

Question 1 - CMA 692 3-6 - 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 2 - CMA 694 3-25 - Overhead Allocation

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:

	Wall Mirrors	Specialty Windows
Units produced	25	25
Material moves per product line	5	15
Direct labor hours per unit	200	200
Budgeted materials handling costs	\$50,000	

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. \$5,000
- B. \$1,000
- C. \$2,000
- D. \$500

A. This answer is incorrect.

B. 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.

C. This is an allocation of all of the materials handling costs to the wall mirrors.

D. This would be the amount allocated if the materials handling costs were allocated on the basis of material moves.

Question 3 - IMA 08-P2-37 - Overhead Allocation

Troughton Company manufactures radio-controlled toy dogs. Summary budget financial data for Troughton for the current year are as follows.

Sales (5,000 units at \$150 each)	\$750,000
Variable manufacturing cost	400,000
Fixed manufacturing cost	100,000
Variable selling and administrative cost	80,000
Fixed selling and administrative cost	150,000

Troughton uses an absorption costing system with overhead applied based on the number of units produced, with a denominator level of activity of 5,000 units. Underapplied or overapplied manufacturing overhead is written off to cost of goods sold in the year incurred. The \$20,000 budgeted operating income from producing and selling 5,000 toy dogs planned for this year is of concern to Trudy George, Troughton's president. She believes she could increase operating income to \$50,000 (her bonus threshold) if Troughton produces more units than it sells, thus building up the finished goods inventory. How much of an increase in the number of units in the finished goods inventory would be needed to generate the \$50,000 budgeted operating income?

- A. 1,500 units.
- B. 7,500 units.
- C. 600 units.
- D. 556 units.

A. The company is expecting \$20,000 in operating income, and George wants to increase that by \$30,000 to \$50,000. Both sales and production are planned for 5,000 units. Budgeted fixed manufacturing cost is \$100,000, so the application rate for fixed overhead is \$20 per unit ($\$100,000 \div 5,000$ units expected to be produced). If the company increases production above what it can sell, inventory will increase. As a result, the fixed manufacturing cost applied to the unsold units in inventory will be on the balance sheet instead of in Cost of Goods Sold on the income statement, and net income will be increased by the amount of fixed manufacturing cost attached to the unsold units in ending inventory.

To increase net income by \$30,000, the number of units in inventory will need to increase by $\$30,000 \div \20 fixed manufacturing cost applied per unit, or 1,500 units.

The company's practice is to write off under- or over-applied manufacturing cost to COGS. If production is increased by 1,500 units, fixed manufacturing cost will be overapplied by $1,500 \text{ units} \times \20 per unit, or \$30,000, assuming that actual fixed manufacturing cost is the same as budgeted fixed manufacturing cost. This overapplied fixed manufacturing cost will be cleared out at the end of the period with a credit to COGS of \$30,000. So fixed manufacturing cost in COGS will be \$30,000 lower than it would have been if the company had produced only the 5,000 units it planned to produce and that it was able to sell. Because of the overproduction, only \$70,000 of the actual \$100,000 of fixed manufacturing cost incurred will reach the income statement, whereas all \$100,000 of it would reach the income statement if only 5,000 units were produced and sold. If 6,500 units are produced instead and 1,500 of them remain in inventory at the end of the period, that \$30,000 will instead be in Finished Goods Inventory on the balance sheet.

B. This answer results from (1) assuming that current budgeted operating income is zero and operating income is to be increased by the full \$50,000 of desired operating income instead of by \$30,000; and (2) misreading the question as asking for the **total number** of units to be produced instead of the **increase** in the number of units to be produced.

C. This answer results from including fixed selling and administrative cost along with fixed manufacturing cost in the calculation. Only fixed manufacturing cost is relevant.

D. This is incorrect. See correct answer for full calculation.

Question 4 - CMA 1290 3-9 - Overhead Allocation

Franklin Glass Works' production budget for the year ended November 30 was based on 200,000 units. Each unit requires two standard hours of labor for completion. Total overhead was budgeted at \$900,000 for the year, and the fixed overhead rate was estimated to be \$3.00 per unit. Both fixed and variable overhead are assigned to the product

on the basis of direct labor hours. The actual data for the year ended November 30 are presented as follows.

