the activity occurs.
C. Cost drivers may be used to assign costs, but they do not need to be mechanical. Salaries or other costs may be cost drivers as well.
D. Cost drivers are activities that cause costs to be incurred each time the activity occurs.

---

**Question 69 - CMA 1285 4-26 - General Overhead Allocation**

Farber Company employs a normal (nonstandard) absorption cost system. The following information is from the financial records of the company for the year.

- Total manufacturing costs were $2,500,000.
- Cost of goods manufactured was $2,425,000.
- Applied factory overhead was 30% of total manufacturing costs.
- Factory overhead was applied to production at a rate of 80% of direct labor cost.
- Work-in-process inventory at January 1 was 75% of work-in-process inventory at December 31.

Total cost of direct material used by Farber Company for the year is

A. $937,500
B. $750,000
C. $1,150,000
D. $812,500

A. This is the amount of direct labor.
B. This is the amount of factory overhead.
C. This answer is incorrect.
D. Total manufacturing costs is equal to direct materials plus direct labor plus overhead. We know that overhead is 30% of this amount, or $750,000. We know that overhead is 80% of direct labor and is therefore $937,500 ($750,000 : 80%). These add up to $1,687,500, leaving $812,500 that was the direct material used for the year.

---

**Question 70 - CMA 689 4-23 - Joint and By-Products**

Killian Company manufactures two skin care lotions, Liquid Skin and Silken Skin, out of a joint process. The joint (common) costs incurred are $420,000 for a standard production run that generates 180,000 gallons of Liquid Skin and 120,000 gallons of Silken Skin. Liquid Skin sells for $2.40 per gallon, and Silken Skin sells for $3.90 per gallon.
If additional processing costs beyond the split-off point are $1.40 per gallon for Liquid Skin and $.90 per gallon for Silken Skin, the amount of joint cost of each production run allocated to Silken Skin on a net realizable value basis is

A. $140,000.
B. $168,000.
C. $280,000.
D. $252,000.

A. This is the amount that would be allocated to LS using the NRV as the allocation basis.

B. This is the amount that would be allocated to SS using physical quantity as the allocation basis.

C. The NRV is calculated as sales price minus costs required to complete and dispose of the item. In order to allocate joint costs using NRV we first need to calculate the NRV for each of the two products. We can do this on a per unit basis as follows: The selling price of LS is $2.40 per gallon, but there are additional processing costs of $1.40 per gallon. This leaves a NRV of $1 per gallon of LS. Since there are 180,000 of LS, the NRV for LS is $180,000. Doing the same for SS we get a NRV of $3 per gallon ($3.90 selling price - $.90 additional costs) and with 120,000 gallons this is a total NRV of $360,000. In total there is $540,000 of NRV, and SS makes up 2/3 of the total NRV. Therefore, SS should receive 2/3 of the $420,000 joint costs, or $280,000.

D. This is the amount that would be allocated to LS using physical quantity as the allocation basis.

---

Question 71 - CMA 697 3-3 - Variable and Absorption Costing

Which method of inventory costing treats direct manufacturing costs and manufacturing overhead costs, both variable and fixed, as inventoriable costs?

A. Direct costing.
B. Absorption costing.
C. Conversion costing.
D. Variable costing.

A. Fixed factory overhead is not inventoried under direct costing, which is the same method as variable costing.

B. Under absorption costing, all manufacturing costs are treated as inventoriable, or product, costs.

C. Under conversion costing, direct materials are not inventoried because they are not a conversion cost.

D. Fixed factory overhead is not inventoried under variable costing, which is the same method as direct costing.

---

Question 72 - CIA 1194 III-49 - Service Cost Allocation

A company has two service departments (S1 and S2) and two production departments (P1 and P2). Departmental data for January were as follows:

<table>
<thead>
<tr>
<th></th>
<th>S1</th>
<th>S2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Costs incurred:</td>
<td>$27,000</td>
<td>$18,000</td>
</tr>
<tr>
<td>Service provided to:</td>
<td>---</td>
<td>20%</td>
</tr>
</tbody>
</table>

(c) HOCK international, page 41
What are the total allocated service department costs to P2 if the company uses the reciprocal method of allocating its service department costs? (Round calculations to the nearest whole number.)

A. $19,800  
B. $21,949  
C. $23,051  
D. $22,500  

A. In this answer the costs are allocated to the production departments prior to the cross allocation of service costs.  
B. This is the amount of service costs allocated to P1.  
C. In order to use the reciprocal method we need to set up two equations, one for each of the two service departments. We will call the service departments Y (S1) and Z (S2) in our formulas. The overhead costs of S1 are as follows: Y = $27,000 + .2Z. The costs of S2 are Z = $18,000 + .1Y. Substituting the second equation into the Z in the first equation, we get Y = $27,000 + .2(18,000 + .1Y). This simplifies to Y = $30,600 + .02Y, or .98Y = $30,600. Solving now for Y we get Y = $31,224. We can now substitute Y into the second equation to solve for Z and we get Z= $18,000 + .1 ($31,224), or Z = $21,122. We now are able to allocate to the production departments. P2 will get 40% of the costs of S1 and 50% of the costs of S2. This is equal to (.4 * $31,224) + (.5 * $21,122) = $23,051.  
D. This answer is incorrect.
Presented are Valenz Company’s records for the current fiscal year ended November 30:

- Direct materials used $300,000
- Direct labor 100,000
- Variable factory overhead 50,000
- Fixed factory overhead 80,000
- Selling and admin. costs-variable 40,000
- Selling and admin. costs-fixed 20,000

If Valenz Company uses variable costing, the inventoriable costs for the fiscal year are:

- Selling and admin. costs-variable

A. $530,000
B. $450,000
C. $400,000
D. $490,000

A. This answer includes fixed factory overhead. Though it is a production cost, the variable costing method includes only variable costs of production in inventory.

B. Under the variable costing method, only the variable costs of production are inventoried. Therefore, the costs that can be inventoried are: direct materials ($300,000), direct labor ($100,000) and variable factory overhead ($50,000). This is a total of $450,000.

C. This answer does not include the variable factory overhead as an inventoried cost.

D. This answer includes the variable selling costs as an inventoried cost. Though it is a variable cost, only variable production costs are inventoried under the variable costing method.

---

**Question 75** - CIA 1187 IV-9 - Variable and Absorption Costing

Which of the following is an argument against the use of direct (variable) costing?

A. Fixed factory overhead is difficult to allocate properly.
B. Variable factory overhead is a period cost.
C. Absorption costing overstates the balance sheet value of inventories.
D. Fixed factory overhead is necessary for the production of a product.

A. Fixed factory overhead is expensed under direct (or variable) costing and is not allocated.

B. Variable factory overhead is a product, not period, cost under direct (or variable) costing.

C. The fact that absorption costing overstates inventory is an argument in favor of direct (or variable) costing.

D. Because **fixed manufacturing costs** are a necessary part of production, one can argue that they should be included in the cost of a unit produced.

---

**Question 76** - CMA 1295 3-29 H1 - Joint and By-Products

Petro-Chem Inc. is a small company that acquires high-grade crude oil from low-volume production wells owned by individuals and small partnerships. The crude oil is processed in a single refinery into Two Oil, Six Oil, and impure
distillates. Petro-Chem does not have the technology or capacity to process these products further and sells most of its output each month to major refineries. There were no beginning inventories of finished goods or work-in-process on November 1. The production costs and output of Petro-Chem for November are as follows:

Crude oil acquired and placed in production: $5,000,000
Direct labor and related costs: $2,000,000
Factory overhead: $3,000,000

Production and sales:
- Two Oil, 300,000 barrels produced; 80,000 barrels sold at $20 each.
- Six Oil, 240,000 barrels produced; 120,000 barrels sold at $30 each.
- Distillates, 120,000 barrels produced and sold at $15 per barrel.

The portion of the joint production costs assigned to Two Oil based upon the relative sales value of output would be

A. $4,800,000
B. $4,000,000
C. $2,500,000
D. $2,286,000

A. This is the amount that would be allocated to Six Oil.

B. In order to allocate joint costs based on the relative sales value of the output, we need calculate the sales value of the output for each product. For Two Oil it is $6,000,000 (300,000 barrels produced * $20 each). For Six Oil it is $7,200,000 (240,000 barrels produced * $30 each). For Distillates it is $1,800,000 (120,000 barrels produced * $15 each). In total, this is $15,000,000, of which Two Oil is 40%. Therefore, Two Oil will be allocated 40% of the $10,000,000 in joint costs, or $4,000,000.

C. This is the amount that would be allocated based on the number of barrels sold.

D. This is the amount that would be allocated based on the sales value of the units sold.

---

**Question 77** - CMA 1290 3-2 - Service Cost Allocation

Allocation of service department costs to the production departments is necessary to

A. Determine overhead rates.
B. Coordinate production activity.
C. Control costs.
D. Maximize efficiency.

A. The costs of the service departments are costs of the company and they must be allocated to the individual units that are produced. These are overhead costs that will be charged to the production departments and then the individual units.

B. The allocation of the service department costs does not assist in the coordination of production activities.

C. The allocation of the service department costs does not directly assist in the controlling of costs.

D. The allocation of the service department costs does not maximize efficiency.
Question 78 - CIA 1194 III-42 - Variable and Absorption Costing

Using absorption costing, fixed manufacturing overhead costs are best described as

A. Direct product costs.
B. Indirect product costs.
C. Indirect period costs.
D. Direct period costs.

A. Fixed manufacturing overhead is not a direct cost because it cannot be traced to a specific unit.

B. Under absorption costing fixed manufacturing overhead is allocated to the units produced and it is best classified as an indirect product cost. It is indirect because it is not directly traceable to a specific unit and a product cost because it allocated to the product.

C. Fixed manufacturing overhead is not a period cost under absorption costing because it is allocated to the units produced and not expensed.

D. Fixed manufacturing overhead is not a direct cost because it cannot be traced to a specific unit. It is also not a period cost under absorption costing because it is allocated to the units produced and not expensed.

Question 79 - CMA 1290 H3 - Variable and Absorption Costing

Valyn Corporation employs an absorption costing system for internal reporting purposes; however, the company is considering using variable costing. Data regarding Valyn's planned and actual operations for the calendar year are presented below.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Planned Activity</th>
<th>Actual Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning finished goods inventory</td>
<td>35,000</td>
<td>35,000</td>
</tr>
<tr>
<td>Sales</td>
<td>140,000</td>
<td>125,000</td>
</tr>
<tr>
<td>Production</td>
<td>140,000</td>
<td>130,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Per Unit</th>
<th>Costs</th>
<th>Incurred Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct materials</td>
<td>$12.00</td>
<td>$1,680,000</td>
</tr>
<tr>
<td>Direct labor</td>
<td>9.00</td>
<td>1,260,000</td>
</tr>
<tr>
<td>Variable manufacturing overhead</td>
<td>4.00</td>
<td>560,000</td>
</tr>
<tr>
<td>Fixed manufacturing overhead</td>
<td>5.00</td>
<td>700,000</td>
</tr>
<tr>
<td>Variable selling expenses</td>
<td>8.00</td>
<td>1,120,000</td>
</tr>
<tr>
<td>Fixed selling expenses</td>
<td>7.00</td>
<td>980,000</td>
</tr>
<tr>
<td>Variable administrative expenses</td>
<td>2.00</td>
<td>280,000</td>
</tr>
<tr>
<td>Fixed administrative expenses</td>
<td>3.00</td>
<td>420,000</td>
</tr>
<tr>
<td>Total</td>
<td>$50.00</td>
<td>$7,000,000</td>
</tr>
</tbody>
</table>

The planned per unit cost figures shown in the above schedule were based on Valyn producing and selling 140,000 units. Valyn uses a predetermined manufacturing overhead rate for applying manufacturing overhead to its product; thus, a combined manufacturing overhead rate of $9.00 per unit was employed for absorption costing purposes. Any over- or underapplied manufacturing overhead is closed to the Cost of Goods Sold account at the end of the reporting year.

The beginning finished goods inventory for absorption costing purposes was valued at the previous year's planned unit manufacturing cost, which was the same as the current year's planned unit manufacturing cost. There are no work-in-process inventories at either the beginning or the end of the year. The planned and actual unit selling price for

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the current year was $70.00 per unit.

Valyn Corporation's absorption costing operating income was

A. Lower than variable costing operating income because actual production was less than planned production.
B. Lower than variable costing operating income because actual sales were less than planned sales.
C. Lower than variable costing operating income because actual production exceeded actual sales.
D. Higher than variable costing operating income because actual production exceeded actual sales.

A. Whether or not production is more or less than planned does not impact the comparison of income between the two methods.
B. Whether or not sales were higher or lower than planned does not impact the comparison of income between the two methods.
C. When the level of inventory increases during the period, the absorption method gives a higher income than the variable method.
D. When the level of inventory increases during the period, the income of the company will be higher under absorption costing than under variable costing. This is because under absorption costing some of that period's fixed overheads are included on the balance sheet in ending inventory rather than on the income statement.

Question 80 - CMA 1286 4-15 - Process Costing

Levittown Company employs a process cost system for its manufacturing operations. All direct materials are added at the beginning of the process and conversion costs are added proportionately. Levittown's production quantity schedule for November is reproduced as follows.

<table>
<thead>
<tr>
<th>Units</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-in-process on November 1 (60% complete as to conversion costs)</td>
<td>1,000</td>
</tr>
<tr>
<td>Units started during November</td>
<td>5,000</td>
</tr>
<tr>
<td>Total units to account for</td>
<td>6,000</td>
</tr>
<tr>
<td>Units completed and transferred out from BI</td>
<td>1,000</td>
</tr>
<tr>
<td>Units started and completed during November</td>
<td>3,000</td>
</tr>
<tr>
<td>Work-in-process on November 30 (20% complete as to conversion costs)</td>
<td>2,000</td>
</tr>
<tr>
<td>Total units accounted for</td>
<td>6,000</td>
</tr>
</tbody>
</table>

Using the FIFO method, the equivalent units for conversion costs for November are

A. 3,400 units.
B. 4,000 units.
C. 4,400 units.
D. 3,800 units.

A. This answer is incorrect.
B. This answer does not treat beginning WIP properly and ignores ending WIP
C. This answer does not treat beginning WIP correctly.
D. There are three calculations that we need to make under FIFO in order to calculate the EUP for conversion costs: calculate the EUP to finish BWIP, the number of units that were started and completed and the number of EUP to start EWIP. In order to finish BWIP, 400 EUP were required (there were 1,000 units that were already 60% complete). There were 3,000 units started and completed (this is given in the question). There were 400 EUP to start EWIP. This gives us 3,800 EUP of conversion costs under FIFO.

Question 81 - CMA 1292 3-26 - Variable and Absorption Costing

Jansen, Inc. pays bonuses to its managers based on operating income. The company uses absorption costing, and overhead is applied on the basis of direct labor hours. To increase bonuses, Jansen's managers may do all of the following except

A. Defer expenses such as maintenance to a future period.
B. Increase production schedules independent of customer demands.
C. Produce those products requiring the most direct labor.
D. Decrease production of those items requiring the most direct labor.

A. By deferring expenses, the income in the current period will be higher, giving a bigger bonus.

B. By increasing production schedules independent of customer demand, more units will be in inventory at the end of the year, meaning that more fixed costs will be on the balance sheet and not on the income statement. This will increase income.

C. By producing more products that use a lot of direct labor, there will be more overhead included in inventory at the end of the year. Since these costs are on the balance sheet instead of the income statement, income will be higher as a result of doing this.

D. By producing fewer units that require a lot of direct labor, less of the overhead will be allocated to units that are in inventory at the end of the period because there will be fewer units in inventory. This will mean that less of the overhead is on the balance sheet and more is on the income statement, reducing net income.

Question 82 - CIA 1196 III-85 - Process Costing

A company employs a process costing system for its two-department manufacturing operation using the first-in, first-out (FIFO) inventory method. When units are completed in Department 1, they are transferred to Department 2 for completion. Inspection takes place in Department 2 immediately before the direct materials are added, when the process is 70% complete with respect to conversion. The specific identification method is used to account for lost units. The number of defective units (that is, those failing inspection) is usually below the normal tolerance limit of 4% of units inspected. Defective units have minimal value, and the company sells them without any further processing for whatever it can. Generally, the amount collected equals, or slightly exceeds, the transportation cost. A summary of the manufacturing activity for Department 2, in units for the current month, is presented below.

<table>
<thead>
<tr>
<th>Physical Flow (output units)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning inventory (60% complete with respect to conversion)</td>
</tr>
<tr>
<td>Units transferred in from Department 1</td>
</tr>
<tr>
<td>Total units to account for</td>
</tr>
<tr>
<td>Units completed in Department 2 during the month</td>
</tr>
<tr>
<td>Units found to be defective at inspection</td>
</tr>
<tr>
<td>Ending inventory (80% complete with respect to conversion)</td>
</tr>
</tbody>
</table>
Total units accounted for  200,000

The equivalent units for direct materials for the current month would be

A. 175,000 units.
B. 200,000 units
C. 181,500 units.
D. 195,000 units.

A. This answer does not include any materials being added to the BWIP.
B. This answer assumes that materials are added to the defective units.
C. This answer is incorrect. This question is made a little bit different because materials are added when the units are 70% complete.
D. This question is made a little bit different because materials are added when the units are 70% complete. However, we can still use the three calculations to determine the equivalent units (EUP) under FIFO. We need to determine how many EUP of materials were needed to finish BWIP, how many EUP were need to start ending WIP and how many units were started and completed. There were 20,000 units in BWIP and since they were only 60% complete for conversion costs, they did not have any materials in them (since materials are added when they are 70% complete). Therefore, we needed to add 20,000 EUP of materials to finish BWIP. In ending WIP there are 25,000 and since they are more than 70% complete all of the materials have been added for these units. There were 150,000 units started and completed (170,000 units completed minus the 20,000 in BWIP) giving us a total of 195,000 EUP for materials. We can ignore the spoiled units in this question because they are identified and pulled from production before the materials are added.

Question 83 - CMA Sample Q3-5 - General Overhead Allocation

Pane Company uses a job costing system and applies overhead to products on the basis of direct labor cost. Job No. 75, the only job in process on January 1, had the following costs assigned as of that date: direct materials, $40,000; direct labor, $80,000; and factory overhead, $120,000. The following selected costs were incurred during the year:

Traceable to jobs:
Direct materials $178,000
Direct labor 345,000
$523,000

Not traceable to jobs:
Factory materials and supplies $ 46,000
Indirect labor 235,000
Plant maintenance 73,000
Depreciation on factory equipment 29,000
Other factory costs 76,000
$459,000

Pane's profit plan for the year included budgeted direct labor of $320,000 and factory overhead of $448,000. Assuming no work-in-process on December 31, Pane's overhead for the year was

A. $24,000 underapplied.
B. $11,000 underapplied.
C. $11,000 overapplied.
D. $24,000 overapplied.

A. This is simply the difference between the budgeted and the actual overhead. This is not how over or underapplied

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overhead is calculated.

B. The amount in this answer is correct, but it is overapplied rather than underapplied. Overapplied overhead occurs when the amount of overhead that was applied during the period is more than the actual overhead incurred.

C. This is simply the difference between the budgeted and the actual overhead. This is not how over or underapplied overhead is calculated. Also, given that the actual was less than budgeted, that would be like an underapplied.

D. The predetermined rate is determined at the beginning of the year using the budgeted direct labor cost ($320,000) and the budgeted overheads ($448,000). This gives us a rate of $1.40 per each direct labor dollar. Each time a direct labor dollar in incurred, the company will allocate $1.40 of overhead. Since there were direct labor costs of $345,000 during the period, this means that a total of $483,000 of overhead was applied. Since the actual overhead was only $459,000, the company has overapplied overhead of $24,000.

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**Question 84 - CIA 593 IV-4 - Other Costing Systems**

A new advertising agency serves a wide range of clients including manufacturers, restaurants, service businesses, department stores, and other retail establishments. The accounting system the advertising agency has most likely adopted for its record keeping in accumulating costs is

A. Operation costing.
B. Process costing.
C. Relevant costing.
D. Job-order costing.

A. Operation costing is used when the company produces similar goods that are slightly different.

B. Process costing is used mostly in an assembly-line type production process.

C. Relevant costing is related to decision making, not the method of accumulating costs.

D. Job order costing should be used when each job is unique and able to be separated from all of the other jobs. This is the case in this situation.

---

**Question 85 - CMA 1293 3-3 H5 - Joint and By-Products**

Atlas Foods produces the following three supplemental food products simultaneously through a refining process costing $93,000.

- Alfa: 10,000 pounds of Alfa, a popular but relatively rare grain supplement having a caloric value of 4,400 calories per pound.
- Betters: 5,000 pounds of Betters, a flavoring material high in carbohydrates with a caloric value of 11,200 calories per pound.
- Morefeed: 1,000 pounds of Morefeed, used as a cattle feed supplement with a caloric value of 1,000 calories per pound.

The joint products, Alfa and Betters, have a final selling price of $4 per pound and $10 per pound, respectively, after additional processing costs of $2 per pound of each product are incurred after the split-off point. Morefeed, a by-product, is sold at the split-off point for $3 per pound.

Assuming Atlas Foods inventories Morefeed, the by-product, the joint cost to be allocated to Alfa using the net realizable value method is
A. $31,000.
B. $60,000.
C. $30,000.
D. $3,000.

A. This answer does not reduce the joint costs by the sales proceeds from the by-product.
B. This is the amount that should be allocated to Betters.
C. Net realizable value (NRV) is calculated as the selling price minus future costs to complete and dispose. For Alfa, the NRV is $2 per pound, or $20,000 in total. For Betters, the NRV is $8 per pound, or $40,000 in total. Together, these two products have $60,000 of NRV. Of this, 33% is Alfa and 67% is Betters. Therefore, Alfa will get 1/3 of the joint allocable costs. The joint costs to allocate are the $93,000 in joint costs reduced by the $3,000 of revenue that will be received from the sale of the by-product. (The process of inventorying the by-product requires that the $3 per unit sales value is debited to inventory and the corresponding credit is a reduction of the production costs.) So, $90,000 needs to be allocated, and 1.3 of this is $30,000.
D. This is the value of the by-product.

---

**Question 86 - CIA 589 IV-4 - Other Costing Systems**

A corporation provides management consulting services to hospitals. Consulting engagements vary widely from hospital to hospital, both in terms of the nature of the consulting services provided and the scope of the consulting engagements. The most appropriate product costing system for the corporation is a

A. Just-in-time costing system.
B. Process costing system.
C. Operations costing system.
D. Job-order costing system.

A. Just-in-time costing would be used together with a JIT inventory system, which is not in use here.
B. Process costing is used when the units produced (or services provided) are similar.
C. Operations costing is used when the items produced share some, but not all costs and materials.
D. Job-order costing is used when the item (or in this case service) produced is unique, as is the case in a consulting company.

---

**Question 87 - CMA 696 3-4 - Process Costing**

A sporting goods manufacturer buys wood as a direct material for baseball bats. The Forming Department processes the baseball bats, and the bats are then transferred to the Finishing Department where a sealant is applied. The Forming Department began manufacturing 10,000 “Casey Sluggers” during the month of May. There was no beginning inventory.

Costs for the Forming Department for the month of May were as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct materials</td>
<td>$33,000</td>
</tr>
<tr>
<td>Conversion costs</td>
<td>17,000</td>
</tr>
<tr>
<td>Total</td>
<td>$50,000</td>
</tr>
</tbody>
</table>
A total of 8,000 bats were completed and transferred to the Finishing Department; the remaining 2,000 bats were still in the forming process at the end of the month. All of the Forming Department's direct materials were placed in process, but, on average, only 25% of the conversion cost was applied to the ending work-in-process inventory.

The cost of the work-in-process inventory in the Forming Department at the end of May is

A. $2,500
B. $20,000
C. $10,000
D. $7,600

A. This answer is incorrect.
B. This answer is incorrect.
C. This answer is incorrect.
D. The cost per unit for materials is $3.30 and this is easily calculated as there were 10,000 units and the cost of materials was $33,000. There were a total of 8,500 equivalent units of conversion costs (8,000 units were started and completed and the 2,000 units in ending inventory were 25% complete for conversion costs). This gives a cost per equivalent unit of $2. In ending work in progress there were 2,000 equivalent units of material (2,000 * $3.30 = $6,600) and 500 equivalent units of conversion costs (500 * $2 = $1,000). Adding these together the costs in ending work in progress were $7,600.

Question 88 - CIA 1194 III-47 H2 - Joint and By-Products

A manufacturing company uses a joint production process that produces three products at the split-off point. Joint production costs during April were $720,000. The company uses the sales value method for allocating joint costs. Product information for April was as follows:

<table>
<thead>
<tr>
<th>Product</th>
<th>R</th>
<th>S</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units produced</td>
<td>2,500</td>
<td>5,000</td>
<td>7,500</td>
</tr>
<tr>
<td>Units sold</td>
<td>2,000</td>
<td>6,000</td>
<td>7,500</td>
</tr>
</tbody>
</table>

Sales prices:
- At the split-off: $100, $80, $20
- After further processing: $150, $115, $30
- Costs to process after split-off: $150,000, $150,000, $100,000

Assume that all three products are main products and that they can be sold at the split-off point or processed further, whichever is economically beneficial to the company. What is the total cost of Product S in April if joint cost allocation is based on sales value at split-off?

