

Cost Accounting: A Managerial Emphasis, 16e, Global Edition (Horngren)
Chapter 17 Process Costing

17.1 Objective 17.1

1) Which of the following is the costing system used for mass produced like or similar units of products?

- A) inventory-costing systems
- B) job-costing systems
- C) process-costing systems
- D) weighted-average costing systems

Answer: C

Diff: 1

Objective: 1

AACSB: Analytical thinking

2) Which of the following companies is most likely to use process costing?

- A) Crimpson Color, a company selling customized garments for niche customers
- B) Effel & Associates, a consulting firm providing various audit and related services
- C) Dental Bright Inc., a company manufacturing and selling toothpaste on a large scale
- D) Grimpy Corp., a company manufacturing furniture for customers as per their requirements

Answer: C

Diff: 2

Objective: 1

AACSB: Analytical thinking

3) Process costing would most likely be used to assign costs to products produced by which of these companies?

- A) Jones Flour Mill
- B) Riley Automobile Dealer
- C) Big Time Yacht Corporation
- D) Sullivan and Murphy Law Firm LLC

Answer: A

Diff: 2

Objective: 1

AACSB: Analytical thinking

4) Which of the following statements is true?

- A) In a job-costing system, average production cost is calculated for all units produced.
- B) In a process-costing system, each unit uses approximately the same amount of resources.
- C) In a job-costing system, overheads are allocated to all units equally.
- D) In a process-costing system, individual jobs use different quantities of production resources.

Answer: B

Diff: 2

Objective: 1

AACSB: Analytical thinking

EA

5) Which of the following most accurately describes the contrast between process and job costing?

- A) In process costing, they include all the factors of production but job costing includes only materials and labor
- B) job costing includes materials, labor and overhead while process costing only considers conversion costs
- C) the main difference is the extent of averaging used to compute the unit costs
- D) job costing measures the variable cost of identical jobs while process costing measures the cost of identical products using average units costs of materials and conversion costs, some of which are fixed costs

Answer: C

Diff: 3

Objective: 1

AACSB: Analytical thinking

6) Which if the following are not conversion costs?

- A) the cost of direct laborers who assemble the parts of an automobile
- B) the cost of tires on an automobile
- C) the cost of depreciation on an automobile assembly plant
- D) the cost of electricity to run the tools in the automobile assembly plant

Answer: B

Diff: 2

Objective: 1

AACSB: Analytical thinking

7) Which of the following statements best describes conversion costs?

- A) Conversion costs are all manufacturing and nonmanufacturing costs.
- B) Conversion costs are all manufacturing costs other than direct materials costs.
- C) Conversion costs are all nonmanufacturing costs including marketing costs.
- D) Conversion costs are all nonmanufacturing costs other than fixed selling and distribution costs.

Answer: B

Diff: 2

Objective: 1

AACSB: Analytical thinking

8) Job-costing systems separate costs into cost categories according to when costs are introduced into the process of manufacture.

Answer: FALSE

Explanation: Process-costing systems separate costs into cost categories according to when costs are introduced into the process of manufacture.

Diff: 2

Objective: 1

AACSB: Analytical thinking

9) The principal difference between process costing and job costing is that in job costing an averaging process is used to compute the unit costs of products or services.

Answer: FALSE

Explanation: The averaging process is used to calculate unit costs in process costing.

Diff: 2

Objective: 1

AACSB: Analytical thinking

EA

10) If manufacturing labor costs are added to the process at a different time compared to other conversion costs, an additional cost category—direct manufacturing labor costs—would be needed to assign these costs to products.

Answer: TRUE

Diff: 2

Objective: 1

AACSB: Analytical thinking

11) Estimating the degree of completion for the calculation of equivalent units is usually easier for conversion costs than it is for direct materials.

Answer: FALSE

Explanation: Estimating the degree of completion is easier for the calculation of direct materials since direct materials can be measured more easily than conversion costs.

Diff: 2

Objective: 1

AACSB: Analytical thinking

12) If two different direct materials—such as the circuit board and microphone—are added to the process at different times, a company will need two different direct-materials categories to assign direct materials cost.

Answer: TRUE

Diff: 2

Objective: 1

AACSB: Analytical thinking

13) Conversion costs include direct materials and direct labor but excludes all other manufacturing and non-manufacturing costs.