Actual production in units	198,000
Actual direct labor hours	440,000
Actual variable overhead	\$352,000
Actual fixed overhead	\$575,000

The fixed overhead applied to Franklin's production for the year is

- A. \$600,000.
- B. \$484,200.
- C. \$575,000.
- D. \$594,000.

A. This is the budgeted fixed overhead amount based on 200,000 units of production. In the calculation of applied overhead we use the standard input for the actual level of output. The formula is Standard Application rate × Standard input for the Actual level of output. See the correct answer for a complete explanation.

B. The amount of overhead applied is calculated as Standard Application rate × Standard input for the Actual level of output. See the correct answer for a complete explanation.

C. This is the amount of actual fixed overhead. In fact, the overhead applied and actual overhead differ in most cases, as in this particular case. See the correct answer for a complete explanation.

D.

The amount of overhead applied is calculated as Standard Application rate × Standard input for the Actual level of output. Fixed overhead is assigned to the product on the basis of direct labor hours. The fixed overhead rate was estimated to be \$3.00 per unit and two hours are required to produce one unit. Thus, the application rate is \$1.50 (\$3.00 ÷ 2). The standard direct hours allowed for the actual output are 396,000 (2 × 198,00 actual production in units). The applied overhead equals \$594,000 (\$1.50 × 396,000).

We also could calculate the amount of applied overhead using actual units produced and the unit fixed overhead application rate of (\$3.00 × 198,000) which gives the same answer: \$594,000.

Question 5 - CMA 696 3-2 - 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.

Capacity Levels	Budgeted Denominator Level (units of output)	Budgeted Overhead Cost Rate
Theoretical	1,500,000	\$.0667
Practical	1,250,000	.0800
Normal	775,000	.1290
Master-budget	800,000	.1250

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.

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.

The most important fact given here is that variances are adjustments to cost of goods sold. If variances are prorated among cost of goods sold, finished goods inventory and work in process inventory, the choice of a denominator level will make no difference in net income, because net income will be the same no matter which denominator level is chosen. However, when all variances are adjustments to cost of goods sold, the choice of the denominator level will make a difference in net income.

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 6 - CMA 1290 3-1 - Overhead Allocation

Practical capacity as a plant capacity concept

- A. Is the production volume that is necessary to meet sales demand for the next year.
 - B. Includes consideration of idle time caused by both limited sales orders and human and equipment inefficiencies.
 - C. Does not consider idle time caused by inadequate sales demand.
 - D. Assumes all personnel and equipment will operate at peak efficiency and total plant capacity will be used.
- A. This is not related to practical capacity — it is just the requirement needed to meet demand.
 - B. Practical capacity includes downtime from human and equipment inefficiencies, but not from the lack of demand.
- C. 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.**
- D. Practical capacity assumes that there will be some down time in the factory production as a result of human and machine inefficiencies.

Question 7 - CIA 1193 IV-5 e - 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 sum of the straight-time wages and overtime premium would be charged entirely to manufacturing overhead.
- B. The overtime hours times the sum of the straight-time wages and overtime premium would be treated as direct labor.
- C. 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.
- D. 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.

- A. Only the excess of the overtime wage over the regular wage should be charged to overhead.
- B. The amount of the overtime wage that is in excess of the regular wage rate should be charged to overhead.
- C. Nothing should be charged to repair and maintenance, as the labor costs are split between direct labor and overhead.

D. 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 and is overhead. The standard wage rate will be charged to direct labor for each hour of overtime that was worked.

Question 8 - CMA 1296 3-19 - Overhead Allocation

Generally, individual departmental rates rather than a plantwide rate for applying overhead would be used if

- A. Manufacturing overhead is the largest cost component of its product cost.
- B. A company's manufacturing operations are all highly automated.
- C. The manufactured products differ in the resources consumed from the individual departments in the plant.
- D. A company wants to adopt a standard cost system.

A. Whether or not manufacturing overhead is the largest component of product cost does not impact whether one or more allocation bases should be used.

B. Whether a company's operations are highly automated does not impact whether one or more allocation bases should be used.

C. If the products use different amounts of the different resources in each department, then departmental rates rather than a factory rate should be used.