A. $390,000
B. $571,463
C. $510,000
D. $375,000

A. This would be the total cost if the joint costs were allocated based on physical units.
B. This answer calculates the allocation of the joint costs by using the sales value at the split-off point based on actual sales.
C. In order to calculate the total cost of Product S, we need to know how much of the joint costs will be
allocated to Product S. In order to allocate joint costs based on the sales value at the split off point, we need to determine the sales value at the split off point for each item. For R it is $250,000 (2,500 units produced * $100). For S it is $400,000 (5,000 units * $80). For T it is $150,000 (7,500 * $20). In total this is $800,000, of which Product S is 50%. Therefore, 50% of the joint costs should be allocated to Product S. Joint costs were $720,000, so Product S receives $360,000. For the company it is more beneficial to process product S further because it gains greater incremental revenue after further production. Thus, we need to add the $150,000 of processing costs after the split off point to determine the total cost of Product S as $510,000.

D. This is the total cost of Product R.

---

**Question 89 - CMA 678 4-7 - Cost Terminology and Classifications**

The term prime costs refers to

A. All costs associated with manufacturing other than direct labor costs and raw materials costs.
B. The sum of direct labor costs and all factory overhead costs.
C. The sum of raw materials costs and direct labor costs.
D. Costs that are predetermined and should be attained.

A. This is the definition of overhead and overhead is not a prime cost.

B. This is the definition of conversion costs.

C. **Prime costs include direct materials and direct labor.**

D. This is the definition of a standard cost.

---

**Question 90 - CIA 1186 IV-8 - Variable and Absorption Costing**

Under variable (direct) costing, fixed manufacturing overhead costs are classified as

A. Inventoriable costs.
B. Administrative costs.
C. Selling costs.
D. Period costs.

A. Fixed manufacturing overhead is treated as a period cost under variable (or direct) costing.

B. Fixed manufacturing overhead is treated as a period cost under variable (or direct) costing.

C. **Fixed manufacturing overhead is treated as a period cost under variable (or direct) costing.**

D. Fixed manufacturing overhead is treated as a period cost under variable (or direct) costing.

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**Question 91 - CMA 694 3-6 - Variable and Absorption Costing**

The term "gross margin" for a manufacturing firm refers to excess of sales over

A. All variable costs, including variable selling and administrative expenses.

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B. Cost of goods sold, excluding fixed indirect manufacturing costs.
C. Cost of goods sold, including fixed indirect manufacturing costs.
D. Manufacturing costs, excluding fixed manufacturing costs.

A. This answer is incorrect because fixed costs are included in gross margin, and selling and administrative costs are not.
B. This answer is incorrect because fixed indirect manufacturing costs are included in the gross margin calculation.

C. By definition, gross margin is sales price minus cost of goods sold.
D. This answer is incorrect because fixed manufacturing costs are included in the gross margin calculation.

Question 92 - CMA 1292 3-1 - General Overhead Allocation

Costs are allocated to cost objects in many ways and for many reasons. Which one of the following is a purpose of cost allocation?

A. Budgeting cash and controlling expenditures.
B. Evaluating revenue center performance.
C. Aiding in variable costing for internal reporting.
D. Measuring income and assets for external reporting.

A. The allocation of costs is not part of the cash budgeting and expenditure control activities.
B. In order to evaluate a revenue center, the revenues of the center would be required, not the costs. Therefore, allocation of costs is not done to evaluate a revenue center.
C. Variable costing looks at only the variable costs. Since the variable costs are direct labor and direct materials, these do not need to be allocated. Overheads and other indirect costs are what are generally allocated.
D. The external reporting of income requires the allocation of all costs (absorption costing) to the units that were produced. Therefore, of the choices given, this is the best reason for the allocation of costs.

Question 93 - CIA 1185 IV-11 - Joint and By-Products

A company manufactures products X and Y using a joint process. The joint processing costs are $10,000. Products X and Y can be sold at split-off for $12,000 and $8,000, respectively. After split-off, product X is processed further at a cost of $5,000 and sold for $21,000, whereas product Y is sold without further processing. If the company uses the net realizable value method for allocating joint costs, the joint cost allocated to X is

A. $10,000.
B. $6,000.
C. $5,000.
D. $6,667.

A. This is the total amount of joint costs that need to be allocated.
B. Because product Y is not processed further after the split off point, we must use the relative sales values at the split off point in order to allocate the joint costs. Using the relative sales value method, we will allocate the $10,000 of joint costs to the different products. Since product X has a sales value of $12,000 and Y has a sales value of $8,000, the total sales value is $20,000. 60% of this is from product X, so product X will receive

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60%, or $6,000, of the joint costs.

C. This is how much would be allocated if the joint costs were allocated equally.

D. This answer is incorrect.

**Question 94** - CIA 1193 IV-4 - Cost Terminology and Classifications

During the current accounting period, a manufacturing company purchased $70,000 of raw materials, of which $50,000 of direct materials and $5,000 of indirect materials were used in production. The company also incurred $45,000 of total labor costs and $20,000 of other factory overhead costs. An analysis of the work-in-process control account revealed $40,000 of direct labor costs. Based upon the above information, what is the total amount accumulated in the factory overhead control account?

A. $45,000  
B. $50,000  
C. $30,000  
D. $25,000

A. This is the total labor cost.

B. This is the direct materials cost.

C. The factory overhead control account accumulates the actual overhead costs. This includes indirect materials, indirect labor and other overheads. The amount of indirect materials was $5,000 (given in the problem).

The company also had $5,000 in indirect labor, and this amount must be calculated. The problem tells us that the company incurred $45,000 of total labor costs, and that $40,000 of it was direct labor costs which are in the work-in-process control account. Therefore, the difference, or $5,000, was indirect labor.

Other factory overhead was $20,000, also given in the problem. So the total amount of overhead cost in the overhead control account was $5,000 + $5,000 + $20,000, or $30,000.

D. This answer does not include either indirect labor or indirect materials.

**Question 95** - CIA 577 IV-3 - Joint and By-Products

Joint costs are useful for

A. Setting the selling price of a product,
B. Determining inventory cost for accounting purposes.
C. Determining whether to continue producing an item.
D. Evaluating management by means of a responsibility reporting system.

A. Before a selling cost can be determined, the joint costs need to be allocated to the products that shared the joint costs.

B. Joint costs are used in the determination of the value of the inventory that was produced. In order to do this, the costs will need to be allocated to the different products produced that shared the joint costs.

(c) HOCK international, page 54
C. In order to determine if an item should still be produced in the short-run, the company will need to compare the variable costs to the selling price.

D. Joint costs themselves will not be able to evaluate management.

Question 96 - CIA 1196 III-93 - Process Costing

A company uses a job-order cost system in accounting for its manufacturing operations. Because its processes are labor oriented, it applies manufacturing overhead on the basis of direct labor hours (DLH). Normal spoilage is defined as 4% of the units passing inspection.

The company includes a provision for normal spoilage cost in its budgeted manufacturing overhead and manufacturing overhead rate. Data regarding a job consisting of 30,000 units are presented below:

Volume Data:

- Total units in job: 30,000
- Units failing inspection (spoiled): 1,500
- Good units passing inspection: 28,500

Cost Data:

- Direct materials: $18.00 per unit, $540,000 total
- Direct labor 2 DLH @ $16.00/DLH: $32.00 per unit, $960,000 total
- Manufacturing overhead 2 DLH @ $30.00/DLH: $60.00 per unit, $1,800,000 total

Total per unit: $110.00, Total cost: $3,300,000

The 1,500 units that failed inspection required .25 direct labor hours per unit to rework the units into good units. What is the proper charge to the loss from abnormal spoilage account?

A. $1,440
B. $4,140
C. Zero.
D. $3,450

A. This answer does not include the manufacturing overhead.

B. Normal spoilage is 4% of the good units that passed inspection. Since 28,500 units passed inspection, the normal spoilage is 1,140. Since there were 1,500 spoiled units, 360 of those spoiled units were abnormal spoilage. The costs that are associated with the abnormal spoilage are the rework costs that are incurred to make the unit salable. The rework costs are .25 of a direct labor hour, or $4.00, and the associated overhead since overhead is applied based on direct labor. The overhead is $30 per direct labor hour, and since .25 of an hour was required, this is $7.50. The per unit rework costs are $11.50 and since there were 360 units of abnormal spoilage, this $4,140. Note that the costs of production are not treated as abnormal spoilage. This is because the units are not discarded. Because they are reworked and then sold, it is the cost of the rework that is the result of the spoilage.

C. Because the total spoilage was greater than the expected 4%, there was abnormal spoilage.

D. This answer uses the wrong number for the number of units of abnormal spoilage.
Question 97 - CMA 1277 5-5 - Cost Terminology and Classifications

An imputed cost is

A. A cost that continues to be incurred even though there is no activity.
B. A cost that does not entail any dollar outlay but is relevant to the decision-making process.
C. The difference in total costs which results from selecting one alternative instead of another.
D. A cost that cannot be avoided because it has already been incurred.

A. This is the definition of a fixed cost.

B. **An imputed cost is one that does not need to be paid out in cash, but it still relevant for decision making.**

C. This is the definition of an opportunity cost.

D. This is the definition of a sunk cost.

---

Question 98 - CMA 693 3-4 - Cost Terminology and Classifications

A fixed cost that would be considered a direct cost is

A. The rental cost of a warehouse to store inventory when the cost objective is the Purchasing Department.
B. Board of directors' fees when the cost objective is the Marketing Department.
C. A production supervisor's salary when the cost objective is the Production Department.
D. A cost accountant's salary when the cost objective is a unit of product.

A. A direct cost is a cost that can be specifically attributed to the cost object. The rent for a warehouse is not directly traceable to the purchasing department because other departments (for example, the production departments) also have control over how much inventory is held.

B. A direct cost is a cost that can be specifically attributed to the cost object. The board of directors is not directly traceable to the marketing department so it is not a direct cost of the marketing department.

C. **The supervisor's salary would be a fixed cost and when looking at the production department, this is a direct cost since the cost can be associated with the cost objective (the production department).**

D. A direct cost is a cost that can be specifically attributed to the cost object. The accountant is not a direct cost when the cost object is a unit of product.

---

Question 99 - CMA 695 3-5 - Process Costing

Kimbeth Manufacturing uses a process cost system to manufacture Dust Density Sensors for the mining industry. The following information pertains to operations for the month of May.

<table>
<thead>
<tr>
<th>Units</th>
<th>Beginning work-in-process inventory, May 1</th>
<th>16,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units</td>
<td>Started in production during May</td>
<td>100,000</td>
</tr>
<tr>
<td>Units</td>
<td>Completed production during May</td>
<td>92,000</td>
</tr>
<tr>
<td>Units</td>
<td>Ending work-in-process inventory, May 31</td>
<td>24,000</td>
</tr>
</tbody>
</table>

The beginning inventory was 60% complete for materials and 20% complete for conversion costs. The ending
inventory was 90% complete for materials and 40% complete for conversion costs.

Costs pertaining to the month of May are as follows:
- Beginning inventory costs are materials, $54,560; direct labor, $20,320; and factory overhead, $15,240.
- Costs incurred during May are materials used, $468,000; direct labor, $182,880; and factory overhead, $391,160.

Using the FIFO method, the total cost of units in the ending work-in-process inventory at May 31 is

A. $153,168
B. $156,960
C. $154,800
D. $155,328

A. In order to determine the cost of the units in EWIP, we need to multiply the EUP in ending WIP for materials and conversion costs by the cost per unit for each element. The number of EUP of materials in ending WIP is 21,600 and the cost per EUP of materials was $4.50 (this is shown in the following paragraph). This gives a total of $97,200 of materials in EWIP. There were 9,600 EUP of conversion costs in EWIP and the cost per EUP was $5.83 (this is shown in the last paragraph). This is a total of $55,968 of conversion costs in EWIP. Added together there is $153,168 in total costs in EWIP. In order to calculate the cost per unit of materials under FIFO we simply divide the costs incurred for materials this period by the EUP of materials for the period. The EUP for the materials was 104,000 and the cost for the period was $468,000 (we use the cost of the materials used in production). This gives a per unit cost for materials of $4.50. In order to calculate the cost per unit of conversion costs under FIFO we simply divide the costs incurred for conversion costs this period by the EUP of conversion costs for the period. The EUP for the materials was 98,400 and the cost for the period was $574,040 (we must add together the costs for direct labor and overhead). This gives a per unit cost for conversion costs of $5.83.

B. This answer is the correct answer for the weighted average method.

C. This answer uses a weighted average calculation for conversion costs.

D. This answer uses a weighted average calculation for materials.

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**Question 100 - CMA 691 3-20 - Service Cost Allocation**

The managers of Rochester Manufacturing are discussing ways to allocate the cost of service departments such as Quality Control and Maintenance to the production departments. To aid them in this discussion, the controller has provided the following information:

<table>
<thead>
<tr>
<th></th>
<th>Quality Control</th>
<th>Maintenance</th>
<th>Machining</th>
<th>Assembly</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budgeted overhead costs before allocation</td>
<td>$350,000</td>
<td>$200,000</td>
<td>$400,000</td>
<td>$300,000</td>
<td>$1,250,000</td>
</tr>
<tr>
<td>Budgeted machine hours</td>
<td>50,000</td>
<td>50,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Budgeted direct labor hours</td>
<td>25,000</td>
<td>25,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Budgeted hours of service: Quality control</td>
<td>7,000</td>
<td>21,000</td>
<td>7,000</td>
<td>35,000</td>
<td></td>
</tr>
<tr>
<td>Quality control</td>
<td>10,000</td>
<td>18,000</td>
<td>12,000</td>
<td>40,000</td>
<td></td>
</tr>
</tbody>
</table>

If Rochester Manufacturing uses the reciprocal method of allocating service costs, the total amount of quality control costs (rounded to the nearest dollar) to be allocated to the other departments would be

A. $350,000
B. $284,211
C. $336,842

(c) HOCK international, page 57
D. $421,053.

A. This answer is incorrect.

B. This answer is incorrect.

C. This answer is incorrect.

D. The reciprocal method requires the usage of two formulas. The two formulas are based on the total costs that each service department incurred and are: QC = $350,000 + .25M M = $200,000 + .20QC Now, we can solve this for either variable by substituting one equation into the other. We will solve for QC (because this is what the question asks for), as follows: QC = $350,000 + .25($200,000 + .20QC) QC = $350,000 + $50,000 + .05QC .95QC = $400,000 QC = $421,053. This is the amount of costs that the QC department must allocate, including to the maintenance department.

Question 101 - CMA 1295 3-23 - General Overhead Allocation

Madtack Company's beginning and ending inventories for the month of November are:

<table>
<thead>
<tr>
<th></th>
<th>November 1</th>
<th>November 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct materials</td>
<td>$67,000</td>
<td>$62,000</td>
</tr>
<tr>
<td>Work-in-process</td>
<td>145,000</td>
<td>171,000</td>
</tr>
<tr>
<td>Finished goods</td>
<td>85,000</td>
<td>78,000</td>
</tr>
</tbody>
</table>

Production data for the month of November:

- Direct labor: $200,000
- Actual factory overhead: $132,000
- Direct materials purchased: $163,000
- Transportation in: $4,000
- Purchase returns and allowances: $2,000

Madtack uses one factory overhead control account and charges factory overhead to production at 70% of direct labor cost. The company does not formally recognize over/underapplied overhead until year-end.

Madtack Company's net charge to factory overhead control for the month of November is

A. $8,000 credit, underapplied.
B. $8,000 credit, overapplied.
C. $8,000 debit, overapplied.
D. $8,000 debit, underapplied.

A. There would be a credit balance in the account, but this would represent an overapplied amount, not an underapplied amount.

B. When the actual costs were incurred, the factory overhead account was debited for $132,000. When the overhead was applied, the account was credited for $140,000 (70% of the $200,000 labor cost). This leaves a credit balance of $8,000 in the account and this represents an overapplied amount since the applied overhead was greater than the actual overhead.

C. Overhead was overapplied, but this would be a credit balance in the account.

D. This is incorrect because the account balance would be a credit and this would represent an overapplied amount.
Question 102 - CMA 1286 4-14 - Process Costing

Levittown Company employs a process cost system for its manufacturing operations. All direct materials are added at the beginning of the process and conversion costs are added proportionately. Levittown’s production quantity schedule for November is reproduced as follows.

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-in-process on November 1</td>
</tr>
<tr>
<td>(60% complete as to conversion costs)</td>
</tr>
<tr>
<td>Units started during November</td>
</tr>
<tr>
<td>Total units to account for</td>
</tr>
<tr>
<td>Units completed and transferred out from BI</td>
</tr>
<tr>
<td>Units started and completed during November</td>
</tr>
<tr>
<td>Work-in-process on November 30</td>
</tr>
<tr>
<td>(20% complete as to conversion costs)</td>
</tr>
<tr>
<td>Total units accounted for</td>
</tr>
</tbody>
</table>

Using the FIFO method, the equivalent units for direct materials for November are

A. 3,800 units.
B. 4,400 units.
C. 6,000 units.
D. 5,000 units.

A. This answer is incorrect.
B. This answer treats the ending WIP as if the material was not added at the beginning and calculates 20% of the ending WIP.
C. This is the total number of units in the process this month.
D. The calculation of the EUP for material is very simple under FIFO when all materials are added at the beginning of the process. In this case, the EUP for materials is equal to the number of units started during the period, or 5,000.

Question 103 - CMA 1295 3-19 - Cost Terminology and Classifications

Madtack Company’s beginning and ending inventories for the month of November are:

<table>
<thead>
<tr>
<th></th>
<th>November 1</th>
<th>November 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct materials</td>
<td>$67,000</td>
<td>$62,000</td>
</tr>
<tr>
<td>Work-in-process</td>
<td>145,000</td>
<td>171,000</td>
</tr>
<tr>
<td>Finished goods</td>
<td>85,000</td>
<td>78,000</td>
</tr>
</tbody>
</table>

Production data for the month of November:

- Direct labor: $200,000
- Actual factory overhead: 132,000
- Direct materials purchased: 163,000
- Transportation in: 4,000
- Purchase returns and allowances: 2,000
Madtack uses one factory overhead control account and charges factory overhead to production at 70% of direct labor cost. The company does not formally recognize over/underapplied overhead until year-end.

Madtack Company's prime cost for November is

A. $363,000  
B. $370,000  
C. $170,000  
D. $168,000

A. This answer also includes the change in finished goods inventory.

B. The prime costs are direct materials and direct labor. We are told that the direct labor was $200,000, but will need to calculate the direct materials for November. The beginning direct materials was $67,000. During the period, they purchased $163,000 of direct materials and also incurred $4,000 in transportation in costs. However, they also returned $2,000 of direct materials during the period. Adding these together we can calculate the total direct materials that they had during November as $232,000. Since there was an ending inventory of $62,000, they must have used $172,000 of direct materials during the period. Added to the direct labor, the total prime costs were $370,000. We do not worry about the raw materials and finished goods inventory numbers because the amounts in those accounts were not related to the current period.

C. This is only the raw materials used and does not include direct labor.

D. This answer is simply the amount of purchases adjusted for the change in inventory and does not include transportation, returns or direct labor.

---

**Question 104 - CIA 590 IV-3 - Other Costing Systems**

The loan department of a financial corporation makes loans to businesses. The costs of processing these loans are often several thousand dollars. The costs for each loan, which include labor, telephone, and travel, are significantly different across loans. Some loans require the use of outside services such as appraisals, legal services, and consulting services, whereas other loans do not require these services. The most appropriate cost accumulation method for the loan department of the corporation is

A. Job-order costing.  
B. Differential costing.  
C. Process costing.  
D. Joint product costing.

A. Job-order costing is used when each item is unique. Since each loan has different costs associated with it, job-order costing should be used.

B. Differential costing is used in decision making to compare the differences between two or more options. This is not appropriate in this situation.

C. Process costing is often used in an assembly line when similar products are being used. This is not the situation in this question.

D. Joint product costing is used when more than one product is produced sharing the same production process. This is not the case in this question.

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**Question 105 - CIA 591 IV-13 - Variable and Absorption Costing**
Product sales: 1,000 units at $10 each
Variable manufacturing costs: $5.50 per unit
Fixed manufacturing overhead: $1,200
Variable selling and administrative costs: $.50 per unit sold
Fixed selling and administrative costs: $1,000
No beginning inventory
Units produced: 1,200

Operating income under variable (direct) costing is

A. $700
B. $600
C. $1,800
D. $2,300

A. This answer is incorrect.
B. This answer is incorrect.
C. Under variable costing, all of the fixed factory overheads will be expensed during the period. The manufacturing contribution per unit is calculated as the sales price ($10) minus the variable costs of production ($5.50) and is $4.50. Since they sold 1,000 units, this gave them $4,500 of contribution before the fixed costs and non product costs. Fixed manufacturing ($1,200) and fixed selling costs ($1,000) are subtracted as is the variable selling and administrative costs of $.50 per unit, or $500. Subtracting these costs from contribution gives an operating income of $1,800.
D. This answer does not subtract the variable selling and administration costs.

Question 106 - CMA 1293 3-3 H4 - Joint and By-Products

Atlas Foods produces the following three supplemental food products simultaneously through a refining process costing $93,000.

- Alfa: 10,000 pounds of Alfa, a popular but relatively rare grain supplement having a caloric value of 4,400 calories per pound.
- Betters: 5,000 pounds of Betters, a flavoring material high in carbohydrates with a caloric value of 11,200 calories per pound.
- Morefeed: 1,000 pounds of Morefeed, used as a cattle feed supplement with a caloric value of 1,000 calories per pound.

The joint products, Alfa and Betters, have a final selling price of $4 per pound and $10 per pound, respectively, after additional processing costs of $2 per pound of each product are incurred after the split-off point. Morefeed, a by-product, is sold at the split-off point for $3 per pound.

Assuming Atlas Foods does not inventory Morefeed, the by-product, the joint cost to be allocated to Betters using the net realizable value method is

A. $52,080.
B. $62,000.
C. $30,000.
D. $31,000.

A. This is the answer if we use calories to allocate the costs.
B. Net realizable value (NRV) is calculated as the selling price minus future costs to complete and dispose. For Alfa, the NRV is $2 per pound, or $20,000 in total. For Betters, the NRV is $8 per pound, or $40,000 in total. Together, these two products have $60,000 of NRV. Of this, 33% is Alfa and 67% is Betters. Therefore, Betters will get 2/3 of the joint allocable costs. The joint costs to allocate are the $93,000 and because they do not inventory the by-product, all $93,000 of the joint costs need to be allocated. Betters is to receive 2/3 of this, or $62,000.

C. This is the amount that would be allocated to Alfa is Atlas inventoried the by-product.

D. This is the amount that would be allocated to Alfa.

---

**Question 107 - CIA 594 III-75 - Service Cost Allocation**

A company has two service departments, Power and Maintenance, and two production departments, Machining and Assembly. All costs are regarded as strictly variable. For September the following information is available:

<table>
<thead>
<tr>
<th></th>
<th>Service Departments</th>
<th>Production Departments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Power</td>
<td>Maintenance</td>
</tr>
<tr>
<td>Direct costs</td>
<td>$62,500</td>
<td>$40,000</td>
</tr>
</tbody>
</table>

**Actual activity:**

Kilowatt hrs.   50,000 150,000 50,000
Maintenance hours 250 1,125 1,125

If the company uses the direct method for allocating service departments costs to production departments, what dollar amount of Power Department cost will be allocated to the Machining Department for September?

- A. $15,625
- B. $46,875
- C. $39,062.50
- D. $37,500

A. This is the amount that would be allocated to the Assembly department.

**B. Under the direct method of service cost allocation, we ignore the services that are provided from one service department to another. Therefore, the Power Department costs will be allocated only to the two production departments. In total the power department provided 200,000 kilowatt hours to the production departments, and of this 75% was to the machining department. Therefore, the machining department will get 75%, or $46,875 of the power department costs.**

C. This is the amount that would have been allocated if the direct costs of each production department had been used instead of the kilowatt hours.

D. This answer included the allocation of the power department costs to the maintenance department as well as the production departments. Under the direct method, service department costs are not allocated to the other service departments.

---

**Question 108 - CIA 1190 IV-10 - Joint and By-Products**

A joint process is a manufacturing operation yielding two or more identifiable products from the resources employed in the process. The two characteristics that identify a product generated from this type of process as a joint product are that it

(c) HOCK international, page 62
A. Is identifiable as an individual product before the production process, and it has relatively significant physical volume when compared with the other products.
B. Is identifiable as an individual product only upon reaching the split-off point, and it has relatively minor sales value when compared to the other products.
C. Is identifiable as an individual product only upon reaching the split-off point, and it has relatively significant sales value when compared with the other products.
D. Has relatively significant physical volume when compared with the other products, and it can be sold immediately without any additional processing.