Answer: FALSE

Explanation: Conversion costs are all manufacturing costs other than direct material costs, including manufacturing labor, energy, plant depreciation, and so on.

Diff: 2

Objective: 1

AACSB: Analytical thinking

14) Job-costing and process-costing are mutually exclusive, hence a hybrid costing system that combines elements of both job and process costing cannot be used.

Answer: FALSE

Explanation: Job-costing and process-costing are not mutually exclusive. Many companies use a hybrid costing system combining elements of both job and process costing.

Diff: 3

Objective: 1

AACSB: Analytical thinking

15) There are basically two distinct methods of calculating product costs.

Required:

Compare and contrast the two methods.

Answer: In job costing the job or product is a distinctly identifiable product or service. Each job requires (or can require) vastly different amounts of input. Job costing is usually associated with products that are unique or heterogeneous. Thus, each job requires different amounts of input, and they can require vastly different amount of costs to finish. Job-costed products tend to be high cost per unit. Thus the costs of each (unique) job are important for planning, pricing, and profitability.

In process costing, the jobs or products are similar (or homogeneous). Each job usually requires the same inputs, and results in approximately the same costs per unit. The cost of a product or service is obtained by assigning total costs to many identical or similar units. We assume each unit receives the same amount of direct material costs, direct manufacturing labor costs, and indirect manufacturing costs. Unit costs are then computed by dividing total costs by the number of units.

The principal difference between process costing and job costing is the extent of averaging used to compute unit costs. As noted above in job costing, individual jobs use different quantities of production resources; whereas in process costing, we assume that each job uses approximately the same amount of resources.

Diff: 2

Objective: 1

AACSB: Analytical thinking

16) Why do we need to accumulate and calculate unit costs in process costing (and also job costing)?

Answer: We need to accumulate unit costs to:

1. Budget (planning)
2. Price
3. Account for the costs

1. *Budgeting* — To operate a successful business, we should prepare budgets, review the results, and make decisions as to how well our business is doing. Our business has formulated plans for the future. The resources we need for the future (materials, conversion costs, facilities, etc.) will depend on our estimate of the resources we need to accomplish these goals. An important part of these estimates is the unit costs of the products we plan to produce. These unit costs will tell us how many dollars we must acquire to accomplish our plans.

2. *Price* — In order to be a profitable business, we must sell our product at a price in excess of what it costs us to produce the product. Essential for the pricing decision is the cost per unit. We will also learn whether we can sell a product at a profit.

3. *Accounting* — During the course of the accounting period, we will be accumulating costs. At the end of the accounting period, we must allocate this pool of costs between the units that were transferred out and the goods in ending inventory. Unit costs are essential for this purpose.

Diff: 1

Objective: 1

AACSB: Analytical thinking

17) The president of the Gulf Coast Refining Corporation wants to know why his golfing partner, who is the chief financial officer of a large construction company, calculates his costs by the job, but his own corporation calculates costs by large units rather than by individual barrel of oil.

Answer: Oil refineries use process costing to calculate their costs per barrel of oil. Each barrel of oil is essentially the same. Thus, costs are accumulated for all the oil processed during a given time period, and the total costs are divided by the barrels of oil produced. An average cost is calculated. Since the costs to actually produce the oil are essentially the same, accuracy is not lost by this process.

The construction company calculates costs by each job, since each job can require substantially different amounts of the various inputs. Thus, the cost of each job could be radically different from the other jobs.

Diff: 1

Objective: 1

AACSB: Analytical thinking

18) Describe the differences between process costing and job costing. Discuss some typical products which would be more likely to use process costing as compared to some which would be more likely to use job costing.

Answer: When products are unique, job costing is a more appropriate method to use in collecting costs and making decisions regarding price levels. In a job-costing system, individual jobs require differing levels of resources. Each job is treated separately and the resources used to complete the job have to be calculated separately. Construction jobs are most likely to use job costing because of their unique specifications.

In a process-costing system, the units produced as output are very similar to one another. As a result, the means by which the raw material is converted to a finished product is common among all of the products. This allows the conversion costs to be summed up and divided by the total number of units for an accurate conversion cost on a unit by unit basis. Some typical types of products which are likely to use process costing are oil refineries, ice cream, various food preparation industries, etc. This is because the raw material is processed in a similar manner for all of the units produced.