D. A standard cost system may be used with one or more than one allocation rate.

Question 9 - CMA 1284 4-4 - Overhead Allocation

Dori Castings, a job-order shop, uses a full-absorption, standard-cost system to account for its production costs. The O/H costs are applied on a direct-labor-hour basis. The amount of fixed factory O/H that Dori will apply to finished production is the

- A. Actual direct labor hours times the standard fixed factory O/H rate per direct labor hour.
- B. Standard units of output for the actual direct labor hours worked times the standard fixed factory O/H rate per unit of output.
- C. Actual fixed factory O/H cost per direct labor hour times the standard allowed direct labor hours.
- D. Standard allowed direct labor hours for the actual units of finished output times the standard fixed factory O/H rate

per direct labor hour.

A. The amount of fixed factory overhead applied is calculated as Standard rate \times Standard input allowed for the Actual level of output.

B. The amount of fixed factory overhead applied is calculated as Standard rate \times Standard input allowed for the Actual level of output.

C. The amount of fixed factory overhead applied is calculated as Standard rate \times Standard input allowed for the Actual level of output.

D. The amount of fixed factory overhead applied is calculated as Standard rate \times Standard input allowed for the Actual level of output.

Question 10 - CMA 1292 3-16 - 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.

Planning Data

	Annual	November
Fixed manufacturing overhead	\$1,200,000	\$100,000
Variable manufacturing overhead	2,400,000	220,000
Direct labor hours	48,000	4,000
Machine hours	240,000	22,000

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 total amount of overhead applied to production for November was

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

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

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

C. 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 \div 240,000). Now we can calculate the amount of overhead applied using this application rate and the number of machine hours planned for the actual level of output, which is 21,000 hours. The total overhead applied is \$15 \times 21,000, or \$315,000.

D. 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.

Question 11 - CMA 1290 3-4 - Overhead Allocation

Units of production is an appropriate overhead allocation base when

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

A. Units of production is not an appropriate overhead allocation base when several well-differentiated products are manufactured. Each individual product will require a different amount of inputs, and allocating overhead evenly to all units produced would produce an inequitable allocation.

B. Whether direct labor cost is high or low is not relevant in determining whether units of production is an appropriate overhead allocation base.

C. The only time when units of production is an appropriate allocation base is when the company produces only one product. Since each unit produced of that one product will require the same amount of inputs, allocating overhead according to units of production will produce an equitable allocation.

D. The relationship between direct material costs and direct labor costs is not relevant in determining whether units of production is an appropriate overhead allocation base.

Question 12 - CMA 696 3-21 - Overhead Allocation

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

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

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

B. Underapplied or overapplied overhead is never allocated only to finished goods inventory.

C. If the amount of underapplied or overapplied overhead is immaterial, it can be charged to cost of goods sold. However, if the amount is material, it is prorated among work in process and finished goods inventories and cost of goods sold.

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

Question 13 - IMA 08-P2-99 - Overhead Allocation

From the following budgeted data, calculate the budgeted indirect cost rate that would be used in a normal costing system.

Total direct labor hours	250,000
Direct costs	\$10,000,000
Total indirect labor hours	50,000
Total indirect labor-related costs	\$5,000,000

Total indirect non-labor-related costs \$7,000,000

- A. \$48.
- B. \$28.
- C. \$40.
- D. \$20.

A.

In a normal costing system, the budgeted indirect cost allocation rate is calculated by dividing the total indirect costs by the budgeted amount of the allocation base to be used in producing the product. As given in this question, that is 250,000 direct labor hours. The indirect costs are \$5,000,000 for labor-related costs and \$7,000,000 for non-labor-related costs, for total indirect costs of \$12,000,000. Dividing \$12,000,000 by 250,000 direct labor hours results in an indirect application rate of \$48 per direct labor hour.

Note that in a normal costing system, costs are applied to production on the basis of the actual usage of the allocation base multiplied by the application rate. This is different from standard costing, where costs are applied to production on the basis of the allowed usage of the allocation base for the actual output multiplied by the application rate.

B. This is the indirect non-labor related costs divided by the direct labor hours. This is partially correct, as the direct labor hours are the activity base to use for allocation of indirect costs in a normal costing system. However, all of the indirect costs, labor and non-labor, need to be included in the calculation.