A. Joint products are identifiable at the split-off point and they have significant sales value. If it is identifiable before the split off point, it is not a joint product, but rather an individual product.
B. Joint products are identifiable at the split-off point and they have significant sales value. If a product has a minor sales value it is a by-product.

C. Joint products are identifiable at the split-off point and they have significant sales value.

D. An item does not need to be able to be sold without any additional processing to be a joint product. Most joint products will require additional processing before they are sold as a finished product.

Question 109 - CIA 578 IV-1 - Other Costing Systems

Job-order costs are most useful for
A. Determining the cost of a specific project.
B. Determining inventory valuation using LIFO.
C. Controlling indirect costs of future production.
D. Estimating the overhead costs included in transfer prices.

A. Job-order costs are useful to determine the cost of a specific project. Job-order costing is used when a company has unique and identifiable projects or jobs.
B. LIFO inventory method may be used with other costing methods besides job-order costing.
C. Job-order costs do not influence future prices any more than any other method.
D. Other costing methods may also be used to estimate overhead costs included in transfer prices.

Question 110 - CIA 1184 IV-23 - Joint and By-Products

A cheese company produces natural cheese from cow's milk. As a result of the process, a secondary product, whey, is produced in the proportion of one pound for each pound of cheese. The data give the standards set for 1,000 pounds of cow's milk:

1,000 pounds of cow's milk at $.20/pound

Input:
- 40 hours of labor at $10/hour
  - Overhead is applied on a basis of 100% of direct labor cost

Output:
- 450 pounds of cheese
- 450 pounds of whey

The following prices and demand are expected:
<table>
<thead>
<tr>
<th>Product</th>
<th>Price per Pound</th>
<th>Demand in Pounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cheese</td>
<td>$2.00</td>
<td>450</td>
</tr>
<tr>
<td>Whey</td>
<td>.80</td>
<td>375</td>
</tr>
</tbody>
</table>

Given that the cheese company allocates common costs on the basis of net realizable values, the allocated common costs per 1,000 pounds of cow's milk for cheese and whey would be (rounded to nearest dollar), respectively,

A. To Cheese - $500, To Whey - $500
B. To Cheese - $714, To Whey - $286
C. To Cheese - $450, To Whey - $150
D. To Cheese - $750, To Whey - $250

A. This is just a simple equal allocation of the joint costs between the two products. The costs should have been allocated using NRV.
B. This answer includes all of the whey that was produced in the NRV calculation. Only the whey that will be sold should be included since the selling price of the units that are not sold will be $0.
C. This answer did not include the overhead in the calculation of the common costs to allocate.
D. The NRV of an item is calculated as the selling price minus the costs to complete and dispose. In order to allocate joint costs based on NRV, we need to calculate the total NRV that all of the joint products have at the split off point. In this question there are no further processing costs, so we will use the sales price as the NRV. One pound of cheese has a sales price of $2 and there were 450 pounds - this is $900 of NRV. One pound of whey has a sales price of $.80 and there will be only 375 pounds of whey that will be able to be sold - this is $300 (the whey that will not be sold will bring no NRV to the company since the sales price is $0). In total there are $1,200 of NRV, and the cheese accounts for 75% of it. This means that the cheese will get 75% of the common costs. Now we need to calculate the common costs. They are made up of $200 of milk, $400 of labor and $400 of overhead. This is $1,000 and 75% of it is $750. The other $250 will go to the whey.

**Question 111 - CMA 1282 4-101 - Cost Terminology and Classifications**

Which of the following is the best example of a variable cost?

A. The corporate president's salary.
B. Interest charges.
C. Property taxes.
D. Cost of raw materials.

A. A variable cost is a cost that changes in total as the level of production changes. The president's salary will not be affected by the level of production.
B. A variable cost is a cost that changes in total as the level of production changes. Interest charges will not be affected by the level of production.
C. A variable cost is a cost that changes in total as the level of production changes. Property taxes will not be affected by the level of production.
D. A variable cost is a cost that changes in total as the level of production changes. Direct materials is a very good example of a variable cost.
Question 112 - CMA 1285 4-25 - General Overhead Allocation

Farber Company employs a normal (nonstandard) absorption cost system. The following information is from the financial records of the company for the year.

- Total manufacturing costs were $2,500,000.
- Cost of goods manufactured was $2,425,000.
- Applied factory overhead was 30% of total manufacturing costs.
- Factory overhead was applied to production at a rate of 80% of direct labor cost.
- Work-in-process inventory at January 1 was 75% of work-in-process inventory at December 31.

Farber Company’s total direct labor cost for the year is

A. $937,500
B. $750,000
C. $600,000
D. $909,375

A. We are told that applied overhead was 30% of total manufacturing costs. This means that the applied overhead was $750,000 ($2,500,000 * 30%). We are also told that overhead was applied at a rate of 80% of direct labor. If the overhead is 80% of the direct labor and we know that the overhead was $750,000, direct labor must have been $937,500 ($750,000 : 80%).

B. This is the amount of factory overhead.

C. This answer multiplies the factory overhead by 80%, rather than dividing it by 80%.

D. This answer starts by calculating 30% of cost of goods manufactured, not total manufacturing costs.

Question 113 - CMA 1286 4-18 H2 - Variable and Absorption Costing

A manufacturer at the end of its fiscal year recorded the data below:

<table>
<thead>
<tr>
<th>Cost</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prime cost</td>
<td>$800,000</td>
</tr>
<tr>
<td>Variable manufacturing overhead</td>
<td>100,000</td>
</tr>
<tr>
<td>Fixed manufacturing overhead</td>
<td>160,000</td>
</tr>
<tr>
<td>Variable selling and other expenses</td>
<td>80,000</td>
</tr>
<tr>
<td>Fixed selling and other expenses</td>
<td>40,000</td>
</tr>
</tbody>
</table>

If the manufacturer uses variable costing, the inventoriable costs for the fiscal year are

A. $900,000
B. $1,060,000
C. $980,000
D. $800,000

A. Under variable costing, the variable costs of production are inventoried. This includes the prime costs (which include direct labor and direct materials) and variable manufacturing overhead. In total, this is $900,000.

B. This answer includes fixed manufacturing overhead, which is not inventoried under variable costing.

C. This answer includes variable selling and other expenses which are not included in inventoriable costs under the variable method because they are not production costs.
D. This answer does not include variable manufacturing overhead, which is inventoried under variable costing.

Question 114 - CMA 693 3-1 - Activity Based Costing

The allocation of costs to particular cost objectives allows a firm to analyze all of the following except

A. Whether a particular department should be expanded.
B. Why the sales of a particular product have increased.
C. Whether a product line should be discontinued.
D. Why a particular product should be purchased rather than manufactured in-house.

A. The allocation of costs will be part of the analysis of whether or not a department should be expanded. Without this allocation, management will not know if the department is profitable.

B. The allocation of costs to a cost objective will not enable the company to analyze why sales of a particular product increased. This is because the sales of the item are connected to so many other factors - the price, the economy, the actions of competitors.

C. The allocation of costs will be part of the analysis of whether or not a product line should be discontinued. Without this allocation, management will not know if the product line is profitable.

D. The allocation of costs is a critical part of the make-or-buy decision that a company must make.

Question 115 - CIA 596 III-99 - General Overhead Allocation

A company with three products classifies its costs as belonging to five functions: design, production, marketing, distribution, and customer services. For pricing purposes, all company costs are assigned to the three products. The direct costs of each of the five functions are traced directly to the three products. The indirect costs of each of the five business functions are collected into five separate cost pools and then assigned to the three products using appropriate allocation bases. The allocation base that would most likely be the best for allocating the indirect costs of the distribution function is

A. Dollar sales volume.
B. Number of customer phone calls.
C. Number of sales persons.
D. Number of shipments.

A. The dollar sales volume would not be a good basis for the allocation of distribution costs because a very expensive item might be very small and have low distribution costs.

B. The number of phone calls would not be a good basis for the allocation of distribution costs.

C. The number of sales people would not be a good basis for the allocation of distribution costs.

D. The number of shipments would be a good basis for the allocation of distribution costs because the more shipments that are made, the higher the distribution costs will be.

Question 116 - CIA 597 III-75 - Activity Based Costing

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Activity-based costing (ABC) is increasingly more feasible because of technological advances that allow managers to obtain better and more timely information at relatively low cost. For this reason, a manufacturer is considering using bar-code identification for recording information on parts used by the manufacturer. A reason to use bar codes rather than other means of identification is to ensure that

A. The movement of parts is easily and quickly recorded.
B. Vendors use the same part numbers.
C. Vendors use the same identification methods.
D. The movement of all parts is recorded.

A. Through the use of bar codes the movement and location of a product may be tracked quickly and easily without human involvement.
B. Just because a bar code system is used does not mean that vendors will use the same part numbers.
C. Just because a bar code system is used does not mean that vendors will use the same identification methods.
D. Just because the unit has a bar code on it does not mean that the bar code will be read and the movement of the unit tracked each time it is moved.

Question 117 - CMA 1293 3-9 - Other Costing Systems

An operation costing system is

A. Identical to a process costing system except that actual cost is used for manufacturing overhead.
B. The same as a job order costing system except that no overhead allocations are made since actual costs are used throughout.
C. The same as a process costing system except that materials are allocated on the basis of batches of production.
D. The same as a job order costing system except that materials are accounted for in the same way as they are in a process costing system.

A. Operation costing is a combination of process costing and job-order costing. Operation costing does not use actual cost for the allocation of overhead.
B. Operation costing is a combination of process costing and job-order costing. Operation costing does not use actual cost for the allocation of overhead.
C. Operation costing is a combination of process costing and job-order costing. The job-order costing part comes through in the way materials are usually allocated - on the basis of batches. Operation costing is used in a situation in which a company produces similar items that differ mostly in the materials that are used.
D. In operation costing the materials are accounted for in batches, and everything else is usually accounted for as in process costing.

Question 118 - CIA 1190 IV-5 - Cost Terminology and Classifications

In a traditional manufacturing operation, direct costs would normally include

A. Electricity in an electronics plant.
B. Commissions paid to sales personnel.
C. Wood in a furniture factory.

(c) HOCK international, page 67
D. Machine repairs in an automobile factory.

A. Electricity of a plant is a classic example of the factory overhead (indirect) costs.

B. Commissions paid to sales personnel are a classic example of period cost related to sales (non-manufacturing overhead). These cost neither direct nor indirect production costs.

C. Direct costs are those that can be easily traced to the specific units of products. There are two main categories of direct costs: direct labor and direct materials. Direct labor costs are the costs of labor that may be directly traced to the production of a unit. Direct material costs are the materials that are directly put into the finished product. The costs included in the direct material cost are all of the costs associated with acquiring it - the item itself, shipping, insurance and taxes, among others. Common examples of direct materials are plastic, metal, tires and components. Thus, wood in a furniture factory is a direct cost.

D. Machine repairs and maintenance in an automobile factory are a good example of factory overhead (indirect) costs.

---

**Question 119 - CMA 690 4-2 - General Overhead Allocation**

Alex Company had the following inventories at the beginning and end of the month of January.

<table>
<thead>
<tr>
<th></th>
<th>January 1</th>
<th>January 31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finished goods</td>
<td>$125,000</td>
<td>$117,000</td>
</tr>
<tr>
<td>Work-in-process</td>
<td>235,000</td>
<td>251,000</td>
</tr>
<tr>
<td>Direct materials</td>
<td>134,000</td>
<td>124,000</td>
</tr>
</tbody>
</table>

The following additional manufacturing data were available for the month of January:

- Direct materials purchased $189,000
- Purchase returns and allowances $1,000
- Transportation-in $3,000
- Direct labor $300,000
- Actual factory overhead $175,000

Alex Company applies factory overhead at a rate of 60% of direct labor cost, and any overapplied or underapplied factory overhead is deferred until the end of the year, December 31.

Alex Company's total manufacturing cost for January was

A. $673,000.
B. $489,000.
C. $681,000.
D. $665,000.

A. This is the cost of goods sold.

B. This is only direct materials plus direct labor and does not include overhead.

C. Total manufacturing cost is made up of prime costs plus manufacturing overheads applied. The prime costs are direct materials and direct labor. We are told that the direct labor was $300,000, but will need to calculate the direct materials for January. The beginning direct materials cost was $134,000. During the period, they purchased $189,000 of direct materials and also incurred $3,000 in transportation in costs. However, they also returned $1,000 of direct materials during the period. Adding these together we can calculate the total direct materials that they had during January as $325,000. Since there was an ending inventory of $124,000, they must have used $201,000 of direct materials during the period. Added to the direct
labor, the total prime costs were $501,000. We do not worry about the raw materials and finished goods inventory numbers because the amounts in those accounts were not related to the current period. Overhead is applied as 60% of direct labor, which totals $180,000 ($300,000 * 60%). Adding the prime costs and the overhead together, we get $681,000.

D. This is the cost of goods manufactured.

**Question 120 - CMA 1290 3-12 - Variable and Absorption Costing**

Which one of the following considers the impact of fixed overhead costs?

A. Full absorption costing.
B. Variable costing.
C. Marginal costing.
D. Direct costing.

**A. Full absorption costing includes the fixed manufacturing overheads in the calculation of the per unit cost.**

B. Variable (direct) costing treats only variable costs as product costs. Fixed overhead costs are expensed.

C. Marginal costing considers only the cost of producing one more unit. Since fixed costs are fixed, they are not considered in marginal costing.

D. Direct (variable) costing treats only variable costs as product costs. Fixed overhead costs are expensed.

**Question 121 - CIA 596 III-95 - Activity Based Costing**

A company's accounts receivable department processed 33,000 invoices during a 6-month period with a billing error rate of 3%. Each billing error cost $110 to correct. In addition, 15% of contract cancellations during this period were attributed to billing errors, resulting in estimated lost total contribution margins of $75,000 from dissatisfied customers who canceled their contracts. If the number of invoices issued and the costs per billing error remain unchanged, the annual savings available for funding of a quality improvement program to lower the company's billing error rate by 1% (i.e., from 3% to 2%) would be

A. $222,600
B. $122,600
C. $61,300
D. $267,800

A. This answer assumes that all of the currently lost contribution can be saved.

B. Before we begin to answer this question numerically, we need to recognize that the information in the question is for 6 months, but the question is about a year. So, we will calculate the savings for six months, then multiply it by 2. If the error rate is reduced from 3% to 2%, we can assume that they would save 1/3 of their costs incurred as a result of the errors. Currently, they make 990 mistakes in the processing of their 33,000 invoices. As each error costs $110, this is $108,900. Added to this is the lost $75,000 contribution as a result of cancelled contracts. In total, this is $183,900. By reducing the error rate to 2%, the company would save 1/3 of these total costs, or $61,300, every 6 months. Over a year, this becomes $122,600.

C. This is the amount of savings that would result in 6 months.

D. This answer assumes that the error rate is reduced to 0%.

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**Question 122** - CIA 593 IV-3 - Activity Based Costing

A manufacturing firm produces multiple families of products requiring various combinations of different types of parts. The manufacturer has identified various cost pools, one of which consists of materials handling costs. This cost pool includes the wages and employee benefits of the workers involved in receiving materials, inspecting materials, storing materials in inventory, and moving materials to the workstations; depreciation and maintenance of materials handling equipment (e.g., forklift trucks); and costs of supplies used as well as other related costs. Of the following, the most appropriate cost driver for assigning materials handling costs to the various products most likely is

A. Direct labor hours.
B. Number of units produced.
C. Number of vendors involved.
D. Number of parts used.

A. Direct labor hours does not correlate to the costs incurred for materials handling.
B. The number of units produced does not correlate to costs incurred for materials handling.
C. How many suppliers there are does not impact the costs of movement related to the different products produced.
D. When we are trying to allocate the costs related to handling costs, the number of parts used in a particular item would be a very good allocation base. The more parts that are in a product, the more movement there will be related to that product.

**Question 123** - CIA 1193 IV-3 - Service Cost Allocation

A large manufacturing company has two service departments and two production departments. Each of the service departments renders services to each other and to the two production departments. Which one of the following methods would most accurately allocate the costs of the service departments to the production departments of this company?

A. The reciprocal allocation method.
B. The step-down allocation method.
C. The direct allocation method.
D. The linear allocation method.

A. The reciprocal method is the most accurate method of allocating the service department costs because it considers all of the services that the service departments provide to each other.
B. The step-down method allocates some service department costs to other service departments, but does not allocate them back to those service departments already allocated.
C. The direct method does not consider any services provided by one service department to another service department. Therefore, though quick and easy, the direct method does not provide the most accurate allocation of the costs of the service departments.
D. This is not a method of allocating the costs of the service departments.

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Question 124 - CIA 1193 IV-7 - Process Costing

A manufacturing firm has a normal spoilage rate of 4% of the units inspected; anything over this rate is considered abnormal spoilage. Final inspection occurs at the end of the manufacturing process. The firm employs the first-in, first-out (FIFO) method of inventory flow. The processing for the current month was as follows:

<table>
<thead>
<tr>
<th></th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning work-in-process</td>
<td>24,600 units</td>
</tr>
<tr>
<td>Units entered into production</td>
<td>470,400 units</td>
</tr>
<tr>
<td>Units completed and passing inspection (460,800) units</td>
<td></td>
</tr>
<tr>
<td>Units failing final inspection</td>
<td>22,600 units</td>
</tr>
<tr>
<td>Ending work-in-process inventory</td>
<td>11,600 units</td>
</tr>
</tbody>
</table>

The equivalent units assigned to normal and abnormal spoilage for the current month would be

A. Normal Spoilage - 19,336 units, Abnormal Spoilage - 3,264 units
B. Normal Spoilage - 18,432 units, Abnormal Spoilage - 4,168 units
C. Normal Spoilage - 18,816 units, Abnormal Spoilage - 3,784 units
D. Normal Spoilage - 904 units, Abnormal Spoilage - 21,696 units

A. Normal spoilage is 4% of the units that are inspected. We need to determine how many units were inspected. This is done by adding together the number of units that passed inspection (460,800) and the number of units that failed inspection (22,600). In total, 483,400 units were inspected. The normal spoilage is 4% of this, or 19,336 units. Since there is only one choice with this as the answer for normal spoilage, we do not need to calculate abnormal spoilage, but it is simply the total number of spoiled units minus normal spoilage, or 22,600 - 19,336 = 3,264 abnormally spoiled units.

B. This answer calculated normal spoilage as 4% of the units that passed final inspection.

C. This answer calculated spoilage as 4% of the units entered into production.

D. This answer calculates normal spoilage as 4% of the units that failed final inspection.

Question 125 - CMA 1295 3-20 - Cost Terminology and Classifications

Madtack Company's beginning and ending inventories for the month of November are:

<table>
<thead>
<tr>
<th></th>
<th>November 1</th>
<th>November 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct materials</td>
<td>$67,000</td>
<td>$62,000</td>
</tr>
<tr>
<td>Work-in-process</td>
<td>145,000</td>
<td>171,000</td>
</tr>
<tr>
<td>Finished goods</td>
<td>85,000</td>
<td>78,000</td>
</tr>
</tbody>
</table>

Production data for the month of November:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct labor</td>
<td>$200,000</td>
</tr>
<tr>
<td>Actual factory overhead</td>
<td>132,000</td>
</tr>
<tr>
<td>Direct materials purchased</td>
<td>163,000</td>
</tr>
<tr>
<td>Transportation in</td>
<td>4,000</td>
</tr>
<tr>
<td>Purchase returns and allowances</td>
<td>2,000</td>
</tr>
</tbody>
</table>

Madtack uses one factory overhead control account and charges factory overhead to production at 70% of direct labor cost. The company does not formally recognize over/underapplied overhead until year-end.

Madtack Company's total manufacturing cost for November is

A. $363,000
B. $503,000
C. $510,000
D. $502,000

A. This answer does not calculate prime costs correctly and does not include overhead at all.
B. This answer includes the change in the finished goods inventory.
C. Total manufacturing cost is made up of prime costs plus manufacturing overheads applied. The prime costs are direct materials and direct labor. We are told that the direct labor was $200,000, but will need to calculate the direct materials for November. The beginning direct materials was $67,000. During the period, they purchased $163,000 of direct materials and also incurred $4,000 in transportation in costs. However, they also returned $2,000 of direct materials during the period. Adding these together we can calculate the total direct materials that they had during November as $232,000. Since there was an ending inventory of $62,000, they must have used $170,000 of direct materials during the period. Added to the direct labor, the total prime costs were $370,000. We do not worry about the raw materials and finished goods inventory numbers because the amounts in those accounts were not related to the current period. Overhead is applied as 70% of direct labor, which totals $140,000 ($200,000 * 70%). Adding the prime costs and the overhead together, we get $510,000.
D. This answer uses actual factory overhead.

---

Question 126 - CMA 691 3-18 - Service Cost Allocation

The managers of Rochester Manufacturing are discussing ways to allocate the cost of service departments such as Quality Control and Maintenance to the production departments. To aid them in this discussion, the controller has provided the following information:

<table>
<thead>
<tr>
<th></th>
<th>Quality Control</th>
<th>Maintenance</th>
<th>Machining</th>
<th>Assembly</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budgeted overhead costs before allocation</td>
<td>$350,000</td>
<td>$200,000</td>
<td>$400,000</td>
<td>$300,000</td>
<td>$1,250,000</td>
</tr>
<tr>
<td>Budgeted machine hours</td>
<td>50,000</td>
<td>50,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Budgeted direct labor hours</td>
<td></td>
<td>25,000</td>
<td>25,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Budgeted hours of service:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality control</td>
<td>7,000</td>
<td>21,000</td>
<td>7,000</td>
<td>35,000</td>
<td></td>
</tr>
<tr>
<td>Maintenance</td>
<td>10,000</td>
<td>18,000</td>
<td>12,000</td>
<td>40,000</td>
<td></td>
</tr>
</tbody>
</table>

If Rochester Manufacturing decides not to allocate service costs to the production departments, the overhead allocated to each direct labor hour in the Assembly Department would be

A. $16.00.
B. $3.20.
C. $3.50.
D. $12.00.

A. This answer is incorrect.
B. This answer is incorrect.
C. This answer is incorrect.
D. This is a very simple question, but we need to recognize it as simple. We simply need to divide the assembly costs by the number of direct labor hours. $300,000 / 25,000 = $12.
Believing that its traditional cost system may be providing misleading information, an organization is considering an activity-based costing approach. It now employs a full cost system and has been applying its manufacturing overhead on the basis of machine hours.

The organization plans on using 50,000 direct labor hours and 30,000 machine hours in the coming year. The following data show the manufacturing overhead that is budgeted:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Cost Driver</th>
<th>Budgeted Activity</th>
<th>Budgeted Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material handling</td>
<td>No. of parts handled</td>
<td>6,000,000</td>
<td>$720,000</td>
</tr>
<tr>
<td>Setup costs</td>
<td>No. of setups</td>
<td>750</td>
<td>$315,000</td>
</tr>
<tr>
<td>Machining costs</td>
<td>Machine hours</td>
<td>30,000</td>
<td>$540,000</td>
</tr>
<tr>
<td>Quality control</td>
<td>No. of batches</td>
<td>500</td>
<td>$225,000</td>
</tr>
<tr>
<td>Total Manufacturing Overhead Cost</td>
<td>$1,800,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cost, sales and production for one of the organization's products for the coming year are as follows:

**Prime Costs:**
- Direct material cost per unit: $4.40
- Direct labor cost per unit = $.05 DLH @ $15/DLH: $.75
- Total Prime Cost: $5.15

**Sales and Production Data:**
- Expected sales: 20,000 units
- Batch size: 5,000 units
- Setups: 2 per batch
- Total parts per finished unit: 5 parts
- Machine hours required: 80 MH per batch

If the organization employs an activity based costing system, the cost per unit for the product described for the coming year would:

- A. $6.08
- B. $6.30
- C. $6.00
- D. $6.21

A. This answer assumes the incorrect number of machine hours.

B. Under the ABC method we will still have $5.15 in direct materials and direct labor, but we will need to calculate the overhead again. In ABC, there are 4 calculations we will need to make as part of the overhead allocation. These are below per activity: 1. Material Handling - $.12 per part ($720,000 / 6,000,000) and there are 5 parts per unit. This is $.60. 2. Setup Costs - $420 per setup ($315,000 / 750). There are 2 setups per batch, for a cost of $840 for each batch of 5,000 units. This is $.168 per unit ($840 / 5,000). 3. Machining Costs - $18 per machine hour. There are 80 machine hours per batch, giving us $1,440 per batch of 5,000 units, or $.288 per unit. 4. Quality Control - $450 per batch. This is $.09 per unit ($450 / 5,000). In total, these costs add up to $6.30.