Diff: 1

Objective: 1

AACSB: Analytical thinking

17.2 Objective 17.2

1) In a process-costing system average unit costs are calculated _____.

- A) by dividing total costs in a given accounting period by total units produced in that period
- B) by multiplying total costs in a given accounting period by total units produced in that period
- C) by dividing total costs in a given accounting period by units started in that period
- D) by multiplying total costs in a given accounting period by units started in that period

Answer: A

Diff: 1

Objective: 2

AACSB: Analytical thinking

2) Vital Industries manufactured 2400 units of its product Huge in the month of April. It incurred a total cost of \$132,000 during the month. Out of this \$132,000, \$45,700 comprised of direct materials used in the product and the rest was incurred because of the conversion cost involved in the process. Ryan had no opening or closing inventory. What will be the total cost per unit of the product, assuming conversion costs contained \$10,000 of indirect labor?

- A) \$55
- B) \$50
- C) \$39
- D) \$35

Answer: A

Explanation: Total cost per unit = $\$132,000 / 2400 = \55

Diff: 3

Objective: 2

AACSB: Application of knowledge

3) Serile Pharma places 800 units in production during the month of January. All 800 units are completed during the month. It had no opening inventory. Direct material costs added during January was \$74,000 and conversion costs added during January was \$8400. What is the total cost per unit of the product produced during January?

- A) \$103
- B) \$10
- C) \$80
- D) \$93

Answer: A

Explanation: Total cost per unit = $[(\$74,000 + \$8400) / 800] = \$103$

Diff: 3

Objective: 2

AACSB: Application of knowledge

4) When a company has no opening or ending inventory during the month, the cost per unit is calculated by dividing the total costs incurred in the period by the total units produced during the period.

Answer: TRUE

Diff: 2

Objective: 2

AACSB: Analytical thinking

17.3 Objective 17.3

1) The purpose of the equivalent-unit computation is to _____.

- A) convert completed units into the amount of partially completed output units that could be made with that quantity of input
- B) use a common metric to estimate the amount of work done on units in a period
- C) predict the future production capabilities of the organization
- D) satisfy the GAAP requirements which requires all partially completed goods to be reported as equivalent-units

Answer: B

Diff: 2

Objective: 3

AACSB: Analytical thinking

2) Which of the following is true regarding estimates of completion of units in a process costing system?

- A) estimating the degree of completion with regards to conversion costs is more of a science than an art
- B) estimating the degree of completion with regards to conversion costs is usually easier and more accurate than estimating the degree of completion with regards to direct materials
- C) estimating the degree of completion with regards to direct materials is usually easier and more accurate than estimating the degree of completion with regards to conversion costs
- D) when estimating degree of completion, the degree of completion with regards to conversion costs is usually a portion similar to the degree of completion with regards to direct materials

Answer: C

Diff: 2

Objective: 3

AACSB: Analytical thinking

3) When a Bakery transfers goods from the Mixing Department to the Baking Department, the accounting entry would be _____.

- A) Debit: Work in Process — Mixing Department
Credit: Work in Process — Baking Department
- B) Debit: Work in Process — Baking Department
Credit: Accounts Payable
- C) Debt: Work in Process — Baking Department
Credit: Work in Process — Mixing Department
- D) Debt: Work in Process — Mixing Department
Credit: Accounts Payable

Answer: C

Diff: 2

Objective: 3

AACSB: Analytical thinking

EA

4) Charlie Chairs Inc., manufactures plastic moldings for car seats. Its costing system utilizes two cost categories, direct materials and conversion costs. Each product must pass through Department A and Department B. Direct materials are added at the beginning of production. Conversion costs are allocated evenly throughout production.

Data for Department A for February 2017 are:

Work in process, beginning inventory, 30% converted	200 units
Units started during February	1000 units
Work in process, ending inventory	240 units

Costs for Department A for February 2017 are:

Work in process, beginning inventory:	
Direct materials	\$150,000
Conversion costs	\$208,000
Direct materials costs added during February	\$606,000
Conversion costs added during February	\$431,000

What is the unit cost per equivalent unit of beginning inventory in Department A? (Round the final answer to the nearest whole dollar.)