C. This answer results from either dividing direct costs by direct labor hours or by dividing total indirect costs by total direct and indirect labor hours. The question is asking for an allocation of indirect costs. The number of indirect hours are irrelevant here, as indirect costs are allocated based on an activity base that is directly related to production, such as direct labor hours. In a normal costing system, the activity base used is the actual amount of the allocation base that was used in producing the product.

D. This is the indirect labor costs divided by the direct labor hours. This is partially correct, as the direct labor hours are the activity base to use for allocation of indirect costs in a normal costing system. However, all of the indirect costs, labor and non-labor, need to be included in the calculation.

Question 14 - CMA 689 4-28 - Overhead Allocation

The two most appropriate factors for budgeting manufacturing overhead expenses would be

- A. Machine hours and production volume.
- B. Management judgment and sales dollars.
- C. Management judgment and contribution margin.
- D. Management judgment and production volume.

A. Machine hours may not be an appropriate factor for budgeting manufacturing overhead expenses.

B. Sales dollars are not an appropriate factor for budgeting manufacturing overhead expenses as overhead is based on production value, not sales.

C. Contribution margin is not an appropriate factor for budgeting manufacturing overhead expenses as it is calculated by deducting the variable costs from the sales revenue.

D. Production volume is the most important factor in budgeting manufacturing overhead. Some overheads are variable and directly depend on the level of production. Other overheads are fixed and remain unchanged as long as the production volume remains within the relevant range. However, if production exceeds the relevant range, the fixed costs increase and thus, are also dependent on the level of production. Management judgment is a very important factor in manufacturing overhead budgeting, as budgeting is based on the prediction of future events. For example, overhead allocation is based on

predetermined rates. How accurately management assesses the future situation influences the accuracy of the standard costs used for application of overhead to production.

Question 15 - CIA 591 IV-11 - Overhead Allocation

The following information is available from the records of a manufacturing company that applies factory overhead based on direct labor hours:

Estimated overhead cost	\$500,000
Estimated labor hours	200,000
Actual overhead cost	\$515,000
Actual labor hours	210,000

Based on this information, factory overhead is

- A. Over-applied by \$40,750.
- B. Over-applied by \$10,000.
- C. Under-applied by \$15,000.
- D. Under-applied by \$9,524.

A. This answer reverses the actual and estimated dollar amounts in the calculation.

B. 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.

C. This answer is simply the difference between the actual and estimated overhead costs. Also, in this question overhead was overapplied, not underapplied.

D. This answer reverses the actual and estimated hours in the calculation.

Question 16 - CMA 690 4-5 - Overhead Allocation

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

	January 1	January 31
Finished goods	\$125,000	\$117,000
Work-in-process	235,000	251,000
Direct materials	134,000	124,000

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

A. 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.

- B. The overhead was overapplied, which will give a credit balance in the overhead control account.
- 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 17 - CMA 690 4-2 - Overhead Allocation

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

	January 1	January 31
Finished goods	\$125,000	\$117,000
Work-in-process	235,000	251,000
Direct materials	134,000	124,000

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. \$489,000.
- B. \$673,000.
- C. \$681,000.
- D. \$665,000.

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

B. This is the cost of goods sold.

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 inventory 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 available 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 ($\$300,000 \times 60\%$). Adding the prime costs and the overhead together, we get \$681,000 as total manufacturing costs.

D. This is the cost of goods manufactured.

Question 18 - CMA 1292 3-15 - 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.

Planning Data

	Annual	November
Fixed manufacturing overhead	\$1,200,000	\$100,000
Variable manufacturing overhead	2,400,000	220,000
Direct labor hours	48,000	4,000
Machine hours	240,000	22,000

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 predetermined overhead application rate for Nanjones Company is

- A. \$5.00.
- B. \$10.00.
- C. \$25.00.
- D. \$15.00.

A. This is the predetermined fixed manufacturing overhead application rate only. It doesn't take into consideration variable manufacturing overheads.

B. This is the predetermined variable manufacturing overhead application rate only. It doesn't take in consideration fixed manufacturing overheads.