C. This answer assumes that that there is only one setup for each batch and the machine hours were therefore only 80.

D. This answer uses only one setup per batch instead of two.
**Question 128 - CIA 593 IV-6 - Process Costing**

A manufacturing firm may experience both normal and abnormal spoilage in its operations. The costs of both normal and abnormal spoilage are accounted for in the accounting records. The costs associated with any abnormal spoilage are

A. Charged to the manufacturing overhead control account.
B. Charged to a special abnormal spoilage loss account.
C. Allocated between the units transferred to finished goods and those remaining in work-in-process.
D. Assigned to the good units transferred to finished goods.

A. This answer is incorrect. This method could be used for normal spoilage, but only if normal spoilage is included in overhead in the calculation of the overhead allocation rate.

B. The costs associated with abnormally spoiled units are charged to the income statement in the period of the spoilage. This is itemized in a separate line on the income statement.

C. This answer is incorrect.

D. This is the treatment for the costs associated with normal spoilage.

---

**Question 129 - CIA 595 III-94 - General Overhead Allocation**

A company allocates overhead to jobs in process using direct labor costs, raw material costs, and machine hours. The overhead application rates for the current year are

- 100% of direct labor
- 20% of raw materials
- $117 per machine hour

A particular production run incurred the following costs:

- Direct labor: $8,000
- Raw materials: $2,000
- A total of 140 machine hours were required for the production run.

What is the total cost that would be charged to the production run?

A. $18,000
B. $34,780
C. $18,400
D. None of the answers are correct.

A. This answer does not include the overhead costs that are allocated based on raw materials and machine hours.

B. This question is actually fairly simple and just requires that we make three allocations of overhead. There is overhead allocated based on direct labor, raw materials and machine hours. These calculations, in this order, are: $8,000 * 100% = $8,000; $2,000 * 20% = $400; 140 * $117 = $16,380. These total $24,780, but this is not the correct answer. This is the amount of overhead, but the question asks for total costs. This means that we need to include direct materials ($8,000) and direct labor ($2,000). The total costs are $34,780.

C. This answer does not include the costs allocated based on machine hours.

D. The correct choice is given.
**Question 130 - CMA 1273 4-1 - Variable and Absorption Costing**

Which of the following statements is true for a firm that uses variable costing?

A. Product costs include variable administrative costs.
B. Profits fluctuate with sales.
C. An idle facility variation is calculated.
D. The cost of a unit of product changes because of changes in number of units manufactured.

A. Variable administrative costs are not included as a product cost under either the variable or absorption methods.

**B. Under variable costing, the profits that the company has will fluctuate with the level of sales.**

C. This is not done under variable costing.

D. Because only variable costs are included in the cost of the product under variable costing, the cost of a unit will not change as production levels change.

**Question 131 - CMA 1293 3-15 - General Overhead Allocation**

Multiple or departmental overhead rates are considered preferable to a single or plantwide overhead rate when

A. Individual cost drivers cannot accurately be determined with respect to cause-and-effect relationships.
B. Cost drivers, such as direct labor, are the same over all processes.
C. Various products are manufactured that do not pass through the same departments or use the same manufacturing techniques.
D. Manufacturing is limited to a single product flowing through identical departments in a fixed sequence.

A. If it is not possible to determine the cause and effect relationship between cost drivers and the cost objects, then departmental rates may not be accurate or cost efficient

B. When the cost drivers are the same in all processes, then only one allocation basis is needed.

**C. When there are different products that use resources in the departments at different rates, departmental overhead rates are preferable to a single factory wide rate.**

D. When there is only one product produced, the company can use one allocation rate since all of the costs will go to that product.

**Question 132 - CIA 1196 III-84 - Other Costing Systems**

A manufacturing company has a continuous flow cycle that employs simplified activities in a short manufacturing cycle. The company produces a single product with a minimal defect rate. The product costing system that this company would most likely use for its manufacturing operations is

A. Process costing.
B. Activity-based costing.
C. Operation costing.

(c) HOCK international, page 75
D. Job-order costing.

**A. Process costing is used in a mass production process.**

B. Because only a single product is produced, there is no need to use activity-based costing.

C. Because only a single product is produced, there is no need to use operation costing, which is simply a combination of activity-based costing and job-order costing.

D. Because only a single product is produced, there is no need to use job-order costing.

---

**Question 133 - CMA 692 3-4 - Process Costing**

Marlan Manufacturing produces a product that passes through two departments. The units from the molding department are completed in the assembly department. The units are completed in assembly by adding the remaining direct materials when the units are 60% complete with respect to conversion costs. Conversion costs are added proportionately in assembly. The production activity in the assembly department for the current month is presented as follows. Marlan uses the FIFO (first-in, first-out) inventory method in its process cost system.

- Beginning inventory units (25% complete with respect to conversion costs): 8,000
- Units transferred in from the molding department during the month: 42,000
- Units to account for: 50,000
- Units completed and transferred to finished goods inventory: 38,000
- Ending inventory units (40% complete with respect to conversion costs): 12,000
- Units accounted for: 50,000

The equivalent units in the assembly department for conversion costs for the current month are

A. 42,800 units.
B. 43,200 units.
C. 34,800 units.
D. 40,800 units.

A. This is the answer if the weighted average method had been used.

B. This answer is incorrect.

C. This answer is incorrect.

D. Because the company uses the FIFO method, there are three numbers that we need to add together to calculate equivalent units (EUP): 1) the number of EUP to finish beginning WIP + the number of units started and completed + the number of EUP to start ending WIP. Conversion costs are added throughout the process. There were 8,000 units in beginning WIP, which were 25% complete. This means that 75% of the work, or 6,000 EUP, was performed this period. The number of units started and completed was 30,000 (38,000 units transferred out - the 8,000 units in beginning WIP). There were 12,000 units in ending WIP and these units were 40% complete so that means that 4,800 EUP were done on the ending WIP. Adding these numbers together, we get 40,800 EUP of materials.

---

**Question 134 - CMA 694 3-25 - General Overhead Allocation**

(c) HOCK international, page 76
Zeta Company is preparing its annual profit plan. As part of its analysis of the profitability of individual products, the controller estimates the amount of overhead that should be allocated to the individual product lines from the information given as follows:

<table>
<thead>
<tr>
<th></th>
<th>Wall Mirrors</th>
<th>Specialty Windows</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units produced</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Material moves per product line</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>Direct labor hours per unit</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Budgeted materials handling costs</td>
<td>$50,000</td>
<td></td>
</tr>
</tbody>
</table>

Under a costing system that allocates overhead on the basis of direct labor hours, the materials handling costs allocated to one unit of wall mirrors would be

A. $500  
B. $5,000  
C. $1,000  
D. $2,000

A. This would be the amount allocated if the materials handling costs were allocated on the basis of material moves.

B. This answer is incorrect.

C. The materials handling costs are allocated on the basis of direct labor hours. In total there are 10,000 direct labor hours (a total of 50 units made, each requiring 200 direct labor hours) so this gives a rate of $5 per direct labor hour. Each wall mirror requires 200 hours, and at a rate of $5 per hour, this is a total materials handling charge of $1,000.

D. This is an allocation of all of the materials handling costs to the wall mirrors.

---

**Question 135 - CMA 690 4-4 - General Overhead Allocation**

Alex Company had the following inventories at the beginning and end of the month of January.

<table>
<thead>
<tr>
<th></th>
<th>January 1</th>
<th>January 31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finished goods</td>
<td>$125,000</td>
<td>$117,000</td>
</tr>
<tr>
<td>Work-in-process</td>
<td>235,000</td>
<td>251,000</td>
</tr>
<tr>
<td>Direct materials</td>
<td>134,000</td>
<td>124,000</td>
</tr>
</tbody>
</table>

The following additional manufacturing data were available for the month of January:

- Direct materials purchased $189,000  
- Purchase returns and allowances $1,000  
- Transportation-in $3,000  
- Direct labor $300,000  
- Actual factory overhead $175,000

Alex Company applies factory overhead at a rate of 60% of direct labor cost, and any overapplied or underapplied factory overhead is deferred until the end of the year, December 31.

Alex Company’s cost of goods sold for January was

A. $657,000.  
B. $673,000.  
C. $697,000.

(c) HOCK international, page 77
A. This answer is incorrect.

B. The cost of goods sold can be calculated as the beginning finished goods plus the cost of goods transferred to finished goods minus the ending finished goods. This is $125,000 + $665,000 - $117,000 and totals $673,000. To calculate the cost of goods transferred to finished goods (which is the same as the cost of goods manufactured), we simply take the total cost of manufacturing and adjust it for the change in work-in-progress. Total manufacturing cost is made up of prime costs plus manufacturing overheads applied. The prime costs are direct materials and direct labor. We are told that the direct labor was $300,000, but will need to calculate the direct materials for January. The beginning direct materials was $134,000. During the period, they purchased $189,000 of direct materials and also incurred $3,000 in transportation in costs. However, they also returned $1,000 of direct materials during the period. Adding these together we can calculate the total direct materials that they had during January as $325,000. Since there was an ending inventory of $124,000, they must have used $201,000 of direct materials during the period. Added to the direct labor, the total prime costs were $501,000. We do not worry about the raw materials and finished goods inventory numbers because the amounts in those accounts were not related to the current period. Overhead is applied as 60% of direct labor, which totals $180,000 ($300,000 * 60%). Adding the prime costs and the overhead together, we get $681,000. Work-in-progress increased during the period by $16,000. This means that $16,000 of the work performed during the period ended up in work-in-progress and not finished goods so this amount needs to be subtracted from cost of goods manufactured. The cost of goods transferred to finished goods is $665,000. Finished goods inventory decreased by $8,000 during January. It means that this amount of 'old' inventory was sold in excess to the finished goods manufactured this period. Adding these two numbers together we will get the amount of cost of goods sold: $673,000 ($665,000 + $8,000).

C. This answer is incorrect.

D. This answer is incorrect.

Question 136 - CIA 585 IV-11 - Joint and By-Products

A company produces three main joint products and one by-product. The by-product's relative sales value is quite low compared with that of the main products. The preferable accounting for the by-product's net realizable value is as

A. Revenue in the period it is sold.
B. An addition to the revenues of the other products allocated on the basis of their respective net realizable values.
C. A separate net realizable value upon which to allocate some of the common costs.
D. A reduction in the common cost to be allocated to the three main products.

A. Usually the sales revenue from the sale of a by-product is accounted for as a reduction of the common costs that are allocated to the other products. It is possible that this method would be followed, but it is not the preferred method. This is because there is great cost in accounting for it this way, but very minimal benefit.

B. Usually the sales revenue from the sale of a by-product is accounted for as a reduction of the common costs that are allocated to the other products.

C. Common costs are usually not allocated to by-products.

D. Usually the sales revenue from the sale of a by-product is accounted for as a reduction of the common costs that are allocated to the other products.
Gregg Industries manufactures molded chairs. The three models of molded chairs, which are all variations of the same design, are Standard (can be stacked), Deluxe (with arms), and Executive (with arms and padding). The company uses batch manufacturing and has an operation costing system.

Gregg has an extrusion operation and subsequent operations to form, trim, and finish the chairs. Plastic sheets are produced by the extrusion operation, some of which are sold directly to other manufacturers. During the forming operation, the remaining plastic sheets are molded into chair seats and the legs are added; the standard model is sold after this operation. During the trim operation, the arms are added to the deluxe and executive models and the chair edges are smoothed. Only the executive model enters the finish operation where the padding is added. All of the units produced are subject to the same steps within each operation, and no units are in process at the end of the period. The units of production and direct materials costs were as follows:

<table>
<thead>
<tr>
<th>Units Produced</th>
<th>Extrusion Materials</th>
<th>Form Materials</th>
<th>Trim Materials</th>
<th>Finish Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic sheets 5,000</td>
<td>$ 60,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard model 6,000</td>
<td></td>
<td>72,000</td>
<td>24,000</td>
<td></td>
</tr>
<tr>
<td>Deluxe model 3,000</td>
<td></td>
<td>36,000</td>
<td>12,000</td>
<td>$9,000</td>
</tr>
<tr>
<td>Executive model 2,000</td>
<td></td>
<td>24,000</td>
<td>8,000</td>
<td>6,000</td>
</tr>
<tr>
<td></td>
<td>16,000</td>
<td>$192,000</td>
<td>$44,000</td>
<td>$15,000</td>
</tr>
</tbody>
</table>

Manufacturing costs applied during the month were:

<table>
<thead>
<tr>
<th>Extrusion Operation</th>
<th>Form Operation</th>
<th>Trim Operation</th>
<th>Finish Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct labor</td>
<td>$152,000</td>
<td>$60,000</td>
<td>$30,000</td>
</tr>
<tr>
<td>Factory overhead</td>
<td>240,000</td>
<td>72,000</td>
<td>39,000</td>
</tr>
</tbody>
</table>

Assume that 1,000 units of the deluxe model remained in work-in-process at the end of the period and that these units were 100% complete as to materials and 60% complete as to trim operation conversion. What is the balance of work-in-process?

A. $69,000  
B. $64,500  
C. $42,000  
D. $69,300

A. This is the total conversion cost of the trim operation.

B. The 3,000 Deluxe units are 100% complete as to materials, 100% complete as to Extrusion Operation costs, and 100% complete as to Form Operation costs. However, 1,000 of the 3,000 units are only 60% complete as to Trim Operation costs.

The costs per unit for the Deluxe model are as follows:

Materials (all units are 100% complete as to materials):
Extrusion materials: Total costs $36,000 / 3,000 units produced = $12 per unit  
Form materials: Total costs $12,000 / 3,000 units produced = $4 per unit  
Trim materials: Total costs $9,000 / 3,000 units produced = $3 per unit

Conversion costs:
In calculating conversion costs per unit, we must use the total costs of each operation (for all models) and the total number of units of all models that went through each operation, because we do not have the costs broken down by model.
Extrusion operation: Total costs $392,000 to produce 16,000 units = $24.50 per unit
Forming operation: Total costs $132,000 to produce 11,000 units = $12.00 per unit
Trim operation: Total costs $69,000 to produce 4,600 units (calculated as follows: 2,000 complete Executive units + 2,000 complete Deluxe units + 600 Deluxe equivalent units [60% of 1,000 partially complete Deluxe units]) = $69,000 / 4,600 units = $15.00 per equivalent unit.

Total costs in EWIP inventory for 1,000 Deluxe units that are 100% complete as to materials, 100% complete as to extrusion and form operations, and 60% complete as to trim operation are:

C. This is the total conversion cost of the finish operation.

D. This answer results from calculating the per unit conversion cost in the Trim operation by dividing the total costs of $69,000 by the 5,000 units of Deluxe chairs worked on and then multiplying the per unit conversion cost by the 1,000 units in ending WIP inventory. However, the 1,000 units in ending WIP inventory were only 60% complete as to Trim operations. Therefore, the number of units in the divisor for the calculation of per unit cost is incorrect, and it is incorrect to multiply that per unit Trim operations cost by 1,000 units to calculate the ending WIP inventory.

Question 138 - CMA 690 4-3 - General Overhead Allocation

Alex Company had the following inventories at the beginning and end of the month of January.

<table>
<thead>
<tr>
<th></th>
<th>January 1</th>
<th>January 31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finished goods</td>
<td>$125,000</td>
<td>$117,000</td>
</tr>
<tr>
<td>Work-in-process</td>
<td>235,000</td>
<td>251,000</td>
</tr>
<tr>
<td>Direct materials</td>
<td>134,000</td>
<td>124,000</td>
</tr>
</tbody>
</table>

The following additional manufacturing data were available for the month of January:

- Direct materials purchased: $189,000
- Purchase returns and allowances: 1,000
- Transportation-in: 3,000
- Direct labor: 300,000
- Actual factory overhead: 175,000

Alex Company applies factory overhead at a rate of 60% of direct labor cost, and any overapplied or underapplied factory overhead is deferred until the end of the year, December 31.

Alex Company's cost of goods manufactured for January was

A. $665,000.
B. $657,000.
C. $681,000.
D. $673,000.

A. To calculate the cost of goods transferred to finished goods (which is the same as the cost of goods manufactured), we simply take the total cost of manufacturing and adjust it for the change in work-in-progress. Total manufacturing cost is made up of prime costs plus manufacturing overheads applied. The prime costs are direct materials and direct labor. We are told that the direct labor was $300,000, but will need to calculate the direct materials for January. The beginning direct materials was $134,000. During the period, they purchased $189,000 of direct materials and also incurred $3,000 in transportation in costs.
However, they also returned $1,000 of direct materials during the period. Adding these together we can calculate the total direct materials that they had during January as $325,000. Since there was an ending inventory of $124,000, they must have used $201,000 of direct materials during the period. Added to the direct labor, the total prime costs were $501,000. We do not worry about the raw materials and finished goods inventory numbers because the amounts in those accounts were not related to the current period. Overhead is applied as 60% of direct labor, which totals $180,000 ($300,000 * 60%). Adding the prime costs and the overhead together, we get $681,000. Work-in-progress increased during the period by $16,000. This means that $16,000 of the work performed during the period ended up in work-in-progress and not finished goods so this amount needs to be subtracted from cost of goods manufactured. The cost of goods transferred to finished goods is $665,000.

B. This answer is incorrect.

C. This is the total cost of manufacturing.

D. This is the cost of goods sold.

Question 139 - CIA 1188 IV-5 - Other Costing Systems

A shipbuilding company, employing 30 workers, constructs custom-built yachts. Which of the following is an appropriate product-costing method for this operation?

A. Process costing.
B. Variable cost transfer pricing.
C. Job-order costing.
D. Step-down allocation of costs.

A. Process costing is used when the units produced are similar.

B. Variable cost transfer pricing is used when transferring the product between different parts of the same company. It is not used as a product-costing method.

C. Job order costing is used when the items produced are unique from each other, as in the case of anything hand-made.

D. The step-down allocation of costs is the process of allocating service department costs. It is not a full product-costing method.

Question 140 - CMA 689 4-10 - Cost Terminology and Classifications

Hitchcock Industries has developed two new products but has only enough plant capacity to introduce one of these products this year. The company controller has gathered the following data to assist management in deciding which product should be selected for production. Hitchcock’s fixed overhead includes proportional rent and utilities, machinery depreciation, and supervisory salaries. Selling and administrative expenses are not allocated to products.

<table>
<thead>
<tr>
<th>Cost per unit:</th>
<th>Power Drill</th>
<th>Power Saw</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw materials</td>
<td>$22.00</td>
<td>$18.00</td>
</tr>
<tr>
<td>Machining at $12/hr.</td>
<td>9.00</td>
<td>7.50</td>
</tr>
<tr>
<td>Assembly at $10/hr.</td>
<td>15.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Variable O/H at $8/hr.</td>
<td>18.00</td>
<td>9.00</td>
</tr>
</tbody>
</table>

(c) HOCK international, page 81
Fixed O/H at $4/hr. 
9.00 4.50

Total unit cost: $73.00 $44.00

Suggested selling price $88.98 $49.95
Actual research and development costs $180,000 $95,000
Proposed advertising and promotion costs $300,000 $250,000

The total overhead cost of $13.50 for Hitchcock's power saw is a

A. Sunk cost.
B. Mixed cost.
C. Carrying cost.
D. Committed cost.

A. A sunk cost is a cost that has already been spent and cannot be changed by any current or future decisions.
B. Because there are both fixed and variable overhead costs, the total overhead cost is a mixed cost.
C. A carrying cost is the cost of keeping inventory.
D. A committed cost is a cost that has not already been spent, but the company is committed to the future expenditure.

---

**Question 141 - CMA 678 4-11 - Cost Terminology and Classifications**

Discretionary costs are

A. Unaffected by current managerial decisions.
B. Governed mainly by past decisions that established the current levels of operating and organizational capacity and that only change slowly in response to small changes in capacity.
C. Those management decides to incur in the current period to enable the company to achieve objectives other than the filling of orders placed by customers.
D. Likely to respond to the amount of attention devoted to them by a specified manager.

A. This is the definition of a sunk cost.
B. This is the definition of a controllable cost.
C. Discretionary costs are costs that management may choose to incur or not incur without a substantial impact on the business. Advertising is often given as an example of a discretionary cost. There is no direct correlation between the level of activity and discretionary costs.
D. This is the definition of a controllable cost.

---

**Question 142 - CIA 1192 IV-6 - Process Costing**

The following data pertain to a company's cracking-department operations in December.

<table>
<thead>
<tr>
<th></th>
<th>Units</th>
<th>Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-in-process, December 1</td>
<td>20,000</td>
<td>50%</td>
</tr>
<tr>
<td>Units started</td>
<td>170,000</td>
<td></td>
</tr>
<tr>
<td>Units completed and transferred to the distilling department</td>
<td>180,000</td>
<td></td>
</tr>
</tbody>
</table>
Work-in-process, December 31  10,000  50%

Materials are added at the beginning of the process and conversion costs are incurred uniformly throughout the process. Assuming use of the FIFO method of process costing, the equivalent units of conversion performed during December were

A. 175,000 equivalent units.  
B. 170,000 equivalent units.  
C. 180,000 equivalent units.  
D. 185,000 equivalent units.

A. Under the FIFO method we keep the work that was performed last month that is in BWIP separate from that work done this month. So, to calculate the EUP of conversion costs in December, we need to calculate the number of EUP to complete BWIP, the number of EUP to start EWIP and the number of units started and completed. There were 20,000 units in BWIP that were 50% complete. This means that 50% of the work, or 10,000 EUP, was done in December. There are 10,000 units in EWIP that were 50% complete, so 5,000 EUP was done during December. In addition, there were 160,000 units started and completed (180,000 units completed minus the 20,000 units in BWIP that were only completed, not started and completed during the period). In total, this is 175,000 EUP of conversion costs.

B. This is the number of EUP of material during December.

C. This is the number of units completed during the period.

D. This is the number of EUP of conversion costs under the weighted average method.

---

**Question 143** - CMA 696 3-2 - General Overhead Allocation

Nash Glassworks Company has budgeted fixed factory overhead of $100,000 per month. The company uses absorption costing for both external and internal financial reporting purposes. Budgeted factory overhead rates for cost allocations for the month of April using alternative unit output denominator levels are shown below.

<table>
<thead>
<tr>
<th>Capacity Levels</th>
<th>Budgeted Denominator Level (units of output)</th>
<th>Budgeted Overhead Cost Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theoretical</td>
<td>1,500,000</td>
<td>$.0667</td>
</tr>
<tr>
<td>Practical</td>
<td>1,250,000</td>
<td>.0800</td>
</tr>
<tr>
<td>Normal</td>
<td>775,000</td>
<td>.1290</td>
</tr>
<tr>
<td>Master-budget</td>
<td>800,000</td>
<td>.1250</td>
</tr>
</tbody>
</table>

Actual output for the month of April was 800,000 units of glassware.

The choice of a production volume level as a denominator in the computation of fixed overhead rates can significantly affect reported net income. Which one of the following statements is correct for Nash Glassworks Company if its beginning inventory is zero, production exceeded sales, and variances are adjustments to cost of goods sold?

A. Master-budget capacity as the denominator level will result in a lower net income amount than if theoretical capacity is chosen.
B. Practical capacity as the denominator level will result in a lower net income amount than if master-budget capacity is chosen.
C. Normal capacity as the denominator level will result in a lower net income amount than if any other capacity volume is chosen.
D. Practical capacity as the denominator level will result in a higher net income amount than if normal capacity is chosen.

\(\text{(c) HOCK international, page 83}\)
A. Because the master-budget capacity is less than theoretical, the master-budget capacity will allocate more overhead to each unit. This means that there will be more overhead costs in inventory using the master-budget capacity and therefore a higher net income.

B. By using the practical level, a smaller amount of overhead will go to each unit than if the master-budget level is used. Therefore, less overhead will be included in ending inventory at the end of the period. Since there is less overhead on the balance sheet, there will be more overhead on the income statement since variances go to cost of goods sold. More overhead on the income statement will lead to a lower net income.

C. Because the normal capacity has the highest overhead rate, more overhead will be included in inventory using this capacity than any other. Therefore, using normal capacity will lead to a higher income than any of the other methods.

D. Because the practical capacity is higher than the normal capacity, the normal capacity level will lead to higher overhead costs per unit. Therefore, the normal capacity level will lead to more overhead being included in inventory and a higher income than the practical capacity would give.

---

Question 144 - CMA 678 4-10 - Cost Terminology and Classifications

Committed costs are

A. Those management decides to incur in the current period to enable the company to achieve objectives other than the filling of orders placed by customers.
B. Those that fluctuate in total in response to small changes in the rate of use of capacity.
C. Governed mainly by past decisions that established the current levels of operating and organizational capacity and that only change slowly in response to small changes in capacity.
D. Likely to respond to the amount of attention devoted to them by a specified manager.

A. This is the definition of a discretionary cost.
B. This is the definition of a variable cost.
C. Committed costs are costs that the company has already agreed to, but has not yet incurred and paid. Rent and other fixed factory costs are examples of committed costs. Because they are committed they will be very slow in responding to changes in production levels.
D. This is the definition of a controllable cost.

---

Question 145 - CMA 1285 4-14 H2 - Variable and Absorption Costing

Osawa, Inc. planned and actually manufactured 200,000 units of its single product in its first year of operations. Variable manufacturing costs were $30 per unit of product. Planned and actual fixed manufacturing costs were $600,000, and selling and administrative costs totaled $400,000. Osawa sold 120,000 units of product at a selling price of $40 per unit.