- A) \$750
- B) \$2717
- C) \$3735
- D) \$4217

Answer: D

Explanation: Direct materials per unit ($\$150,000 / 200$ units) \$750
Conversion costs per unit ($\$208,000 / (200 \times 0.3)$ units) 3467
Total costs per unit \$4217

Diff: 2

Objective: 3

AACSB: Application of knowledge

EA

5) Charlie Chairs Inc., manufactures plastic moldings for car seats. Its costing system utilizes two cost categories, direct materials and conversion costs. Each product must pass through Department A and Department B. Direct materials are added at the beginning of production. Conversion costs are allocated evenly throughout production.

Data for Department A for February 2017 are:

Work in process, beginning inventory, 30% converted	200 units
Units started during February	800 units
Work in process, ending inventory	240 units

Costs for Department A for February 2017 are:

Work in process, beginning inventory:	
Direct materials	\$150,000
Conversion costs	\$210,000
Direct materials costs added during February	\$603,000
Conversion costs added during February	\$429,000

How many units were completed and transferred out of Department A during February?

- A) 440 units
- B) 800 units
- C) 760 units
- D) 1000 units

Answer: C

Explanation: Number of units completed and transferred out = 200 units + 800 units - 240 units = 760 units

Diff: 2

Objective: 3

AACSB: Application of knowledge

EA

6) Dessa Cabinetry, Inc., manufactures standard sized modular cabinet units for kitchens and other applications within the home. Its costing system utilizes two cost categories, direct materials and conversion costs. Each product must pass through the rough cut department and the finish department. Direct materials are added at the beginning of production. Conversion costs are allocated evenly throughout production.

Data for Finishing Department for March 2017 are:

Work in process, beginning inventory, 25% converted	850 units
Units started during February	1200 units
Work in process, ending inventory	680 units

Costs for Finishing Department for March 2017 are:

Work in process, beginning inventory:	
Direct materials	\$204,000
Conversion costs	\$210,000
Direct materials costs added during February	\$429,000
Conversion costs added during February	\$140,000

What is the unit cost per equivalent unit of the beginning inventory in the Finishing Department? (Round the final answer to the nearest whole dollar.)

- A) \$240
- B) \$300
- C) \$988
- D) \$1228

Answer: D

Diff: 2

Objective: 3

AACSB: Application of knowledge

EA

7) Dessa Cabinetry, Inc., manufactures standard sized modular cabinet units for kitchens and other applications within the home. Its costing system utilizes two cost categories, direct materials and conversion costs. Each product must pass through the rough cut department and the finish department. Direct materials are added at the beginning of production. Conversion costs are allocated evenly throughout production.

Data for Finishing Department for March 2017 are:

Work in process, beginning inventory, 20% converted	1000 units
Units started during February	1800 units
Work in process, ending inventory	500 units

Costs for Finishing Department for March 2017 are:

Work in process, beginning inventory:	
Direct materials	\$200,000
Conversion costs	\$204,000
Direct materials costs added during February	\$428,000
Conversion costs added during February	\$141,000

How many units were completed and transferred out of the Finishing Department during March?

- A) 1000 units
- B) 1800 units
- C) 2300 units
- D) 2660 units

Answer: C

Explanation: Number of units completed and transferred out = 1000 units + 1800 units - 500 units = 2300 units

Diff: 2

Objective: 3

AACSB: Application of knowledge

8) Which of the following entries is used to record direct materials purchased and used in production during a month in the Assembly department, before transferring the goods to Testing department?

- A) Debit: Work in Process—Assembly
 Credit: Wages Payable Control
- B) Debit: Accounts Payable Control
 Credit: Work in Process—Assembly
- C) Debit: Work in Process—Assembly
 Credit: Accounts Payable Control
- D) Debit: Accounts Payable Control
 Credit: Cash

Answer: C

Diff: 2

Objective: 3

AACSB: Analytical thinking

9) Stefan Ceramics is in the business of selling ceramic vases. It has two departments – molding and finishing. Molding department purchases tungsten carbide and produces ceramic vases out of it. Ceramic Vases are then transferred to finishing department, which designs it as per the requirement of the customers.

During the month of July, molding department purchased 720 kgs of tungsten carbide at \$280 per kg. It started manufacture of 4200 vases and completed and transferred 3800 vases during the month. It has 400 vases in the process at the end of the month. It incurred direct labor charges of \$1500 and other manufacturing costs of \$1300, which included electricity costs of \$300. Stefan had no inventory of tungsten carbide at the end of the month. It also had no beginning inventory of vases. The ending inventory was 50% complete in respect of conversion costs.