C. This is the fixed factory overhead rate per labor hour. In this question the denominator has to be machine hours.

D. 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 ($\$3,600,000 \div 240,000$).

Question 19 - CMA 1285 4-25 - 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. \$909,375
- B. \$937,500
- C. \$750,000
- D. \$600,000

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

B. 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%).

C. This is the amount of factory overhead.

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

Question 20 - CMA Sample Q3-5 - 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	<u>345,000</u>
	\$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	<u>76,000</u>
	\$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. \$24,000 overapplied.
- C. \$11,000 overapplied.
- D. \$11,000 underapplied.

A. The amount in this answer is correct, but overhead 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.

B. 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 is 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.

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

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

Question 21 - CIA 1190 IV-6 - Overhead Allocation

Overhead costs usually include

- A. Overtime premiums.
- B. Materials price variances.
- C. Prime costs.
- D. Abnormal spoilage.

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 usually 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 overhead amount to allocate. Hence, in most cases overtime premiums are included in overhead costs.

B. 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.

C. Prime costs are the costs of direct material and direct labor. These are the direct inputs and are not included in overhead costs.

D. 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.

Question 22 - CMA 1295 3-23 - Overhead Allocation

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

	November 1	November 30
Direct materials	\$67,000	\$62,000
Work-in-process	145,000	171,000
Finished goods	85,000	78,000

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

Madtrack 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 debit, overapplied.
 - B. \$8,000 debit, underapplied.
 - C. \$8,000 credit, underapplied.
 - D. \$8,000 credit, overapplied.
- A. Overhead was overapplied, but this would be a credit balance in the account.
- B. This is incorrect because the account balance would be a credit and this would represent an overapplied amount.
- C. There would be a credit balance in the account, but this would represent an overapplied amount, not an underapplied amount.
- D. 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.**

Question 23 - CMA 690 4-3 - Overhead Allocation

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

	January 1	January 31
Finished goods	\$125,000	\$117,000
Work-in-process	235,000	251,000
Direct materials	134,000	124,000

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. \$681,000.
 - B. \$657,000.
 - C. \$665,000.
 - D. \$673,000.
- A. This is the total cost of manufacturing.
- B. This answer is incorrect.
- C.**

To calculate the cost of goods manufactured for January, we simply take the total cost of manufacturing and adjust it for the change in work-in-process inventory. 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 inventory 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 available 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 ($\$300,000 \times 60\%$). Adding the prime costs and the overhead together, we get \$681,000 of total manufacturing costs. Work-in-process increased during the period by \$16,000. This means that \$16,000 of the work performed during the period ended up in work-in-process and not finished goods inventory, so this amount needs to be subtracted from the total manufacturing cost to calculate the cost of goods manufactured. The cost of goods manufactured is $\$681,000 - \$16,000$, or $\$665,000$.

D. This is the cost of goods sold.

Question 24 - CMA 690 4-4 - Overhead Allocation

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

	January 1	January 31
Finished goods	\$125,000	\$117,000
Work-in-process	235,000	251,000
Direct materials	134,000	124,000

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. \$681,000.
- B. \$697,000.
- C. \$673,000.
- D. \$657,000.

A. This answer is incorrect.

B. This answer is incorrect.

C.

The cost of goods sold can be calculated as the beginning finished goods inventory plus the cost of goods manufactured minus the ending finished goods inventory. This is $\$125,000 + \$665,000 - \$117,000$ and totals $\$673,000$.

To calculate the cost of goods manufactured, we simply take the total cost of manufacturing and adjust it for the change in work-in-process inventory. 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 inventory 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 available 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 ($\$300,000 \times 60\%$). Adding the prime costs and the overhead together, we get \$681,000 as total manufacturing costs. Work-in-process inventory increased during the period by \$16,000. This means that \$16,000 of the work performed during the period ended up in work-in-process and not finished goods inventory, so this amount needs to be subtracted from cost of goods manufactured. The cost of goods manufactured is $\$681,000 - \$16,000$, or \$665,000.

Cost of goods sold is beginning finished goods inventory + cost of goods manufactured – ending finished goods inventory. Finished goods inventory decreased by \$8,000 during January. This means that this amount of 'old' inventory was sold in addition to the finished goods manufactured this period. Cost of goods manufactured plus the amount of decrease in finished goods inventory equals the cost of goods sold: \$673,000 ($\$665,000 + \$8,000$).