Osawa's operating income for the year using variable costing is

A. $440,000
B. $600,000
C. $800,000
D. $200,000

(c) HOCK international, page 84
A. This is the income under the absorption method.

B. This answer is incorrect.

C. This answer is incorrect.

D. Under variable costing, the fixed manufacturing costs are expensed. With a variable cost per unit of $30, there is $10 of contribution per unit. This is in total $1,200,000. Subtracting from this the fixed costs and the selling and administration costs, we get an operating profit of $200,000.

---

**Question 146** - CMA 689 4-24 - Joint and By-Products

Killian Company manufactures two skin care lotions, Liquid Skin and Silken Skin, out of a joint process. The joint (common) costs incurred are $420,000 for a standard production run that generates 180,000 gallons of Liquid Skin and 120,000 gallons of Silken Skin. Liquid Skin sells for $2.40 per gallon, and Silken Skin sells for $3.90 per gallon.

If additional processing costs beyond the split-off point are $1.40 per gallon for Liquid Skin and $.90 per gallon for Silken Skin, the amount of joint cost of each production run allocated to Liquid Skin on a physical-quantity basis is

A. $252,000.
B. $280,000.
C. $168,000.
D. $140,000.

A. In order to allocate the joint costs using the physical-quantity basis, we need to determine the total physical quantity that was produced. There were 180,000 gallons of LS and 120,000 gallons of SS. In total there were 300,000 gallons, of which LS comprised 60%. Therefore, LS should receive 60% of the $420,000 in joint costs. This is $252,000. Note: Because this used the physical quantity as the allocation basis, the information about further processing costs was not necessary since that is used in calculating the Net Realizable Value.

B. This is the amount that would be allocated to SS using the NRV as the allocation basis.

C. This is the amount that would have been allocated to SS using the physical quantity as the allocation basis.

D. This is the amount that would be allocated to LS using the NRV as the allocation basis.

---

**Question 147** - CMA 1286 4-17 - Process Costing

Levittown Company employs a process cost system for its manufacturing operations. All direct materials are added at the beginning of the process and conversion costs are added proportionately. Levittown's production quantity schedule for November is reproduced as follows.

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-in-process on November 1 (60% complete as to conversion costs)</td>
</tr>
<tr>
<td>Units started during November</td>
</tr>
<tr>
<td>Total units to account for</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units completed and transferred out from BI</td>
</tr>
<tr>
<td>Units started and completed during November</td>
</tr>
</tbody>
</table>
Using the weighted-average method, the equivalent units for conversion costs for November are

A. 4,400 units.
B. 4,000 units.
C. 3,800 units.
D. 3,400 units.

A. Under weighted average we need to include the work that was in BWIP as well as the work actually done this period. As a result, the calculation of EUP has only two parts - units completed and start EWIP. The number of units completed was 4,000 and the EUP to start EWIP was 400. This gives a total of 4,400 EUP. The EUP under the weighted average method will never be lower than the EUP for FIFO.

B. This answer is incorrect.
C. This answer is incorrect because it does not include the units in beginning WIP.
D. This answer is incorrect because it does not include the units in beginning WIP.

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**Question 148 - CIA 1196 III-86 - Process Costing**

A company employs a process costing system for its two-department manufacturing operation using the first-in, first-out (FIFO) inventory method. When units are completed in Department 1, they are transferred to Department 2 for completion. Inspection takes place in Department 2 immediately before the direct materials are added, when the process is 70% complete with respect to conversion. The specific identification method is used to account for lost units. The number of defective units (that is, those failing inspection) is usually below the normal tolerance limit of 4% of units inspected. Defective units have minimal value, and the company sells them without any further processing for whatever it can. Generally, the amount collected equals, or slightly exceeds, the transportation cost. A summary of the manufacturing activity for Department 2, in units for the current month, is presented below.

<table>
<thead>
<tr>
<th>Physical Flow (output units)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning inventory (60% complete with respect to conversion)</td>
</tr>
<tr>
<td>Units transferred in from Department 1</td>
</tr>
<tr>
<td>Total units to account for</td>
</tr>
<tr>
<td>Units completed in Department 2 during the month</td>
</tr>
<tr>
<td>Units found to be defective at inspection</td>
</tr>
<tr>
<td>Ending inventory (80% complete with respect to conversion)</td>
</tr>
<tr>
<td>Total units accounted for</td>
</tr>
</tbody>
</table>

The units that failed inspection during the current month would be classified as

A. Normal scrap.
B. Normal waste.
C. Abnormal spoilage.
D. Normal reworked units.

A. These units will be classified as scrap because they can be sold. They are normal because it is within the normal amount of spoilage (up to 4% of inspected units is considered to be normal spoilage).
B. Waste has no value and since these defective units were sold they are considered to be scrap.

C. Because the amount of defective units is less than what is considered normal, this is not abnormal.

D. Because the amount of defective units is less than what is considered normal, this is not abnormal. Also, waste has no value and since these defective units were sold they are considered to be scrap.

Question 149 - CMA 689 4-21 - Joint and By-Products

Killian Company manufactures two skin care lotions, Liquid Skin and Silken Skin, out of a joint process. The joint (common) costs incurred are $420,000 for a standard production run that generates 180,000 gallons of Liquid Skin (LS) and 120,000 gallons of Silken Skin (SS). Liquid Skin sells for $2.40 per gallon, and Silken Skin sells for $3.90 per gallon.

Assuming both products are sold at the split-off point, the amount of joint cost of each production run allocated to Liquid Skin on a net realizable value (NRV) basis is

A. $168,000.
B. $218,400.
C. $201,600.
D. $252,000.

A. This is the amount that would be allocated to LS using the physical quantity as the allocation basis.

B. This is the amount that would be allocated to SS using NRV as the allocation basis.

C. The NRV is calculated as sales price minus costs required to complete and dispose of the item. In order to allocate joint costs using NRV we first need to calculate the NRV for each of the two products. This process is easier in this question because there are no further costs to worry about so their NRV is simply equal to their selling price. There are 180,000 gallons of LS that will sell for $2.40 per gallon, or $432,000 total. There are 120,000 gallons of SL that will sell for $3.90 per gallon, $468,000 in total. Together, these two products have a NRV of $900,000, of which LS represents 48%. Therefore, LS should be allocated 48% of the joint costs. The joint costs were $420,000 and LS’s share of this is $201,600.

D. This is the amount that would be allocated to SS using the physical quantity as the allocation basis.

Question 150 - CMA 1295 3-27 - Cost Terminology and Classifications

A cost that bears an observable and known relationship to a quantifiable activity base is a(n)

A. Engineered cost.
B. Sunk cost.
C. Target cost.
D. Indirect cost.

A. By definition, an engineered cost is one that has an observable and known relationship to an activity base. You could also solve this problem by eliminating the other choices.

B. A sunk cost is a cost that has already been spent and cannot be changed by any current or future activity. A sunk cost does not have an observable or direct relationship to an activity base.

C. A target cost is the goal that the company will try to produce the product for. This does not have any relationship to
an activity base as it is simply management’s goal for the cost of production.

D. An indirect cost is a cost that does not have a clear and observable relationship to an activity base.

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**Question 151** - CIA 1188 IV-6 - Process Costing

A company uses weighted-average process costing for the product it manufactures. All direct materials are added at the beginning of production, and conversion costs are applied evenly during production. The following data apply to the past month:

- Total units in beginning inventory (30% complete as to conversion costs) 1,500
- Total units transferred to finished goods inventory 7,400
- Total units in ending inventory (60% complete as to conversion costs) 2,300

Assuming no spoilage, equivalent units of conversion costs total

A. 8,780.
B. 8,330.
C. 9,700.
D. 9,230.

A. Under the weighted average method, we combine the work and costs that are in BWIP and pretend that they were incurred during the current period. Therefore, to calculate the EUP of conversion costs, we need to calculate the number of units completed during the period and add to that the work that is in EWIP. There were 7,400 units completed and the 2,300 units in EWIP are 60% complete for conversion costs. That means that there are 1,380 EUP in EWIP. Added to the 7,400 units completed gives us 8,780 EUP of conversion costs under the weighted average method.

B. This is the answer if the FIFO method had been used, instead of the weighted average method.

C. This is the number of physical units worked on during the period.

D. This answer includes 30% of the BWIP in addition to including all of the BWIP in the 7,400 units completed. It is double counting the work that had been done last period.

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**Question 152** - CIA 596 III-83 - Service Cost Allocation

Fabricating and Finishing are the two production departments of a manufacturing company. Building Operations and Information Services are service departments that provide support to the two production departments as well as to each other. The company employs departmental overhead rates in the two production departments to allocate the service department costs to the production departments. Square footage is used to allocate building operations, and computer time is used to allocate information services.

The costs of the service departments and relevant operating data for the departments are as follows:

<table>
<thead>
<tr>
<th></th>
<th>Building Operations</th>
<th>Information Services</th>
<th>Fabricating Finishing</th>
</tr>
</thead>
</table>

(c) HOCK international, page 88
Costs:
Labor and benefit costs $200,000 $300,000
Other traceable costs 350,000 900,000
Total $550,000 $1,200,000

Operating Data:
Square feet occupied 5,000 10,000 16,000 24,000
Computer time (in hours) 200 1,200 600

If the company employs the step method to allocate the costs of the service departments and if information services costs are allocated first, then the total amount of service department costs (Information Services and Building Operations) allocated to finishing would be

A. $681,600
B. $730,000
C. $657,000
D. $762,000

A. This answer allocates some of the building operations costs to the information services department.
B. This answer uses the direct method to allocate the costs of both departments.
C. See correct answer.
D. Under the step method we will first allocate the costs of the information service department to all of the other departments (including building operations) and then we will allocate the building operations costs (their own costs plus their share of the information services costs) to the production departments. The information services costs are $1,200,000 and the usage of their services totaled 2,000 computer hours. Of the total information services costs, 10% ($120,000) will be allocated to building operations and 30% ($360,000) to the finishing department. This allocation means that there is now $670,000 of costs in the building operations department that need to be allocated to the production department. The finishing department occupies 60% of the building space that is occupied by production departments (we do not include the information services department since no costs will be allocated to it). The share of the costs that is allocated to the finishing department from building operations is $402,000. This is added to the $360,000 that was allocated to the finishing department from the information services department, giving a total of $762,000 allocated to the finishing department.

Question 153 - CMA 696 3-3 - Process Costing

A sporting goods manufacturer buys wood as a direct material for baseball bats. The Forming Department processes the baseball bats, and the bats are then transferred to the Finishing Department where a sealant is applied. The Forming Department began manufacturing 10,000 "Casey Sluggers" during the month of May. There was no beginning inventory.

Costs for the Forming Department for the month of May were as follows:

<table>
<thead>
<tr>
<th>Costs</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct materials</td>
<td>33,000</td>
</tr>
<tr>
<td>Conversion costs</td>
<td>17,000</td>
</tr>
<tr>
<td>Total</td>
<td>50,000</td>
</tr>
</tbody>
</table>

A total of 8,000 bats were completed and transferred to the Finishing Department; the remaining 2,000 bats were still in the forming process at the end of the month. All of the Forming Department's direct materials were placed in process, but, on average, only 25% of the conversion cost was applied to the ending work-in-process inventory.

> The cost of the units transferred to the Finishing Department is
A. $40,000
B. $42,400
C. $53,000
D. $50,000

A. This is the correct answer if the ending work in progress was 100% complete for conversion costs.

B. The cost per unit for materials is $3.30 and this is easily calculated as there were 10,000 units and the cost of materials was $33,000. There were a total of 8,500 equivalent units of conversion costs (8,000 units were started and completed and the 2,000 units in ending inventory were 25% complete for conversion costs). This gives a cost per equivalent unit of $2. Adding the cost of materials and conversion costs per unit together, the cost per unit is $5.30. There were 8,000 units transferred to finished goods, so this is $42,400.

C. This answer is incorrect because it is larger than all of the costs incurred by the company to date. Since there was no beginning inventory, the amount transferred to finished goods cannot exceed the total costs incurred.

D. This is the total costs incurred. Because there are still some units in the process, we know that not all of the costs have been transferred to the next department.

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**Question 154 - CMA 691 3-48c - Process Costing**

Gregg Industries manufactures molded chairs. The three models of molded chairs, which are all variations of the same design, are Standard (can be stacked), Deluxe (with arms), and Executive (with arms and padding). The company uses batch manufacturing and has an operation costing system.

Gregg has an extrusion operation and subsequent operations to form, trim, and finish the chairs. Plastic sheets are produced by the extrusion operation, some of which are sold directly to other manufacturers. During the forming operation, the remaining plastic sheets are molded into chair seats and the legs are added; the standard model is sold after this operation. During the trim operation, the arms are added to the deluxe and executive models and the chair edges are smoothed. Only the executive model enters the finish operation where the padding is added. All of the units produced are subject to the same steps within each operation, and no units are in process at the end of the period. The units of production and direct materials costs were as follows:

<table>
<thead>
<tr>
<th>Units Produced</th>
<th>Extrusion Materials</th>
<th>Form Materials</th>
<th>Trim Materials</th>
<th>Finish Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic sheets</td>
<td>5,000</td>
<td>$ 60,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard model</td>
<td>6,000</td>
<td>72,000</td>
<td>$24,000</td>
<td></td>
</tr>
<tr>
<td>Deluxe model</td>
<td>3,000</td>
<td>36,000</td>
<td>12,000</td>
<td>$9,000</td>
</tr>
<tr>
<td>Executive model</td>
<td>2,000</td>
<td>24,000</td>
<td>8,000</td>
<td>6,000</td>
</tr>
<tr>
<td></td>
<td>16,000</td>
<td>$192,000</td>
<td>$44,000</td>
<td>$15,000</td>
</tr>
</tbody>
</table>

Manufacturing costs applied during the month were:

<table>
<thead>
<tr>
<th>Extrusion Operation</th>
<th>Form Operation</th>
<th>Trim Operation</th>
<th>Finish Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct labor</td>
<td>$152,000</td>
<td>$60,000</td>
<td>$30,000</td>
</tr>
<tr>
<td>Factory overhead</td>
<td>240,000</td>
<td>72,000</td>
<td>39,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>24,000</td>
</tr>
</tbody>
</table>

The total product cost of the executive model is

A. $192,600
B. $315,000
C. $182,500
D. $207,900

A. The material costs for the executive model are $50,000 ($24,000 + $8,000 + $6,000 + $12,000). Thus, the per
unit cost of materials for the executive model is $25.00 ($50,000 / 2,000 units of deluxe model). Next we need to determine how much labor and overhead was allocated to the executive model at each stage of production. In the extrusion operation, the per unit cost is $24.50 ($392,000 total conversion costs / 16,000 units). In the form operation the unit cost is $12 per unit ($132,000 / 11,000 units). In the trim operation, the per unit cost is $13.80 ($69,000 total conversion costs / 5,000 units). In the finish operation, the per unit cost is $21.00 ($42,000 total conversion costs / 2,000 units). Adding these five numbers together we get the total unit cost of an executive model chair of $96.30. Given that 2,000 executive chairs were produced, this gives a total product cost of $192,600.

B. This is the total product cost of the standard model.

C. This is the total product cost of the plastic sheets.

D. This is the total product cost of the deluxe model.

**Question 155** - CMA 1292 3-2 - Activity Based Costing

In allocating factory service department costs to producing departments, which one of the following items would most likely be used as an activity base?

A. Salary of service department employees.
B. Units of product sold.
C. Units of electric power consumed.
D. Direct materials usage.

A. Salaries of service department employees is not a good allocation basis for anything.
B. The use of units sold is usually not a good allocation basis for anything except shipping costs or sales related costs.
C. The amount of power consumed is the best of the choices given for allocating factory service department costs.
D. The amount of materials consumed does not provide a good basis for allocating factory service department costs.

**Question 156** - CIA 1193 IV-6 - Process Costing

Some units of output failed to pass final inspection at the end of the manufacturing process. The production and inspection supervisors determined that the estimated incremental revenue from reworking the units exceeded the cost of rework. The rework of the defective units was authorized, and the following costs were incurred in reworking the units:

<table>
<thead>
<tr>
<th>Materials requisitioned from stores:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct materials</td>
</tr>
<tr>
<td>Miscellaneous supplies</td>
</tr>
<tr>
<td>Direct labor</td>
</tr>
</tbody>
</table>

The manufacturing overhead budget includes an allowance for rework. The predetermined manufacturing overhead rate is 150% of direct labor cost. The account(s) to be charged and the appropriate charges for the rework cost would be
A. Work-in-process inventory control for $19,000.
B. Factory overhead control for $19,300.
C. Work-in-process inventory control for $5,000 and factory overhead control for $35,300.
D. Factory overhead control for $40,300.

A. The costs of rework should be charged to factory overhead control.

B. The costs of rework should be charged to factory overhead control, but this is not the correct amount that should be charged as it does not include overhead.

C. The costs of rework should be charged to factory overhead control.

D. The costs of rework should be charged to factory overhead control. The amount that should be charged are all of the costs associated with the rework, including overhead. The costs of direct materials, supplies, and labor total $19,300. In addition, overhead is applied at a rate of 150% of direct labor. Direct labor was $14,000, so 150% of this is $21,000. Adding this to the other costs of rework, we get a total of $40,300.

Question 157 - CMA 691 3-17 - Service Cost Allocation

The managers of Rochester Manufacturing are discussing ways to allocate the cost of service departments such as Quality Control and Maintenance to the production departments. To aid them in this discussion, the controller has provided the following information:

<table>
<thead>
<tr>
<th></th>
<th>Quality Control</th>
<th>Maintenance</th>
<th>Machining</th>
<th>Assembly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budgeted overhead costs before allocation</td>
<td>$350,000</td>
<td>$200,000</td>
<td>$400,000</td>
<td>$300,000</td>
</tr>
<tr>
<td>Budgeted machine hours</td>
<td>50,000</td>
<td>50,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Budgeted direct labor hours</td>
<td>25,000</td>
<td>25,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Budgeted hours of service:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality control</td>
<td>7,000</td>
<td>21,000</td>
<td>7,000</td>
<td>35,000</td>
</tr>
<tr>
<td>Maintenance</td>
<td>10,000</td>
<td>18,000</td>
<td>12,000</td>
<td>40,000</td>
</tr>
</tbody>
</table>

Using the direct method, the total amount of overhead allocated to each machine hour at Rochester Manufacturing would be

A. $2.40.
B. $5.25.
C. $15.65.
D. $8.00.

A. This answer is incorrect.
B. This answer is incorrect.

C. Under the direct method the service department costs are not allocated to other service departments. As such, we need to make certain that when we determine the ratio to allocate the costs to the production departments, we do not include the usage by the other service departments. In order to determine the amount of overhead allocated for each machine hour, we will need to allocate the service department costs to the production departments - especially machining. We will then add the machining department's overhead to the overhead allocated to it, and divide this by the number of machine hours. The assembly department used QC 7,000 hours and the machining department used QC 21,000 hours. Thus, machining will get 75% (or $262,500) of the QC costs. Assembly used the maintenance department a total of 12,000 hours and machining used the maintenance department for 18,000 hours. Thus, machining will get 60% of the maintenance costs (or $120,000). In total, therefore, the machining department received $382,500 from the service departments. Adding to this the $400,000 of overhead that the machining department had itself, there is $782,500 that needs
to be allocated to the 50,000 machine hours. This comes out to a rate of $15.65 per machine hour.

D. This answer is incorrect.

---

**Question 158** - CIA 591 IV-7 - Other Costing Systems

Companies characterized by the production of heterogeneous products will most likely use which of the following methods for the purpose of averaging costs and providing management with unit cost data?

A. Direct costing.
B. Job-order costing.
C. Relevant costing.
D. Process costing.

A. Direct costing includes only the direct costs of production and would not be used by management in unit costing.

**B. Job-order costing would most likely be used in the production of heterogeneous (dissimilar) units.**

C. Relevant costing is not used to provide management cost data. Relevant costing would be related to future decision making.

D. Heterogeneous means dissimilar and in the production of dissimilar products, job-order costing is usually the best choice. Process costing is used in the production of similar products.

---

**Question 159** - CMA 1295 3-16 - Service Cost Allocation

When allocating service department costs to production departments, the method that does not consider different cost behavior patterns is the

A. Single-rate method.
B. Direct method.
C. Step method.
D. Reciprocal method.

**A. When a single rate of overhead allocation is used, it does not take into account the different usage of the service departments by the different production departments. Though this method is simple and easy, it is not very accurate and should only be used if all of the production departments use the service departments equally.**

B. The direct method is able to use different methods of allocating the costs of the service departments to the production departments.

C. The step method is able to use different methods of allocating the costs of the service departments to the production departments.

D. The reciprocal method is able to use different methods of allocating the costs of the service departments to the production departments.

---

**Question 160** - CMA 697 3-7 - Service Cost Allocation

(c) HOCK international, page 93
The Photocopying Department provides photocopy services for both Departments A and B and has prepared its total budget using the following information for next year.

Fixed costs $100,000
Available capacity 4,000,000 pages
Budgeted usage
Department A 1,200,000 pages
Department B 2,400,000 pages
Variable cost $0.03 per page

Assume that the dual-rate cost allocation method is used and the allocation basis is budgeted usage for fixed costs and actual usage for variable costs. How much cost would be allocated to Department A during the year if actual usage for Department A is 1,400,000 pages and actual usage for Department B is 2,100,000 pages?

A. $72,000
B. $42,000
C. $75,333
D. $82,000

A. This is the amount that is allocated to Department B if only a single rate is used.

B. This is the variable cost that is charged to Department A.

C. In the allocation of the fixed costs, Department A will receive 1/3 of the fixed costs since they use 1/3 of the printing services. This is $33,333. In addition to the fixed costs, though, they will also receive a charge of $.03 per page based on their actual usage. Since they printed 1,400,000 pages, this variable charge is $42,000. So, in total Department A will be charged $75,333.

D. This answer allocates the fixed costs based on the actual quantities printed instead of the budgeted pages.

---

**Question 161 - CMA 1290 H1 - Variable and Absorption Costing**

Valyn Corporation employs an absorption costing system for internal reporting purposes; however, the company is considering using variable costing. Data regarding Valyn’s planned and actual operations for the calendar year are presented below.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Planned</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning finished goods inventory</td>
<td>35,000</td>
<td>35,000</td>
</tr>
<tr>
<td>Sales</td>
<td>140,000</td>
<td>125,000</td>
</tr>
<tr>
<td>Production</td>
<td>140,000</td>
<td>130,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Costs</th>
<th>Incurred Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Per Unit</td>
<td>Total</td>
</tr>
<tr>
<td>Direct materials</td>
<td>$12.00</td>
</tr>
<tr>
<td>Direct labor</td>
<td>9.00</td>
</tr>
<tr>
<td>Variable manufacturing overhead</td>
<td>4.00</td>
</tr>
<tr>
<td>Fixed manufacturing overhead</td>
<td>5.00</td>
</tr>
<tr>
<td>Variable selling expenses</td>
<td>8.00</td>
</tr>
<tr>
<td>Fixed selling expenses</td>
<td>7.00</td>
</tr>
<tr>
<td>Variable administrative expenses</td>
<td>2.00</td>
</tr>
<tr>
<td>Fixed administrative expenses</td>
<td>3.00</td>
</tr>
</tbody>
</table>

(c) HOCK international, page 94
The planned per unit cost figures shown in the above schedule were based on Valyn producing and selling 140,000 units. Valyn uses a predetermined manufacturing overhead rate for applying manufacturing overhead to its product; thus, a combined manufacturing overhead rate of $9.00 per unit was employed for absorption costing purposes. Any over- or underapplied manufacturing overhead is closed to the Cost of Goods Sold account at the end of the reporting year.

The beginning finished goods inventory for absorption costing purposes was valued at the previous year’s planned unit manufacturing cost, which was the same as the current year’s planned unit manufacturing cost. There are no work-in-process inventories at either the beginning or the end of the year. The planned and actual unit selling price for the current year was $70.00 per unit.

The value of Valyn Corporation's actual ending finished goods inventory on the absorption costing basis was

A. $900,000  
B. $1,200,000  
C. $1,220,000  
D. $1,350,000

A. This answer is incorrect.

**B. Under absorption costing, the per unit cost of inventory includes all production costs - both fixed and variable. As such, the per unit cost for Valyn is $30 (this is made up of direct materials, direct labor, variable overhead and fixed overhead per unit). At the end of the period there were 40,000 units in ending inventory - there were 35,000 at the start of the period and they produced 5,000 more units than were sold during the period. This gives an ending finished goods inventory of $1,200,000.**

C. This answer is incorrect.

D. This answer is incorrect.

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**Question 162 - CMA 696 3-1 - General Overhead Allocation**

Nash Glassworks Company has budgeted fixed factory overhead of $100,000 per month. The company uses absorption costing for both external and internal financial reporting purposes. Budgeted factory overhead rates for cost allocations for the month of April using alternative unit output denominator levels are shown below.

<table>
<thead>
<tr>
<th>Capacity Levels</th>
<th>Budgeted Denominator Level (units of output)</th>
<th>Budgeted Overhead Cost Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theoretical</td>
<td>1,500,000</td>
<td>$.0667</td>
</tr>
<tr>
<td>Practical</td>
<td>1,250,000</td>
<td>.0800</td>
</tr>
<tr>
<td>Normal</td>
<td>775,000</td>
<td>.1290</td>
</tr>
<tr>
<td>Master-budget</td>
<td>800,000</td>
<td>.1250</td>
</tr>
</tbody>
</table>

Actual output for the month of April was 800,000 units of glassware.

When Nash Glassworks Company allocates fixed costs, management will select a capacity level to use as the denominator volume. All of the following would be appropriate as the capacity level that approximates actual volume levels except

A. Master-budget capacity.  
B. Normal capacity.
C. Expected annual activity.
D. Theoretical capacity.

A. This is the expected level of output for the year so this would approximate the actual volume.

B. Normal capacity is the long-term average, so this would approximate the actual volume.

C. Expected annual activity would essentially be the same as the master budget level and this is would approximate the actual volume.

D. Theoretical capacity is the absolute maximum that can be produced. This would not approximate the actual volume levels.

**Question 163 - CMA 1286 H1 - Variable and Absorption Costing**

Presented are Valenz Company’s records for the current fiscal year ended November 30:

Direct materials used $300,000
Direct labor 100,000
Variable factory overhead 50,000
Fixed factory overhead 80,000
Selling and admin. costs-variable 40,000
Selling and admin. costs-fixed 20,000

Using absorption (full) costing, inventoriable costs are

A. $530,000
B. $450,000
C. $400,000
D. $590,000

**A. Under the absorption costing method, all costs of production - variable and fixed - are included in inventory. Therefore, the costs that can be inventoried are: direct materials ($300,000), direct labor ($100,000), variable factory overhead ($50,000) and fixed factory overhead ($80,000). This is a total of $530,000.**

B. This answer does not include the fixed factory overhead. Under absorption costing all factory overheads are allocated to the units and inventoried.

C. This answer does not include any of the factory overhead. Under absorption costing all factory overheads are allocated to the units and inventoried.

D. This answer includes all of the selling and administration costs. Under absorption costing, only the costs of production are inventoried.

**Question 164 - CMA 695 3-6 - Process Costing**

Kimbeth Manufacturing uses a process cost system to manufacture Dust Density Sensors for the mining industry. The following information pertains to operations for the month of May.

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning work-in-process inventory, May 1</td>
</tr>
</tbody>
</table>

(c) HOCK international, page 96
**Started in production during May** 100,000
**Completed production during May** 92,000
**Ending work-in-process inventory, May 31** 24,000

The beginning inventory was 60% complete for materials and 20% complete for conversion costs. The ending inventory was 90% complete for materials and 40% complete for conversion costs.

Costs pertaining to the month of May are as follows:
- Beginning inventory costs are materials, $54,560; direct labor, $20,320; and factory overhead, $15,240.
- Costs incurred during May are materials used, $468,000; direct labor, $182,880; and factory overhead, $391,160.

Using the weighted-average method, the equivalent unit cost of materials for May is:

A. $4.50
B. $4.12
C. $4.60
D. $5.02

A. This is the answer when the FIFO method is used.
B. This answer does not include the costs of materials that were in BWIP.

C. Under the weighted average method to calculate the equivalent units, we simply need to add together the number of units completed and the number of EUP that were done in order to start the EWIP. In this question 92,000 units were completed and the 24,000 units in EWIP are 90% complete for materials, giving us 21,600 EUP in EWIP. This gives a total of 113,600 EUP of materials for the period. The total costs for materials under the weighted average method will include the costs used during the period ($468,000) as well as the costs of the materials in BWIP ($54,560). The total material cost is $522,560 and this is divided by the 113,600 EUP giving us a cost per unit of materials of $4.60.

D. This answer is incorrect

---

**Question 165 - CMA 685 5-1 - Cost Terminology and Classifications**

A cost that always can be physically traced to a cost objective is

A. A prime cost.
B. An indirect cost.
C. A variable cost.
D. A conversion cost.

A. Prime costs are direct materials and direct labor and they can always be traced to a specific cost objective.

B. Indirect costs are costs that are not able to be directly traced to a cost objective. This is what makes them indirect costs.

C. Not all overhead costs can be traced to a cost objective. For example, variable overhead needs to be applied to all of the units produced and is not able to be traced.

D. Conversion costs are direct labor and overhead. Overheads are not able to be traced to cost objects and must be applied to them.
Madtack Company's beginning and ending inventories for the month of November are:

<table>
<thead>
<tr>
<th></th>
<th>November 1</th>
<th>November 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct materials</td>
<td>$67,000</td>
<td>$62,000</td>
</tr>
<tr>
<td>Work-in-process</td>
<td>145,000</td>
<td>171,000</td>
</tr>
<tr>
<td>Finished goods</td>
<td>85,000</td>
<td>78,000</td>
</tr>
</tbody>
</table>

Production data for the month of November:

- Direct labor: $200,000
- Actual factory overhead: $132,000
- Direct materials purchased: $163,000
- Transportation in: $4,000
- Purchase returns and allowances: $2,000

Madtack uses one factory overhead control account and charges factory overhead to production at 70% of direct labor cost. The company does not formally recognize over/underapplied overhead until year-end.

Madtack Company's cost of goods sold for November is

A. $476,000  
B. $491,000  
C. $484,000  
D. $502,000

A. This answer is incorrect.

B. The cost of goods sold can be calculated as the beginning finished goods plus the cost of goods transferred to finished goods minus the ending finished goods. This is $85,000 + $484,000 - $78,000 and totals $491,000. To calculate the cost of goods transferred to finished goods, we simply take the total cost of manufacturing and adjust it for the change in work-in-progress. Total manufacturing cost is made up of prime costs plus manufacturing overheads applied. The prime costs are direct materials and direct labor. We are told that the direct labor was $200,000, but will need to calculate the direct materials for November. The beginning direct materials was $67,000. During the period, they purchased $163,000 of direct materials and also incurred $4,000 in transportation in costs. However, they also returned $2,000 of direct materials during the period. Adding these together we can calculate the total direct materials that they had during November as $232,000. Since there was an ending inventory of $62,000, they must have used $170,000 of direct materials during the period. Added to the direct labor, the total prime costs were $370,000. We do not worry about the raw materials and finished goods inventory numbers because the amounts in those accounts were not related to the current period. Overhead is applied as 70% of direct labor, which totals $140,000 ($200,000 x 70%). Adding the prime costs and the overhead together, we get $510,000. Work-in-progress increased during the period by $26,000. This means that $26,000 of the work performed during the period ended up in work-in-progress and not finished goods so this amount needs to be subtracted from cost of goods manufactured. The cost of goods transferred to finished goods is $484,000. The beginning balance of finished goods was $85,000. Adding together amount transferred to finished goods and beginning balance we get $569,000. The ending balance of finished goods inventory was $78,000. Subtracting the amount of ending inventory from the amount of finished goods available for sales we will get the amount of COGS: $491,000.

C. This is the cost of goods manufactured.

D. This answer is incorrect.
**Question 167 - CMA 692 3-3 - Process Costing**

Marlan Manufacturing produces a product that passes through two departments. The units from the molding department are completed in the assembly department. The units are completed in assembly by adding the remaining direct materials when the units are 60% complete with respect to conversion costs. Conversion costs are added proportionately in assembly. The production activity in the assembly department for the current month is presented as follows. Marlan uses the FIFO (first-in, first-out) inventory method in its process cost system.

- **Beginning inventory units (25% complete with respect to conversion costs)** 8,000
- **Units transferred in from the molding department during the month** 42,000
- **Units to account for** 50,000
- **Units completed and transferred to finished goods inventory** 38,000
- **Ending inventory units (40% complete with respect to conversion costs)** 12,000
- **Units accounted for** 50,000

The equivalent units in the assembly department for direct materials for the current month are

A. 40,800 units.
B. 30,000 units.
C. 38,000 units.
D. 42,000 units.

A. This is the equivalent units of conversion costs for the period and it does not work for materials because the materials are all added at one time in the process.

B. This is the number of units started and finished.

C. Because the company uses the FIFO method, there are three numbers that we need to add together to calculate equivalent units (EUP): 1) the number of EUP to finish beginning WIP + the number of units started and completed + the number of EUP to start ending WIP. Materials are added to the process when the unit is 60% complete. Because of this, none of the beginning WIP had materials, so materials needed to be added to all of the beginning WIP - that is 8,000 EUP. The number of units started and completed was 30,000 (38,000 units transferred out - the 8,000 units in beginning WIP). And since the ending WIP is not yet to the 60% completion stage, there was no material added to them. Adding these numbers together, we get 38,000 EUP of materials.

D. This is the number of units received during the period.

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**Question 168 - CIA 1193 IV-10 - Variable and Absorption Costing**

The management of a company computes net income using both the absorption and variable costing approaches to product costing. This year, the net income under the variable costing approach was greater than the net income under the absorption costing approach. This difference is most likely the result of

A. Sales volume exceeding production volume.
B. Inflationary effects on overhead costs.
C. An increase in the finished goods inventory.
D. A decrease in the variable marketing expenses.

A. When sales exceed production, this means that inventory decreased. When inventory decreases the income under the variable method is greater than under the absorption method. This is because under the absorption method, some of the prior period’s fixed costs are being expensed as part of cost of goods sold this period.

(c) HOCK international, page 99
B. Inflation will effect both variable and absorption costing in the same manner.

C. An increase in ending inventory would have the opposite effect on income.

D. The treatment of variable marketing expenses is the same under both the variable and absorption methods.

Question 169 - CMA 692 3-6 - General Overhead Allocation

Departmental overhead rates are usually preferred to plant-wide overhead rates when

A. The costs of many service departments are being allocated to each of the various departments.
B. All products passing through the various departments require the same manufacturing effort in each department.
C. Most of the overhead costs are fixed.
D. The activities of each of the various departments in the plant are not homogeneous.

A. Whether or not there are a lot or a few service departments will not impact the use of similar or different overhead rates. If all of the service departments incur costs in the same manner, then one rate is appropriate. If there are only two service departments and their costs are incurred differently, then different rates should be used.

B. If all products require the same manufacturing effort in each department, then a single rate can be used. This will be easier and also provide the same allocation as if different rates were used in each department.

C. Whether the overhead costs are fixed or variable does not impact how the overhead should be allocated.

D. When the activities in the plant are different (not homogenous), it is best to use different overhead allocation rates for each department. This will lead to a more accurate allocation of overhead costs than if the same rate were used for all departments.

Question 170 - CIA 594 III-47 - Activity Based Costing

Which of the following statements about activity-based costing is not true?

A. Activity-based costing differs from traditional costing systems in that products are not cross-subsidized.
B. Activity-based costing is useful for allocating marketing and distribution costs.
C. Activity-based costing is more likely to result in major differences from traditional costing systems if the firm manufactures only one product rather than multiple products.
D. In activity-based costing, cost drivers are what cause costs to be incurred.

A. Cross subsidization occurs when the costs are not properly allocated between products. This is more likely to occur under a traditional system than under ABC because ABC typically uses many more allocations.

B. ABC may be used to allocate marketing and distribution costs.

C. The ABC and traditional methods will be the same when only one product is produced because all overheads will be allocated to that product, no matter what method is used. ABC and traditional will give more different answers the more products that are produced.

D. Cost drivers are what cause costs to be incurred.
Question 171 - CMA 696 3-29 - Cost Terminology and Classifications

Lucy Sportswear manufactures a specialty line of T-shirts using a job-order cost system. During March, the following costs were incurred in completing Job ICU2: direct materials, $13,700; direct labor, $4,800; administrative, $1,400; and selling, $5,600. Factory overhead was applied at the rate of $25 per machine hour, and Job ICU2 required 800 machine hours. If Job ICU2 resulted in 7,000 good shirts, the cost of goods sold per unit would be

A. $6.30  
B. $6.50  
C. $5.70  
D. $5.50

A. This answer includes selling costs.  
B. This answer includes selling and administrative costs.  
C. This answer includes administrative costs.  
D. The cost of goods sold includes direct materials ($13,700), direct labor ($4,800) and overhead ($20,000 = 800 hours * $25 per hour). In total this is $38,500. Allocated to the 7,000 units, this is a cost per unit of $5.50. Administrative and selling costs are not part of the cost of goods sold.

Question 172 - CMA 1290 H6 - Variable and Absorption Costing

Valyn Corporation employs an absorption costing system for internal reporting purposes; however, the company is considering using variable costing. Data regarding Valyn's planned and actual operations for the calendar year are presented below.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Planned</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning finished goods inventory</td>
<td>35,000</td>
<td>35,000</td>
</tr>
<tr>
<td>Sales</td>
<td>140,000</td>
<td>125,000</td>
</tr>
<tr>
<td>Production</td>
<td>140,000</td>
<td>130,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Planned Per Unit</th>
<th>Costs Total</th>
<th>Incurred Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct materials</td>
<td>$12.00</td>
<td>$1,680,000</td>
<td>$1,560,000</td>
</tr>
<tr>
<td>Direct labor</td>
<td>9.00</td>
<td>1,260,000</td>
<td>1,170,000</td>
</tr>
<tr>
<td>Variable manufacturing overhead</td>
<td>4.00</td>
<td>560,000</td>
<td>520,000</td>
</tr>
<tr>
<td>Fixed manufacturing overhead</td>
<td>5.00</td>
<td>700,000</td>
<td>715,000</td>
</tr>
<tr>
<td>Variable selling expenses</td>
<td>8.00</td>
<td>1,120,000</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Fixed selling expenses</td>
<td>7.00</td>
<td>980,000</td>
<td>980,000</td>
</tr>
<tr>
<td>Variable administrative expenses</td>
<td>2.00</td>
<td>280,000</td>
<td>250,000</td>
</tr>
<tr>
<td>Fixed administrative expenses</td>
<td>3.00</td>
<td>420,000</td>
<td>425,000</td>
</tr>
<tr>
<td>Total</td>
<td>$50.00</td>
<td>$7,000,000</td>
<td>$6,620,000</td>
</tr>
</tbody>
</table>

The planned per unit cost figures shown in the above schedule were based on Valyn producing and selling 140,000 units. Valyn uses a predetermined manufacturing overhead rate for applying manufacturing overhead to its product; thus, a combined manufacturing overhead rate of $9.00 per unit was employed for absorption costing purposes. Any over- or underapplied manufacturing overhead is closed to the Cost of Goods Sold account at the end of the reporting year.

The beginning finished goods inventory for absorption costing purposes was valued at the previous year's planned
unit manufacturing cost, which was the same as the current year's planned unit manufacturing cost. There are no work-in-process inventories at either the beginning or the end of the year. The planned and actual unit selling price for the current year was $70.00 per unit.

Valyn Corporation's total fixed costs expensed this year on the absorption costing basis were

A. $2,055,000
B. $2,120,000
C. $2,030,000
D. $2,095,000

A. This answer is incorrect.
B. This answer assumes that the fixed overhead applied was applied only to the units that were sold, and not to the number of units that were produced.
C. This answer is incorrect.
D. For each unit that is sold, $5 of fixed overhead is expensed as cost of goods sold. There were 125,000 units sold, so this is $625,000 in cost of goods sold related to the units sold. Also, all of the fixed selling and fixed administrative costs were expensed during the period because these are non-production costs. This totals $1,405,000. We are also told that under- or overapplied overhead is allocated to cost of goods sold. Therefore, we need to calculate the under- or overapplied overhead. There was a total of $650,000 of fixed overhead applied during the period (130,000 units produced and $5 per unit). The actual fixed overhead was $715,000. This $65,000 of underapplied overhead will be added to cost of goods sold. Adding these four numbers together, we get a total of $2,095,000 of fixed costs that were expensed during the period.

Question 173 - CIA 1194 III-47 H1 - Joint and By-Products

A manufacturing company uses a joint production process that produces three products at the split-off point. Joint production costs during April were $720,000. The company uses the sales value method for allocating joint costs. Product information for April was as follows:

<table>
<thead>
<tr>
<th>Product</th>
<th>R</th>
<th>S</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units produced</td>
<td>2,500</td>
<td>5,000</td>
<td>7,500</td>
</tr>
<tr>
<td>Units sold</td>
<td>2,000</td>
<td>6,000</td>
<td>7,500</td>
</tr>
</tbody>
</table>

Sales prices:
- At the split-off: $100, $80, $20
- After further processing: $150, $115, $30
- Costs to process after split-off: $150,000, $150,000, $100,000

Assume that Product T is treated as a by-product and that the company accounts for the by-product at net realizable value as a reduction of joint cost. Assume also that Products S and T must be processed further before they can be sold. What is the total cost of Product R in April if joint cost allocation is based on net realizable values?

A. $370,370
B. $374,630
C. $220,370
D. $595,000

A. This answer includes additional processing costs.
B. This is the amount of joint costs allocated to S.
C. To start, we need to say that this is a difficult question. It is made difficult first by the fact that the company will not process Product R further, even though we would expect it to. This is because the costs to process further ($150,000) are greater than the incremental revenue that would be gained by processing it further ($125,000; $50 increase in sales price per unit * 2,500 units). Therefore, Product R will not be processed further and its net realizable value (NRV) is $250,000. (NRV is calculated as sales price minus the costs to complete and dispose. Since Product R is not going to be processed further, its NRV is equal to its sales price at split off - $100 per unit.) The NRV of Product S is $425,000 ($115 selling price * 5,000 units produced this period - $150,000 in incremental costs). This means that the total NRV of the 2 joint products is $675,000, of which Product R is 37.037%. Product T is a by-product so the NRV of Product T will be a reduction of the joint costs to be allocated. The NRV of T is $125,000 ($30 per unit price * 7,500 units produced - $100,000 in incremental costs). This reduced the joint costs from $720,000 to $595,000. Of this new joint cost number, 37%, or $220,370, is allocated to Product R.

D. This is the allocable joint costs after the reduction to joint costs for the net realizable value of the by-product.

---

**Question 174 - CMA 1290 H7 - Variable and Absorption Costing**

Valyn Corporation employs an absorption costing system for internal reporting purposes; however, the company is considering using variable costing. Data regarding Valyn's planned and actual operations for the calendar year are presented below.

<table>
<thead>
<tr>
<th></th>
<th>Planned Activity</th>
<th>Actual Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning finished goods inventory</td>
<td>35,000</td>
<td>35,000</td>
</tr>
<tr>
<td>Sales</td>
<td>140,000</td>
<td>125,000</td>
</tr>
<tr>
<td>Production</td>
<td>140,000</td>
<td>130,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Planned Per Unit</th>
<th>Costs Total</th>
<th>Incurred Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct materials</td>
<td>$12.00</td>
<td>$1,680,000</td>
<td>$1,560,000</td>
</tr>
<tr>
<td>Direct labor</td>
<td>9.00</td>
<td>1,260,000</td>
<td>1,170,000</td>
</tr>
<tr>
<td>Variable manufacturing overhead</td>
<td>4.00</td>
<td>560,000</td>
<td>520,000</td>
</tr>
<tr>
<td>Fixed manufacturing overhead</td>
<td>5.00</td>
<td>700,000</td>
<td>715,000</td>
</tr>
<tr>
<td>Variable selling expenses</td>
<td>8.00</td>
<td>1,120,000</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Fixed selling expenses</td>
<td>7.00</td>
<td>980,000</td>
<td>980,000</td>
</tr>
<tr>
<td>Variable administrative expenses</td>
<td>2.00</td>
<td>280,000</td>
<td>250,000</td>
</tr>
<tr>
<td>Fixed administrative expenses</td>
<td>3.00</td>
<td>420,000</td>
<td>425,000</td>
</tr>
<tr>
<td>Total</td>
<td>$50.00</td>
<td>$7,000,000</td>
<td>$6,620,000</td>
</tr>
</tbody>
</table>

The planned per unit cost figures shown in the above schedule were based on Valyn producing and selling 140,000 units. Valyn uses a predetermined manufacturing overhead rate for applying manufacturing overhead to its product; thus, a combined manufacturing overhead rate of $9.00 per unit was employed for absorption costing purposes. Any over- or underapplied manufacturing overhead is closed to the Cost of Goods Sold account at the end of the reporting year.

The beginning finished goods inventory for absorption costing purposes was valued at the previous year's planned unit manufacturing cost, which was the same as the current year's planned unit manufacturing cost. There are no work-in-process inventories at either the beginning or the end of the year. The planned and actual unit selling price for the current year was $70.00 per unit.

Valyn Corporation's actual manufacturing contribution margin calculated on the variable costing basis was

A. $5,625,000

(c) HOCK international, page 103
B. $4,375,000
C. $4,935,000
D. $4,910,000

A. Manufacturing contribution margin is calculated as the selling price minus the variable costs of production. Given that the costs for the previous and current year were the same, we can simply determine the contribution per unit. The per unit sales price is $70 and the per unit variable production costs were $25 (direct labor, direct materials and variable overhead). There was a contribution per unit of $45 and with 125,000 units sold, this gives a total contribution of $5,625,000.

B. This answer is incorrect because it includes the variable costs of selling and administration in the calculation of manufacturing contribution when only variable manufacturing costs should be included.

C. This answer is incorrect.

D. This answer is incorrect.

---

**Question 175 - CIA 1193 IV-5 e - General Overhead Allocation**

A company experienced a machinery breakdown on one of its production lines. As a consequence of the breakdown, manufacturing fell behind schedule, and a decision was made to schedule overtime to return manufacturing to schedule. Which one of the following methods is the proper way to account for the overtime paid to the direct laborers?

A. The overtime hours times the overtime premium would be charged to repair and maintenance expense, and the overtime hours times the straight-time wages would be treated as direct labor.
B. The overtime hours times the overtime premium would be charged to manufacturing overhead, and the overtime hours times the straight-time wages would be treated as direct labor.
C. The overtime hours times the sum of the straight-time wages and overtime premium would be charged entirely to manufacturing overhead.
D. The overtime hours times the sum of the straight-time wages and overtime premium would be treated as direct labor.

A. Nothing should be charged to repair and maintenance as the labor costs are split between direct labor and overhead.

B. Because the incurrence of overtime is not directly related to a specific product or order, the costs related to the overtime should be charged to overhead. However, only the overtime premium (the amount of the salary in excess of the normal wage rate, is a cost related to overtime. The standard wage rate will be charged to direct labor for each hour of overtime that was worked.

C. Only the excess of the overtime wage over the regular wage should be charged to overhead.

D. The amount of the overtime wage that is in excess of the regular wage rate should be charged to overtime.

---

**Question 176 - CIA 594 III-76 - Service Cost Allocation**

A company has two service departments, Power and Maintenance, and two production departments, Machining and Assembly. All costs are regarded as strictly variable. For September the following information is available:

<table>
<thead>
<tr>
<th>Service Departments</th>
<th>Production Departments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>Machining</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Assembly</td>
</tr>
</tbody>
</table>

(c) HOCK international, page 104
If the company uses the direct method for allocating service departments costs to production departments, what dollar amount of Power Department cost will be allocated to the Maintenance Department for September?

A. $12,500
B. $0
C. $15,625
D. $17,544

A. Under the direct method the costs of one service department are not allocated to the other service departments. The costs of the service departments are allocated only to the production departments. Therefore, $0 will be allocated from the power department to the maintenance department.

B. Under the direct method the costs of one service department are not allocated to the other service departments. The costs of the service departments are allocated only to the production departments. Therefore, $0 will be allocated from the power department to the maintenance department.

C. Under the direct method the costs of one service department are not allocated to the other service departments. The costs of the service departments are allocated only to the production departments. Therefore, $0 will be allocated from the power department to the maintenance department.

D. Under the direct method the costs of one service department are not allocated to the other service departments. The costs of the service departments are allocated only to the production departments. Therefore, $0 will be allocated from the power department to the maintenance department.

---

**Question 177 - CMA 695 3-4 - Process Costing**

Kimbeth Manufacturing uses a process cost system to manufacture Dust Density Sensors for the mining industry. The following information pertains to operations for the month of May.

<table>
<thead>
<tr>
<th>Units</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning work-in-process inventory, May 1</td>
<td>16,000</td>
</tr>
<tr>
<td>Started in production during May</td>
<td>100,000</td>
</tr>
<tr>
<td>Completed production during May</td>
<td>92,000</td>
</tr>
<tr>
<td>Ending work-in-process inventory, May 31</td>
<td>24,000</td>
</tr>
</tbody>
</table>

The beginning inventory was 60% complete for materials and 20% complete for conversion costs. The ending inventory was 90% complete for materials and 40% complete for conversion costs.

Costs pertaining to the month of May are as follows:
- Beginning inventory costs are materials, $54,560; direct labor, $20,320; and factory overhead, $15,240.
- Costs incurred during May are materials used, $468,000; direct labor, $182,880; and factory overhead, $391,160.