D. This answer is incorrect.

Question 25 - CMA 1293 3-15 - 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. Manufacturing is limited to a single product flowing through identical departments in a fixed sequence.
- C. Various products are manufactured that do not pass through the same departments or use the same manufacturing techniques.
- D. Cost drivers, such as direct labor, are the same over all processes.

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 there is only one product produced, the company can use one allocation rate, since all of the costs will go to that product.

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 the cost drivers are the same in all processes, then only one allocation basis is needed. .

Question 26 - CMA 1292 3-1 - 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. Aiding in variable costing for internal reporting.
- C. Measuring income and assets for external reporting.
- D. Evaluating revenue center performance.

A. The allocation of costs is not part of the cash budgeting and expenditure control activities.

B. 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.

C. 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.

D. 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.

Question 27 - CMA 1285 4-27 - 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. \$75,000.
- B. \$300,000.
- C. \$100,000.
- D. \$225,000.

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

B. 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: $.75 \text{ EWIP} + \$2,500,000 - \text{EWIP} = \$2,425,000$. This simplifies to $\$2,500,000 - .25 \text{ EWIP} = \$2,425,000$. Solving for EWIP, we get $\text{EWIP} = \$300,000$.

C. This answer is incorrect.

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

Question 28 - CMA 693 3-2 - 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. Preferring plant-wide application rates that are applied to machine hours rather than incurring the cost of detailed allocations.
- B. Treating direct labor as an indirect manufacturing cost in an automated factory.
- C. Using throughput time as an application base to increase awareness of the costs associated with lengthened throughput time.
- D. Using several machine cost pools to measure product costs on the basis of time in a machine center.

A. With computer systems enabling more detailed allocations, there is a trend to move away from plant-wide rates for allocation.

B. 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.

C. This is a trend in costing because the time that a unit spends in the factory does have a cost associated 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.

D. The trends now are to use several cost pools in the allocation of the costs.

Question 29 - CMA 1285 4-26 - 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. \$1,150,000
- B. \$812,500
- C. \$750,000
- D. \$937,500

A. This answer is incorrect.

B. Total manufacturing costs are equal to direct materials plus direct labor plus overhead. We know that overhead is 30% of total manufacturing costs of \$2,500,000, which is \$750,000. We know that overhead is 80% of direct labor and direct labor is therefore \$937,500 ($\$750,000 \div 80\%$). These add up to \$1,687,500. Direct material used for the year is therefore total manufacturing costs of \$2,500,000 minus \$1,687,500, which is \$812,500.

C. This is the amount of factory overhead.

D. This is the amount of direct labor.

Question 30 - CIA 1193 IV-4 - Overhead Allocation

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. \$25,000
- D. \$30,000

A. This is the total labor cost.

B. This is the direct materials cost.

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

D.

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.

Question 31 - CIA 595 III-94 - 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. \$18,400
- B. \$34,780
- C. \$18,000
- D. None of the answers are correct.

A. This answer does not include the costs allocated based on machine hours.

B. This question is actually fairly simple and just requires that we make three allocations of overhead. Overhead is allocated based on direct labor, raw materials and machine hours. These calculations, in this order, are: $\$8,000 \times 100\% = \$8,000$; $\$2,000 \times 20\% = \400 ; $140 \times \$117 = \$16,380$. 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 overhead costs that are allocated based on raw materials and machine hours.

D. The correct choice is given.

Question 32 - CMA 696 3-1 - 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.

Budgeted	Budgeted
Denominator	

Capacity Levels	Level (units of output)	Overhead Cost Rate
Theoretical	1,500,000	\$.0667
Practical	1,250,000	.0800
Normal	775,000	.1290
Master-budget	800,000	.1250

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. Normal capacity.
- B. Expected annual activity.
- C. Master-budget capacity.
- D. Theoretical capacity.

A. Normal capacity is the long-term average, so this would approximate the actual volume.

B. Expected annual activity would essentially be the same as the master budget level and this is would approximate the actual volume.

C. This is the expected level of output for the year so this would approximate the actual volume.

D. Theoretical capacity is the absolute maximum that can be produced. This would not approximate the actual volume levels.