Using the FIFO method, the equivalent unit conversion cost for May is

A. $5.65
B. $5.83
C. $6.20
D. $6.00
A. This answer uses the EUP under the weighted average method.

B. In order to calculate the cost per unit of conversion costs under FIFO we simply divide the costs incurred for conversion costs this period by the EUP of conversion costs for the period. The EUP for the materials was 98,400 (this is shown in the next paragraph) and the cost for the period was $574,040 (we must add together the costs for direct labor and overhead). This gives a per unit cost for conversion costs of $5.83. Under the FIFO method of process costing we need to make three calculations to determine the EUP. These are: calculate how many EUP were required to finish BWIP, how many units were started and completed and how many EUP were needed to start the EWIP. There were 16,000 units in BWIP and they were 20% complete for conversion costs, meaning that they needed to do 80%, or 12,800 EUP to finish BWIP. There were a total of 76,000 units started and completed during the period (92,000 completed minus the 16,000 in BWIP). There were 24,000 units in EWIP that were 40% complete for conversion costs, meaning that 9,600 EUP of conversion costs had been done on the EWIP. Adding these three numbers together, we get 98,400 units.

C. This answer is incorrect.

D. This is the cost per equivalent unit under the weighted average method.

---

**Question 178 - CMA 695 3-2 - Process Costing**

Kimbeth Manufacturing uses a process cost system to manufacture Dust Density Sensors for the mining industry. The following information pertains to operations for the month of May.

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning work-in-process inventory, May 1</td>
</tr>
<tr>
<td>Started in production during May</td>
</tr>
<tr>
<td>Completed production during May</td>
</tr>
<tr>
<td>Ending work-in-process inventory, May 31</td>
</tr>
</tbody>
</table>

The beginning inventory was 60% complete for materials and 20% complete for conversion costs. The ending inventory was 90% complete for materials and 40% complete for conversion costs.

Costs pertaining to the month of May are as follows:
- Beginning inventory costs are materials, $54,560; direct labor, $20,320; and factory overhead, $15,240.
- Costs incurred during May are materials used, $468,000; direct labor, $182,880; and factory overhead, $391,160.

Using the FIFO method, the equivalent units of production for conversion costs are

A. 95,200 units.
B. 88,800 units.
C. 98,400 units.
D. 85,600 units.

A. This answer is incorrect.

B. This answer does not include the work that was done to start EWIP.

C. Under the FIFO method of process costing we need to make three calculations to determine the EUP. These are: calculate how many EUP were required to finish BWIP, how many units were started and completed and how many EUP were needed to start the EWIP. There were 16,000 units in BWIP and they were 20% complete for conversion costs, meaning that they needed to do 80%, or 12,800 EUP to finish BWIP. There were a total of 76,000 units started and completed during the period (92,000 completed minus the 16,000 in BWIP). There were 24,000 units in EWIP that were 40% complete for conversion costs, meaning that 9,600 EUP of conversion costs had been done on the EWIP. Adding these three numbers together, we get 98,400 units.
BWIP). There were 24,000 units in EWIP that were 40% complete for conversion costs, meaning that 9,600 EUP of conversion costs had been done on the EWIP. Adding these three numbers together, we get 98,400 units.

D. This answer does not include the work that was done to finish BWIP.

**Question 179 - CIA 596 III-80 - Process Costing**

A manufacturing company's primary goals include product quality and customer satisfaction. The company sells a product, for which the market demand is strong, for $50 per unit. Due to the capacity constraints in the Production Department, only 300,000 units can be produced per year. The current defective rate is 12% (i.e., of the 300,000 units produced, only 264,000 units are sold and 36,000 units are scrapped). There is no revenue recovery when defective units are scrapped. The full manufacturing cost of a unit is $29.50, including:

<table>
<thead>
<tr>
<th>Cost</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct materials</td>
<td>$17.50</td>
</tr>
<tr>
<td>Direct labor</td>
<td>4.00</td>
</tr>
<tr>
<td>Fixed manufacturing overhead</td>
<td>8.00</td>
</tr>
</tbody>
</table>

The company's designers have estimated that the defective rate can be reduced to 2% by using a different direct material. However, this will increase the direct materials cost by $2.50 per unit to $20 per unit. The net benefit of using the new material to manufacture the product will be

A. $750,000
B. $1,425,000
C. $120,000
D. $(120,000)

A. If the defect rate is dropped from 12% to 2%, 30,000 more units will be able to be sold. At a sales price of $50, this will lead to $1,500,000 in additional revenue for the company. However, in order to obtain this decrease in the defective rate, the cost of production for all units will increase by $2.50. Since 300,000 units are produced a year, this is an incremental cost of $750,000. In total, this better materials that would reduce the defect rate would create a net benefit of $750,000.

B. This answer assumes that the more expensive materials are used only for the additional good units produced. The more expensive materials need to be used for every unit produced during the period.

C. This answer is incorrect.
D. This answer is incorrect.

**Question 180 - CIA 591 IV-6 - Process Costing**

Companies characterized by the production of basically homogeneous products will most likely use which of the following methods for the purpose of averaging costs and providing management with unit-cost data?

A. Job-order costing.
B. Direct costing.
C. Absorption costing.
D. Process costing.

A. Job order costing is used when the items produced are unique from each other, which is not the case in this
situation.

B. Direct costing includes only the direct costs of production and would not be used by management in unit costing.

C. Absorption costing is a method that can be used in many situations and in absorption costing fixed manufacturing costs are included as a product cost. Though it is possible that a company in this situation would use absorption costing, it is not usually used by management for unit-cost data.

D. Process costing is used when the units produced are similar (homogenous), as they are in this question.

---

**Question 181** - CMA 689 4-12 - Cost Terminology and Classifications

Hitchcock Industries has developed two new products but has only enough plant capacity to introduce one of these products this year. The company controller has gathered the following data to assist management in deciding which product should be selected for production.

Hitchcock’s fixed overhead includes proportional rent and utilities, machinery depreciation, and supervisory salaries. Selling and administrative expenses are not allocated to products.

**Cost per unit:**

<table>
<thead>
<tr>
<th></th>
<th>Power Drill</th>
<th>Power Saw</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw materials</td>
<td>$22.00</td>
<td>$18.00</td>
</tr>
<tr>
<td>Machining at $12/hr.</td>
<td>9.00</td>
<td>7.50</td>
</tr>
<tr>
<td>Assembly at $10/hr.</td>
<td>15.00</td>
<td>5.00</td>
</tr>
<tr>
<td>Variable O/H at $8/hr.</td>
<td>18.00</td>
<td>9.00</td>
</tr>
<tr>
<td>Fixed O/H at $4/hr.</td>
<td>9.00</td>
<td>4.50</td>
</tr>
<tr>
<td><strong>Total unit cost:</strong></td>
<td><strong>$73.00</strong></td>
<td><strong>$44.00</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Power Drill</th>
<th>Power Saw</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suggested selling price</td>
<td>$88.98</td>
<td>$49.95</td>
</tr>
<tr>
<td>Actual research and development costs</td>
<td>$180,000</td>
<td>$95,000</td>
</tr>
<tr>
<td>Proposed advertising and promotion costs</td>
<td>$300,000</td>
<td>$250,000</td>
</tr>
</tbody>
</table>

The advertising and promotion costs for the product selected by Hitchcock will be

A. Opportunity costs.
B. Mixed costs.
C. Discretionary costs.
D. Committed costs.

A. Opportunity costs are the lost benefits from the next best use of a resource. The opportunity cost of advertising would be the benefit that is given up by not using the money for something else.

B. Mixed costs are costs that include both variable and fixed elements. We are not given enough information to determine if this is the case, but it appears that they are fixed costs.

C. A discretionary cost is a cost that does not need to be incurred in the short-term and if it is not incurred, it will not cause great losses for the company. Advertising is a cost that does not need to be incurred and in the short-term not advertising will probably not have a great impact on sales.

D. Committed costs are costs that the company has not yet incurred, but has committed to paying in the future. The company has not committed to any of the advertising costs.

---

**Question 182** - CMA 1293 3-3 H3 - Joint and By-Products

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Atlas Foods produces the following three supplemental food products simultaneously through a refining process costing $93,000.

- **Alfa:** 10,000 pounds of Alfa, a popular but relatively rare grain supplement having a caloric value of 4,400 calories per pound.
- **Betters:** 5,000 pounds of Betters, a flavoring material high in carbohydrates with a caloric value of 11,200 calories per pound.
- **Morefeed:** 1,000 pounds of Morefeed, used as a cattle feed supplement with a caloric value of 1,000 calories per pound.

The joint products, Alfa and Betters, have a final selling price of $4 per pound and $10 per pound, respectively, after additional processing costs of $2 per pound of each product are incurred after the split-off point. Morefeed, a by-product, is sold at the split-off point for $3 per pound.

Assuming Atlas Foods inventories Morefeed, the by-product, the joint cost to be allocated to Alfa, using the physical quantity method is

A. $3,000  
B. $30,000  
C. $60,000  
D. $31,000

A. This is the value of the by-product.  
B. This is the amount that should be allocated to Betters.  
C. Using physical quantity, there are a total of 15,000 pounds of Alfa and Betters. Of this, 2/3 is Alfa and 1/3 is Betters. Therefore, Alfa will receive 2/3 of the joint costs. The joint costs are $93,000, but because the by-product is being inventoried, this needs to be reduced by the $3,000 revenue from selling by-product. Therefore, there is a total of $90,000 that needs to be allocated and 2/3 of this is $60,000.  
D. This is the amount that would be allocated to Betters if the by-product was not inventoried.

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**Question 183** - CMA 1295 3-29 H2 - Joint and By-Products

Petro-Chem Inc. is a small company that acquires high-grade crude oil from low-volume production wells owned by individuals and small partnerships. The crude oil is processed in a single refinery into Two Oil, Six Oil, and impure distillates. Petro-Chem does not have the technology or capacity to process these products further and sells most of its output each month to major refineries. There were no beginning inventories of finished goods or work-in-process on November 1. The production costs and output of Petro-Chem for November are as follows:

- **Crude oil acquired and placed in production:** $5,000,000  
- **Direct labor and related costs:** $2,000,000  
- **Factory overhead:** $3,000,000

**Production and sales:**

- Two Oil, 300,000 barrels produced; 80,000 barrels sold at $20 each.  
- Six Oil, 240,000 barrels produced; 120,000 barrels sold at $30 each.  
- Distillates, 120,000 barrels produced and sold at $15 per barrel.

The portion of the joint production costs assigned to Six Oil based upon physical output would be

A. $3,636,000  
B. $1,818,000

---

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A. There are a total of $10,000,000 in joint costs that need to be allocated. Under the physical output basis we first need to calculate the total physical output. There were 660,000 barrels produced. Six Oil represented 240,000 barrels, or 36.36% of the total output. Therefore, Six Oil should get 36.36%, or $3,636,363 of the joint costs. Note: if you used only 36%, you get a close, but not exact answer.

B. This is the amount that would be allocated to the Distillates.

C. This answer is incorrect.

D. This is how much would be allocated if the quantity sold was used as the allocation, not the quantity of output.

---

Question 184 - CIA 1190 IV-6 - General Overhead Allocation

Overhead costs usually include

A. Overtime premiums.
B. Abnormal spoilage.
C. Materials price variances.
D. Prime costs.

A. When overtime must be worked, the premium (this is the amount that the wage increases for overtime work) that is paid to the workers for the overtime is considered to be factory overhead. However, if the need to work overtime is the result of a specific job or customer request, the premium should be charged to that specific job and not included in the overall amount to allocate. Hence, in most cases overtime premiums are included in overhead costs.

B. Abnormal spoilage is all spoilage in excess of the normal level of spoilage. The costs that have been allocated to the abnormal spoiled units will be expensed on the income statement in that period as a loss from abnormal spoilage. Thus, abnormal spoilage is not included in the overhead costs.

C. Materials price variances are usually closed to the cost of goods sold or to the cost of goods sold and work-in-process on pro-rata basis.

D. Prime costs are the costs of direct material and direct labor. These are the direct inputs and are not included in overhead costs.

---

Question 185 - CMA 1295 3-21 - Cost Terminology and Classifications

MadTack Company's beginning and ending inventories for the month of November are:

<table>
<thead>
<tr>
<th></th>
<th>November 1</th>
<th>November 30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct materials</td>
<td>$67,000</td>
<td>$62,000</td>
</tr>
<tr>
<td>Work-in-process</td>
<td>145,000</td>
<td>171,000</td>
</tr>
<tr>
<td>Finished goods</td>
<td>85,000</td>
<td>78,000</td>
</tr>
</tbody>
</table>

Production data for the month of November:

- Direct labor: $200,000
- Actual factory overhead: $132,000
Direct materials purchased  163,000
Transportation in  4,000
Purchase returns and allowances  2,000

Madtack uses one factory overhead control account and charges factory overhead to production at 70% of direct labor cost. The company does not formally recognize over/underapplied overhead until year-end.

Madtack Company's cost of goods transferred to finished goods inventory for November is

A. $469,000  
B. $495,000  
C. $477,000  
D. $484,000

A. This answer uses actual overheads and includes the effect of the change in finished goods overhead.  
B. This answer does not calculate the materials used correctly.  
C. This answer includes the change in finished goods inventory.

D. To calculate the cost of goods transferred to finished goods, we simply take the total cost of manufacturing and adjust it for the change in work-in-progress. Total manufacturing cost is made up of prime costs plus manufacturing overheads applied. The prime costs are direct materials and direct labor. We are told that the direct labor was $200,000, but will need to calculate the direct materials for November. The beginning direct materials was $67,000. During the period, they purchased $163,000 of direct materials and also incurred $4,000 in transportation in costs. However, they also returned $2,000 of direct materials during the period. Adding these together we can calculate the total direct materials that they had during November as $232,000. Since there was an ending inventory of $62,000, they must have used $170,000 of direct materials during the period. Added to the direct labor, the total prime costs were $370,000. We do not worry about the raw materials and finished goods inventory numbers because the amounts in those accounts were not related to the current period. Overhead is applied as 70% of direct labor, which totals $140,000 ($200,000 * 70%). Adding the prime costs and the overhead together, we get $510,000. Work-in-progress increased during the period by $26,000. This means that $26,000 of the work performed during the period ended up in work-in-progress and not finished goods so this amount needs to be subtracted from cost of goods manufactured. The cost of goods transferred to finished goods is $484,000.

---

**Question 186 - CIA 1185 IV-6 - Process Costing**

In a process-costing system, the cost of abnormal spoilage should be

A. Ignored.  
B. Prorated between units transferred out and ending inventory.  
C. Included in the cost of units transferred out.  
D. Treated as a loss in the period incurred.

A. The cost associated with abnormal spoilage is expensed in the period it is incurred in.  
B. The cost associated with abnormal spoilage is expensed in the period it is incurred in.  
C. The cost associated with abnormal spoilage is expensed in the period it is incurred in.  
D. The cost associated with abnormal spoilage is expensed in the period it is incurred in.

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Question 187 - CMA 1286 4-18 H1 - Variable and Absorption Costing

A manufacturer at the end of its fiscal year recorded the data below:

- Prime cost $800,000
- Variable manufacturing overhead 100,000
- Fixed manufacturing overhead 160,000
- Variable selling and other expenses 80,000
- Fixed selling and other expenses 40,000

Using absorption (full) costing, inventoriable costs are

A. $900,000
B. $800,000
C. $1,080,000
D. $1,060,000

A. This answer does not include the fixed manufacturing overhead, which is inventoried under absorption costing.
B. This answer does not include the manufacturing overheads, which are inventoried under absorption costing.
C. This answer includes the variable and fixed selling and other expenses (which should not be included) and does not include variable manufacturing overhead (which should be included).
D. Under absorption costing, all manufacturing costs are inventoried. This includes the prime costs (which include direct labor and direct materials), variable manufacturing overhead and fixed manufacturing overhead. In total, this is $1,060,000.

Question 188 - CIA 595 III-89 - Process Costing

In comparing the FIFO (first-in, first-out) and weighted-average methods for calculating equivalent units

A. The FIFO method tends to smooth costs out more over time than the weighted-average method.
B. The two methods will give similar results even if physical inventory levels and the production costs (material and conversion costs) fluctuate greatly from period to period.
C. The FIFO method is better than the weighted-average method for judging the performance in a period independently from performance in preceding periods.
D. The weighted-average method is more precise than the FIFO method because the weighted-average method is based only on the work completed in the current period.

A. It is the weighted-average method that will smooth costs over a period of time.
B. If there is a fluctuation in production costs from one period to the next, these two methods will give different results.
C. Under the FIFO method the work and costs done in one period are kept separate from the work and costs of the next period. Therefore, FIFO does a better job of isolating the performance of a particular period.
D. The weighted average method includes costs and work that were done last period because the units in beginning WIP are averaged together with the work done during this period. The FIFO method is more precise.
**Question 189 - CIA 591 IV-4 - Process Costing**

A company manufactures a product that passes through two production departments, molding and assembly. Direct materials are added in the assembly department when conversion is 50% complete. Conversion costs are incurred uniformly. The activity in units for the assembly department during April is as follows:

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-in-process inventory, April 1 (60% complete as to conversion costs)</td>
</tr>
<tr>
<td>Transferred in from molding department</td>
</tr>
<tr>
<td>Defective at final inspection (within normal limits)</td>
</tr>
<tr>
<td>Transferred out to finished goods inventory</td>
</tr>
<tr>
<td>Work-in-process inventory, April 30 (40% complete as to conversion costs)</td>
</tr>
</tbody>
</table>

The number of equivalent units for direct materials in the assembly department for April calculated on the weighted-average basis is

A. 31,000 units.
B. 28,500 units.
C. 26,000 units.
D. 34,000 units.

A. Under the weighted average method the work and costs that are in BWIP are considered to have been during the current period. Therefore, the calculation of EUP is simply the number of units completed during the period plus the number of EUP in EWIP. There were 31,000 units completed during the period. Even though only 28,500 were transferred to the next department, the units that were defective at final inspection 2,500 were also completed during the period. Since the material is added at the 50% completion point, no materials have been added to the EWIP since the units are only 40% complete. Therefore, the EUP for materials under the weighted average method were 31,000.

B. This answer does not include the units that were defective at final inspection.

C. This is the number of material under the FIFO method.

D. This answer is incorrect.

**Question 190 - CMA 697 3-9 - Service Cost Allocation**

M&P Tool has three service departments that support the production area. Outlined below is the estimated overhead by department for the upcoming year.

<table>
<thead>
<tr>
<th>Service Departments</th>
<th>Estimated Overhead</th>
<th>Number of Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receiving</td>
<td>$25,000</td>
<td>2</td>
</tr>
<tr>
<td>Repair</td>
<td>35,000</td>
<td>2</td>
</tr>
<tr>
<td>Tool</td>
<td>10,000</td>
<td>1</td>
</tr>
</tbody>
</table>

**Production Departments**

| Assembly | 25 |
| Bolting  | 12 |

The Repair Department supports the greatest number of departments, followed by the Tool Department. Overhead cost is allocated to departments based upon the number of employees.

Using the step-down method of allocation, the allocation from the Repair Department to the Tool Department would be
A. In the step down method the costs of the first service department are allocated to the other service departments and the production departments. The costs of the second service department are allocated to the remaining service departments (but not back to the first service department) and the production departments. Since the Repair Department provides the most services to the other service departments, it is allocated first. The tool department will receive 1/40 of the Repair Department since it has 1 employee and the Receiving Department and production departments have 39 employees. This amount is $875.

B. This answer is incorrect.

C. This answer is correct if the direct method is used. However, in the step method some costs will be allocated from the Repair Department to the Tool Department.

D. This answer is incorrect.

Question 191 - CIA 1195 III-93 - Activity Based Costing

Believing that its traditional cost system may be providing misleading information, an organization is considering an activity-based costing approach. It now employs a full cost system and has been applying its manufacturing overhead on the basis of machine hours.

The organization plans on using 50,000 direct labor hours and 30,000 machine hours in the coming year. The following data show the manufacturing overhead that is budgeted.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Cost Driver</th>
<th>Budgeted Activity</th>
<th>Budgeted Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material handling</td>
<td>No. of parts handled</td>
<td>6,000,000</td>
<td>$720,000</td>
</tr>
<tr>
<td>Setup costs</td>
<td>No. of setups</td>
<td>750</td>
<td>$315,000</td>
</tr>
<tr>
<td>Machining costs</td>
<td>Machine hours</td>
<td>30,000</td>
<td>$540,000</td>
</tr>
<tr>
<td>Quality control</td>
<td>No. of batches</td>
<td>500</td>
<td>$225,000</td>
</tr>
<tr>
<td>Total Manufacturing Overhead Cost</td>
<td></td>
<td></td>
<td>$1,800,000</td>
</tr>
</tbody>
</table>

Cost, sales and production for one of the organization's products for the coming year are as follows:

Prime Costs:
- Direct material cost per unit $4.40
- Direct labor cost per unit = .05 DLH @ $15/DLH .75
- Total Prime Cost $5.15

Sales and Production Data:
- Expected sales 20,000 units
- Batch size 5,000 units
- Setups 2 per batch
- Total parts per finished unit 5 parts
- Machine hours required 80 MH per batch

If the organization uses the traditional full cost system, the cost per unit for this product for the coming year would be

A. $6.11
B. $5.39
C. $6.95
D. $5.44

A. The traditional system will include the costs for direct materials, direct labor and overhead. Direct materials and labor are $5.15 per unit so all we need to calculate is the overhead per unit. Under the traditional method, overhead is applied based on machine hours. The rate is $60 per machine hour ($1,800,000 budgeted costs / 30,000 hours). Each unit requires .016 machine hours (80 machine hours in a batch / 5,000 units in a batch). This means that each unit will have $.96 of overhead applied. This gives a total cost of $6.11 per unit under the traditional method.

B. This answer assumes that 80 machine hours are required for the entire 20,000 units produced, not per batch.

C. This answer is based on the direct labor overhead rate.

D. This answer uses the machining overhead rate.

Question 192 - CIA 591 IV-11 - General Overhead Allocation

The following information is available from the records of a manufacturing company that applies factory overhead based on direct labor hours:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated overhead cost</td>
<td>$500,000</td>
</tr>
<tr>
<td>Estimated labor hours</td>
<td>200,000</td>
</tr>
<tr>
<td>Actual overhead cost</td>
<td>$515,000</td>
</tr>
<tr>
<td>Actual labor hours</td>
<td>210,000</td>
</tr>
</tbody>
</table>

Based on this information, factory overhead is

A. Over-applied by $10,000.
B. Under-applied by $15,000.
C. Over-applied by $40,750.
D. Under-applied by $9,524.

A. In this question overhead is allocated based on direct labor hours. The budgeted overhead is $500,000 and the budgeted direct labor hours is 200,000. This gives us an application rate of $2.50 of overhead for every 1 direct labor hour. Since the actual direct labor hours were 210,000, the company applied $525,000 of overhead. This is $10,000 more than the actual overhead and is the overapplied overhead.

B. This answer is simply the difference between the actual and estimated overhead costs. Also, in this question overhead was overapplied, not underapplied.

C. This answer reverses the actual and estimated dollar amounts in the calculation.

D. This answer reverses the actual and estimated hours in the calculation.

Question 193 - CMA 1295 3-15 - Service Cost Allocation

Because this allocation method recognizes that service departments often provide each other with interdepartmental service, it is theoretically considered to be the most accurate method for allocating service department costs to production departments. This method is the

A. Variable method.
B. Reciprocal method.
C. Linear method.
D. Direct method.

A. The variable method is not a method of allocation of service department costs.

B. The reciprocal method recognizes the services that are provided by one service department to the other service departments. As a result of this, it is considered to be the most accurate method of allocating service department costs to the production department.

C. The linear method is not a method of allocating service department costs.

D. The direct method does not recognize the services that are provided by one service department to another service department.

Question 194 - CIA 594 III-46 - Variable and Absorption Costing

When comparing absorption costing with variable costing, which of the following statements is not true?

A. When sales volume is more than production volume, variable costing will result in higher operating profit.
B. Absorption costing enables managers to increase operating profits in the short run by increasing inventories.
C. Under absorption costing, operating profit is a function of both sales volume and production volume.
D. A manager who is evaluated based on variable costing operating profit would be tempted to increase production at the end of a period in order to get a more favorable review.

A. This is a true statement.
B. This is a true statement because an increase in inventory will keep more of the fixed factory overhead on the balance sheet and off the income statement.
C. This is a true statement.
D. Under variable costing, the fixed factory overheads are expensed in the period so an increase in production would not impact the income from the period, nor the manager's review.

Question 195 - CMA 1296 3-19 - General Overhead Allocation

Generally, individual departmental rates rather than a plantwide rate for applying overhead would be used if

A. A company wants to adopt a standard cost system.
B. The manufactured products differ in the resources consumed from the individual departments in the plant.
C. Manufacturing overhead is the largest cost component of its product cost.
D. A company's manufacturing operations are all highly automated.

A. A standard cost system may also be issued with one, or more than one allocation rate.

B. If the products use different amounts of the different resources in each department, then departmental rates rather than a factory rate should be used.

C. Whether or not manufacturing overhead is the largest component of product cost does not impact whether or not one or more allocation bases should be used.
D. Whether a company's operations are highly automated does not impact whether or not one or more allocation bases should be used.

Question 196 - CIA 596 III-77 - Other Costing Systems

Three commonly employed systems for product costing are job-order costing, operation costing, and process costing. Match the type of production environment with the costing method used.

Job-Order Costing / Operation Costing / Process Costing

A. Engineering design / Auto assembly / Motion picture production
B. Auto repair / Clothing manufacturing / Oil refining
C. Loan processing / Drug manufacturing / Custom printing
D. Custom printing / Paint manufacturing / Paper manufacturing

A. Motion picture production would use job-order costing.

B. Each of these business would use the identified method of costing. An auto repair ship would use job-order costing, a clothing manufacturer would use operations costing and an oil refiner would use process costing.

C. Custom printing would use job-order costing.

D. Paint manufacturing would use process costing.

Question 197 - CMA 680 4-5 - Process Costing

The cost associated with abnormal spoilage ordinarily would be charged to

A. A special loss account.
B. Manufacturing overhead.
C. Inventory.
D. A material variance account.

A. Abnormal spoilage is charged to a special loss account and presented on the income statement in the period of the spoilage.

B. The costs of abnormal spoilage are not charged to manufacturing overhead.

C. The costs of abnormal spoilage are not charged to inventory.

D. The costs of abnormal spoilage are not charged to a material variance account.

Question 198 - CMA 1285 4-14 H1 - Variable and Absorption Costing

Osawa, Inc. planned and actually manufactured 200,000 units of its single product in its first year of operations. Variable manufacturing costs were $30 per unit of product. Planned and actual fixed manufacturing costs were $600,000, and selling and administrative costs totaled $400,000. Osawa sold 120,000 units of product at a selling price of $40 per unit.
Osawa’s operating income using absorption (full) costing is

A. $440,000
B. $840,000
C. $200,000
D. $600,000

A. Under absorption costing the fixed manufacturing costs are allocated to the products produced. The variable costs of production are $30 per unit and the fixed costs per unit are $3 ($600,000 / 200,000 units produced). In total, the cost per unit is $33. Since the sales price was $40 per unit, this is a gross profit of $7 per unit. With 120,000 units sold, that is $840,000. Subtracting from this the selling and administration costs of $400,000, we get an operating income of $440,000.

B. This answer is incorrect. It does not take into account the selling and administration costs that are expensed.

C. This is the operating income as calculated under variable costing.

D. This answer is incorrect.

---

**Question 199 - CMA 690 4-7 - Joint and By-Products**

Sonimad Sawmill manufactures two lumber products from a joint milling process. The two products developed are mine support braces (MSB) and unseasoned commercial building lumber (CBL). A standard production run incurs joint costs of $300,000 and results in 60,000 units of MSB and 90,000 units of CBL. Each MSB sells for $2 per unit, and each CBL sells for $4 per unit.

If there are no further processing costs incurred after the split-off point, the amount of joint cost allocated to the mine support braces (MSB) on a relative sales value basis would be

A. $180,000.
B. $225,000.
C. $75,000.
D. $120,000.

A. This is the amount that should be allocated to CBL using the number of units as the allocation basis.

B. This is the amount that should be allocated to CBL using the relative sales value as the allocation basis.

C. In order to allocate the costs using the relative sales value method, we need to know the total relative sales value. There are 60,000 units of MSB that will be sold at $2 each for a total value of $120,000. There are 90,000 units of CBL that will be sold for $4 each, for a total value of $360,000. The total sales value of both products is $480,000, and MSB represents 25% of this total sales value. The joint costs are $300,000 and MSB should be allocated 25%, or $75,000, of the joint costs.

D. This is the amount that should be allocated to MSB using the number of units as the allocation basis.

---

**Question 200 - CMA 697 3-10 - Variable and Absorption Costing**

Which one of the following statements is correct regarding absorption costing and variable costing?

A. Variable manufacturing costs are lower under variable costing.

(c) HOCK international, page 118
B. Gross margins are the same under both costing methods.
C. If finished goods inventory increases, absorption costing results in higher income.
D. Overhead costs are treated in the same manner under both costing methods.

A. Variable costs are the same under both methods.

B. Because of the different treatment of fixed factory overheads, the sales minus the product cost results in the gross margin for absorption costing and sales minus product costs (variable manufacturing costs) results in manufacturing contribution margin under variable costing. These two results will be different under these two methods.

C. When inventory levels increase, absorption costing will give a higher net income because some of the fixed factory overheads are in inventory on the balance sheet and were not expensed this period on the income statement.

D. Fixed factory overhead costs are not treated the same way under both methods.

---

**Question 201 - CIA 585 IV-5 - Variable and Absorption Costing**

The Blue Company has failed to reach its planned activity level during its first 2 years of operation. The following table shows the relationship among units produced, sales, and normal activity for these years and the projected relationship for Year 3. All prices and costs have remained the same for the last 2 years and are expected to do so in Year 3. Income has been positive in both Year 1 and Year 2.

<table>
<thead>
<tr>
<th>Units Produced</th>
<th>Sales</th>
<th>Planned Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>90,000</td>
<td>90,000</td>
</tr>
<tr>
<td>Year 2</td>
<td>95,000</td>
<td>95,000</td>
</tr>
<tr>
<td>Year 3</td>
<td>90,000</td>
<td>90,000</td>
</tr>
</tbody>
</table>

Because Blue Company uses an absorption-costing system, one would predict gross margin for Year 3 to be

A. Equal to Year 1.
B. Greater than Year 1.
C. Equal to Year 2.
D. Greater than Year 2.

A. Gross margin is calculated as sales minus cost of goods sold. Since all of the costs have remained the same over the period and there has been no change in inventory any period, the gross margin for Year 3 will be equal to the gross margin from the year in which sales were the same level - and this is Year 1. The fact that there has been no change in inventory simply lets us know that all underapplied overhead was closed to cost of goods sold in that year.

B. This answer is incorrect.
C. This answer is incorrect.
D. This answer is incorrect.

---

**Question 202 - CMA 678 4-6 - Cost Terminology and Classifications**

Conversion costs are
A. The sum of raw materials costs and direct labor costs.
B. All costs associated with manufacturing other than direct labor costs and raw material costs.
C. Manufacturing costs incurred to produce units of output.
D. The sum of direct labor costs and all factory overhead costs.

A. This is the definition of prime costs.
B. This is the definition of overhead, and conversion costs include more than just overhead.
C. Manufacturing costs include direct materials, which are not included in conversion costs.
D. By definition, conversion costs are the costs of direct labor and factory overhead. It is the cost of converting the raw materials to the finished goods.

Question 203 - CMA 1292 3-15 - General Overhead Allocation

Nanjones Company manufactures a line of products distributed nationally through wholesalers. Presented below are planned manufacturing data for the year and actual data for November of the current year. The company applies overhead based on planned machine hours using a predetermined annual rate.

<table>
<thead>
<tr>
<th>Planning Data</th>
<th>Annual</th>
<th>November</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed manufacturing overhead</td>
<td>$1,200,000</td>
<td>$100,000</td>
</tr>
<tr>
<td>Variable manufacturing overhead</td>
<td>$2,400,000</td>
<td>$220,000</td>
</tr>
<tr>
<td>Direct labor hours</td>
<td>48,000</td>
<td>4,000</td>
</tr>
<tr>
<td>Machine hours</td>
<td>240,000</td>
<td>22,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data for November</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct labor hours (actual)</td>
<td>4,200</td>
</tr>
<tr>
<td>Direct labor hours (plan based on output)</td>
<td>4,000</td>
</tr>
<tr>
<td>Machine hours (actual)</td>
<td>21,600</td>
</tr>
<tr>
<td>Machine hours (plan based on output)</td>
<td>21,000</td>
</tr>
<tr>
<td>Fixed manufacturing overhead</td>
<td>$101,200</td>
</tr>
<tr>
<td>Variable manufacturing overhead</td>
<td>$214,000</td>
</tr>
</tbody>
</table>

The predetermined overhead application rate for Nanjones Company is

A. $5.00.
B. $15.00.
C. $10.00.
D. $25.00.

A. This is the predetermined fixed manufacturing overhead application rate only. It doesn't take into consideration variable manufacturing overheads.

B. Nanjones applies overhead based on planned machine hours using a predetermined annual rate. The total amount of planned annual manufacturing overhead is the sum of fixed and variable factory overheads, or $3,600,000 ($1,200,000 + $2,400,000). The planned machine hours are 240,000. Knowing these two numbers we can now calculate the predetermined overhead application rate as $15 ($3,600,000 ÷ 240,000).

C. This is the predetermined variable manufacturing overhead application rate only. It doesn't take in consideration fixed manufacturing overheads.

D. This is the fixed factory overhead rate per labor hour. In this question the denominator has to be machine hours.
Question 204 - CMA 691 3-48b - Process Costing

Gregg Industries manufactures molded chairs. The three models of molded chairs, which are all variations of the same design, are Standard (can be stacked), Deluxe (with arms), and Executive (with arms and padding). The company uses batch manufacturing and has an operation costing system.

Gregg has an extrusion operation and subsequent operations to form, trim, and finish the chairs. Plastic sheets are produced by the extrusion operation, some of which are sold directly to other manufacturers. During the forming operation, the remaining plastic sheets are molded into chair seats and the legs are added; the standard model is sold after this operation. During the trim operation, the arms are added to the deluxe and executive models and the chair edges are smoothed. Only the executive model enters the finish operation where the padding is added. All of the units produced are subject to the same steps within each operation, and no units are in process at the end of the period. The units of production and direct materials costs were as follows:

<table>
<thead>
<tr>
<th>Units Produced</th>
<th>Extrusion Materials</th>
<th>Form Materials</th>
<th>Trim Materials</th>
<th>Finish Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic sheets</td>
<td>5,000</td>
<td>$ 60,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard model</td>
<td>6,000</td>
<td>72,000</td>
<td>$24,000</td>
<td></td>
</tr>
<tr>
<td>Deluxe model</td>
<td>3,000</td>
<td>36,000</td>
<td>12,000</td>
<td>$9,000</td>
</tr>
<tr>
<td>Executive model</td>
<td>2,000</td>
<td>24,000</td>
<td>8,000</td>
<td>6,000</td>
</tr>
<tr>
<td></td>
<td>16,000</td>
<td>$192,000</td>
<td>$44,000</td>
<td>$15,000</td>
</tr>
</tbody>
</table>

Manufacturing costs applied during the month were:

<table>
<thead>
<tr>
<th>Extrusion Operation</th>
<th>Form Operation</th>
<th>Trim Operation</th>
<th>Finish Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct labor</td>
<td>$152,000</td>
<td>$60,000</td>
<td>$30,000</td>
</tr>
<tr>
<td>Factory overhead</td>
<td>240,000</td>
<td>72,000</td>
<td>39,000</td>
</tr>
</tbody>
</table>

The unit cost of a deluxe model is

A. $66.30  
B. $69.30  
C. $55.50  
D. $52.50

A. This answer does not include the material costs of the trim operation.

B. The material costs for the deluxe model are $57,000 ($36,000 + $12,000 + $9,000). Thus, the per unit cost of materials for the deluxe model is $19.00 ($57,000 / 3,000 units of deluxe model). Next we need to determine how much labor and overhead was allocated to the deluxe model at each stage of production. In the extrusion operation, the per unit cost is $24.50 ($392,000 total conversion costs / 16,000 units). In the form operation the unit cost is $12 per unit ($132,000 / 11,000 units). In the trim operation, the per unit cost is $13.80 ($69,000 total conversion costs / 5,000 units). There are no costs allocated to the deluxe model from the finish operation because the deluxe model does not go through this operation. Adding these four numbers together we get the total unit cost of a deluxe model chair of $69.30.

C. This answer does not include the conversion costs of the trim operation.

D. This is the unit cost of the standard model.

Question 205 - CMA 696 3-19 - Cost Terminology and Classifications

If the beginning balance for May of the materials inventory account was $27,500, the ending balance for May is
$28,750, and $128,900 of materials were used during the month, the materials purchased during the month cost

A. $127,650  
B. $130,150  
C. $157,650  
D. $101,400

A. This answer switches the beginning and ending inventory amounts in the formula.

B. This question is like a cost of goods sold question and the formula that we need to use is: beginning inventory + purchases - materials used = ending inventory. Putting the numbers into the formula, we get $27,500 + X - $128,900 = $28,750. Solving for X, we get $130,150 of materials purchased during the period.

C. This answer does not take into account the beginning inventory.

D. This answer does not take into account the ending inventory.

---

Question 206 - CIA 587 IV-5 - Process Costing

Assume 550 units were worked on during a period in which a total of 500 good units were completed. Normal spoilage consisted of 30 units; abnormal spoilage, 20 units. Total production costs were $2,200. The company accounts for abnormal spoilage separately on the income statement as loss due to abnormal spoilage. Normal spoilage is not accounted for separately. What is the cost of the good units produced?

A. $2,080.  
B. $2,120.  
C. $2,332.  
D. $2,200.

A. This answer includes the cost of abnormal spoilage in the cost of good units, instead of normal spoilage.

B. When the cost of normal spoilage is not accounted for separately, it is simply transferred to the next department as part of the cost of the good units. We need to calculate the cost per unit of all units produced - both good and spoiled units. In total 550 units were produced at a cost of $2,200. This is a cost per unit of $4.00. The cost for the 500 good units and the 30 normally spoiled units is transferred to the next department. This is 530 units at $4.00 per unit, or $2,120.

C. This answer is incorrect. It uses 500 good units instead of the total 550 units that were completed to calculate the cost per unit.

D. This answer includes the costs of abnormal spoilage and normal spoilage in the cost of good units. Only the cost of normal spoilage should be included.

---

Question 207 - CMA - Process Costing

Juniper Manufacturing uses a weighted-average process costing system at its satellite plant. Goods pass from the Major Assembly Department to the Finishing Department to finished goods inventory. The goods are inspected twice in the Finishing Department. The first inspection occurs when the goods are 30% complete, and the second inspection occurs at the end of production. The following data pertain to the Finishing Department for the month of July.

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good units started and completed during July</td>
</tr>
</tbody>
</table>

(c) HOCK international, page 122
Normal spoilage - first inspection 2,000
Abnormal spoilage - second inspection 150
Ending work-in-process inventory, 60% complete 15,000

There was no beginning work-in-process inventory in July. Juniper recognizes spoiled units to make the cost of all spoilage visible in its management reporting. What are the equivalent units for assigning costs for July?

A. 74,750
B. 74,000
C. 74,600
D. 74,150

A. Under the weighted average method the equivalent units is calculated as the number of units completed plus the equivalent units that are in ending WIP. In this question we will also need to include the equivalent units in the spoiled units. There were 65,000 good units completed and there were 15,000 units in ending WIP that were 60% complete, making it 9,000 equivalent units in EWIP. In addition, there were 150 equivalent units of work in the units that were spoiled at the second inspection. This is because the second inspection takes place at the end of the process and the units are 100% complete. The 2,000 units that were spoiled at the first inspection represent only 600 equivalent units since the inspection is made when the units are 30% complete. Adding these four figures together, we get 74,750 equivalent units.

B. This answer does not include the equivalent units in the normal or abnormal spoilage.
C. This answer does not include the equivalent units in the abnormal spoilage.
D. This answer does not include the equivalent units in the normal spoilage.

Question 208 - CIA 593 IV-5 - Process Costing

A company employs a process cost system using the first-in, first-out (FIFO) method. The product passes through both Department 1 and Department 2 in order to be completed. Units enter Department 2 upon completion in Department 1. Additional direct materials are added in Department 2 when the units have reached the 25% stage of completion with respect to conversion costs. Conversion costs are added proportionally in Department 2. The production activity in Department 2 for the current month was as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning work-in-process inventory</td>
<td>15,000</td>
</tr>
<tr>
<td>(40% complete with respect to conversion costs)</td>
<td></td>
</tr>
<tr>
<td>Units transferred in from Department 1</td>
<td>80,000</td>
</tr>
<tr>
<td>Units to account for</td>
<td>95,000</td>
</tr>
<tr>
<td>Units completed and transferred to finished goods</td>
<td>85,000</td>
</tr>
<tr>
<td>Ending work-in-process inventory</td>
<td>10,000</td>
</tr>
<tr>
<td>(20% complete with respect to conversion costs)</td>
<td></td>
</tr>
<tr>
<td>Units accounted for</td>
<td>95,000</td>
</tr>
</tbody>
</table>

How many equivalent units for direct materials were added in Department 2 for the current month?

A. 85,000 units.
B. 90,000 units.
C. 70,000 units.
D. 80,000 units.

A. This is the number of EUP for materials using the weighted average method.
B. This answer is incorrect.
C. Because the materials are added when the units are 25% complete, we know that the units in BWIP have already had the materials added. We know this because they are 40% complete. This means that no materials are needed in respect to the units in BWIP. There were 80,000 units added during the period, so 80,000 is the maximum number of EUP of materials that could be used. However, since the 10,000 units in EWIP have not yet reached the 25% stage, the materials have not yet been added to them. Therefore, the number of EUP of materials used during the period is only 70,000.

D. This is incorrect. This is the number of units transferred in, but not all of them have received the materials.

**Question 209** - CMA 1296 3-30 - Joint and By-Products

Lankip Company produces two main products and a by-product out of a joint process. The ratio of output quantities to input quantities of direct material used in the joint process remains consistent from month to month. Lankip has employed the physical-volume method to allocate joint production costs to the two main products. The net realizable value of the by-product is used to reduce the joint production costs before the joint costs are allocated to the main products. Data regarding Lankip's operations for the current month are presented in the chart below. During the month, Lankip incurred joint production costs of $2,520,000. The main products are not marketable at the split-off point and, thus, have to be processed further.

<table>
<thead>
<tr>
<th></th>
<th>First Main Product</th>
<th>Second Main Product</th>
<th>By-product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly output in pounds</td>
<td>90,000</td>
<td>150,000</td>
<td>60,000</td>
</tr>
<tr>
<td>Selling price per pound</td>
<td>$30</td>
<td>$14</td>
<td>$2</td>
</tr>
<tr>
<td>Separable process costs</td>
<td>$540,000</td>
<td>$660,000</td>
<td></td>
</tr>
</tbody>
</table>

The amount of joint production cost that Lankip would allocate to the Second Main Product by using the physical-volume method to allocate joint production costs would be

A. $1,575,000  
B. $1,260,000  
C. $1,500,000  
D. $1,200,000

A. This answer does not reduce the joint costs by the sales value of the by-product.  
B. This answer is incorrect.  
C. In this question the first thing we need to do is to reduce the joint costs that need to be allocated by the sales value of the by-product. The sales value of the by-product is $120,000 and this will reduce the costs to allocate to $2,400,000. These costs are to be allocated based upon the physical volume of the two products. Product 1 has a volume of 90,000 pounds and Product 2 has a volume of 150,000 pounds. In total this is 240,000 pounds and since the 2nd product is 150,000 pounds, the allocation is as follows: $2,400,000 * (150,000/240,000) = $1,500,000.  
D. This answer allocates some of the joint costs to the by-product.

**Question 210** - CPA 1195 TMG-51 - Other Costing Systems

Key Co. changed from a traditional manufacturing operation with a job-order costing system to a just-in-time operation with a backflush costing system. What is(are) the expected effect(s) of these changes on Key's inspection costs and recording detail of costs tracked to jobs in process?
Inspection Cost / Detail of Costs Tracked to Jobs

A. Decrease / Increase  
B. Increase / Decrease  
C. Increase / Increase  
D. Decrease / Decrease

A. Backflush costing will lower tracking costs.

B. JIT usually assumes that materials go to the production without being inspected, which makes inspection costs to decrease.

C. Both, inspection an tracking costs will decrease.

D. JIT usually assumes that materials go to the production without being inspected, which causes inspection costs to decrease. Under JIT, the supplier normally performs all necessary inspections. Backflush costing will lower tracking costs because the entries to the inventory accounts may be delayed until as late as the end of the period.

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**Question 211 - CIA 1190 IV-3 - Service Cost Allocation**

A corporation allocates indirect corporate overhead costs to its operating divisions. The company uses a cause-and-effect criterion in the selection of appropriate allocation bases. Which of the following would be an appropriate allocation base to assign the costs of the corporate personnel department to the operating divisions using a cause-and-effect criterion?

A. Number of employees in each division.  
B. Total book value of identifiable division assets.  
C. Square footage of space occupied by each division.  
D. Total service years of employees in each division.

A. Presumably the cost driver for the personnel department would be the number of employees, and therefore this is the most cause and effect method of allocating the personnel department costs.

B. Total book value of division assets would not be a cause and effect criteria for the allocation of the personnel department costs.

C. Square footage of space would not be a cause and effect criteria for the allocation of the personnel department costs.

D. Though the number of service years is a personnel related measure, how long someone has worked would not significantly impact the amount of time the personnel department spends on each employee.

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**Question 212 - CIA 1195 III-41 - Activity Based Costing**

Cost allocation is the process of assigning indirect costs to a cost object. The indirect costs are grouped in cost pools and then allocated by a common allocation base to the cost object. The base that is employed to allocate a homogeneous cost pool should

A. Have a high correlation with the cost items in the cost pool as the sole criterion for selection.  
B. Assign the costs in the pool uniformly to cost objects even if the cost objects use resources in a nonuniform way.  
C. Be a nonfinancial measure (e.g., number of setups) because a nonfinancial measure is more objective.
D. Have a cause-and-effect relationship with the cost items in the cost pool.
A. A high correlation between the item and the cost pool does not necessarily mean that there is a cause-and-effect relationship between them.
B. The costs should be allocated in the manner in which they are incurred by the cost objects.
C. Financial measures (direct labor costs) may also be used as an allocation base.

D. Any allocation basis should have a cause-and-effect relationship between the costs that are being allocated and the items they are being allocated to.

Question 213 - CMA 695 3-8 - Process Costing

Kimbeth Manufacturing uses a process cost system to manufacture Dust Density Sensors for the mining industry. The following information pertains to operations for the month of May.

<table>
<thead>
<tr>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning work-in-process inventory, May 1</td>
</tr>
<tr>
<td>Started in production during May</td>
</tr>
<tr>
<td>Completed production during May</td>
</tr>
<tr>
<td>Ending work-in-process inventory, May 31</td>
</tr>
<tr>
<td>16,000</td>
</tr>
<tr>
<td>100,000</td>
</tr>
<tr>
<td>92,000</td>
</tr>
<tr>
<td>24,000</td>
</tr>
</tbody>
</table>

The beginning inventory was 60% complete for materials and 20% complete for conversion costs. The ending inventory was 90% complete for materials and 40% complete for conversion costs.

Costs pertaining to the month of May are as follows:
- Beginning inventory costs are materials, $54,560; direct labor, $20,320; and factory overhead, $15,240.
- Costs incurred during May are materials used, $468,000; direct labor, $182,880; and factory overhead, $391,160.

Using the weighted-average method, the total cost of the units in the ending work-in-process inventory at May 31 is

A. $154,800
B. $156,960
C. $153,168
D. $99,360

A. This answer is incorrect.

B. In order to determine the cost of the units in EWIP, we need to multiply the EUP in ending WIP for materials and conversion costs by the cost per unit for each element. The number of EUP of materials in ending WIP is 21,600 and the cost per EUP of materials was $4.60 (this is shown in the following paragraph). This gives a total of $99,360 of materials in EWIP. There were 9,600 EUP of conversion costs in EWIP and the cost per EUP was $6.00 (this is shown in the last paragraph). This is a total of $57,600 of conversion costs in EWIP. Added together there is $156,960 in total costs in EWIP. Under the weighted average method to calculate the equivalent units, we simply need to add together the number of units completed and the number of EUP that were done in order to start the EWIP. In this question 92,000 units were completed and the 24,000 units in EWIP are 90% complete for materials, giving us 21,600 EUP in EWIP. This gives a total of 113,600 EUP of materials for the period. The total costs for materials under the weighted average method will include the costs used during the period ($468,000) as well as the costs of the materials in BWIP ($54,560). The total material cost is $522,560 and this is divided by the 113,600 EUP giving us a cost per unit of materials of $4.60. Under the weighted average method to calculate the equivalent units, we simply need to add together the number of units completed and the number of EUP that were done in order to start the EWIP. In this question
92,000 units were completed and the 24,000 units in EWIP are 40% complete for conversion costs, giving us 9,600 EUP in EWIP. This gives a total of 101,600 EUP of conversion costs for the period. The total costs for conversion costs under the weighted average method will include the costs used during the period ($182,880 + $391,160) as well as the costs of the conversion costs in BWIP ($20,320 + $15,240). The total cost for conversion costs is $609,600 and this is divided by the 101,600 EUP giving us a cost per unit of materials of $6.00.

C. This is the cost under the FIFO method.

D. This is the cost of the materials in EWIP.