Which of the following journal entry would record the tungsten carbide purchased and used in production during July?

- A) Work in Process—Molding \$3400
 Accounts Payable Control \$3400
- B) Work in Process—Molding \$201,600
 Accounts Payable Control \$201,600
- C) Accounts Payable Control \$3400
 Work in Process—Molding \$3400
- D) Accounts Payable Control \$201,600
 Work in Process—Molding \$201,600

Answer: B

Explanation: $720 \text{ kg} \times \$280 = \$201,600$

Diff: 2

Objective: 3

AACSB: Application of knowledge

EA

10) Stefan Ceramics is in the business of selling ceramic vases. It has two departments – molding and finishing. Molding department purchases tungsten carbide and produces ceramic vases out of it. Ceramic Vases are then transferred to finishing department, which designs it as per the requirement of the customers.

During the month of July, molding department purchased 500 kgs of tungsten carbide at \$60 per kg. It started manufacture of 4000 vases and completed and transferred 3900 vases during the month. It has 100 vases in the process at the end of the month. It incurred direct labor charges of \$1400 and other manufacturing costs of \$600, which included electricity costs of \$500. Stefan had no inventory of tungsten carbide at the end of the month. It also had no beginning inventory of vases. The ending inventory was 55% complete in respect of conversion costs.

Which of the following journal entries would be correct to record direct labor for July?

- A) Work in Process—Molding \$30,000
 Accounts Payable Control \$30,000
- B) Work in Process—Molding \$1400
 Overhead Control \$1400
- C) Work in Process—Molding \$1400
 Wages Payable Control \$1400
- D) Work in Process—Molding \$1400
 Work in Process—Finishing \$1400

Answer: C

Diff: 2

Objective: 3

AACSB: Application of knowledge

11) Stefan Ceramics is in the business of selling ceramic vases. It has two departments – molding and finishing. Molding department purchases tungsten carbide and produces ceramic vases out of it. Ceramic Vases are then transferred to finishing department, which designs it as per the requirement of the customers.

During the month of July, molding department purchased 720 kgs of tungsten carbide at \$280 per kg. It started manufacture of 4200 vases and completed and transferred 3800 vases during the month. It has 400 vases in the process at the end of the month. It incurred direct labor charges of \$1700 and other manufacturing costs of \$600, which included electricity costs of \$700. Stefan had no inventory of tungsten carbide at the end of the month. It also had no beginning inventory of vases. The ending inventory was 40% complete in respect of conversion costs. What is the total conversion costs for the month of July?

- A) \$3000
- B) \$2300
- C) \$1600
- D) \$1700

Answer: B

Explanation: Total conversion cost = \$1700 + \$600 = \$2300

Diff: 2

Objective: 3

AACSB: Application of knowledge

12) Stefan Ceramics is in the business of selling ceramic vases. It has two departments – molding and finishing. Molding department purchases tungsten carbide and produces ceramic vases out of it. Ceramic Vases are then transferred to finishing department, which designs it as per the requirement of the customers.

During the month of July, molding department purchased 720 kgs of tungsten carbide at \$280 per kg. It started manufacture of 4200 vases and completed and transferred 3200 vases during the month. It has 1000 vases in the process at the end of the month. It incurred direct labor charges of \$1900 and other manufacturing costs of \$500, which included electricity costs of \$900. Stefan had no inventory of tungsten carbide at the end of the month. It also had no beginning inventory of vases. The ending inventory was 45% complete in respect of conversion costs. What is the cost of tungsten carbide that will be assigned to vases finished and transferred to the finishing department for the month of July?

- A) \$201,600
- B) \$156,900
- C) \$189,280
- D) \$153,600

Answer: D

Explanation: Tungsten carbide cost per unit = $[(720 \times 280) / 4200] = \48 per unit

Cost of Tungsten carbide that will be assigned to vases finished and transferred to the finishing department = $\$48 \times 3200$ units = \$153,600

Diff: 3

Objective: 3

AACSB: Application of knowledge

13) Which of the following statements is true of conversion costs?

- A) Estimating the degree of completion is usually easier for direct material costs than for conversion costs.
- B) The calculation of equivalent units is relatively easy for the textile industry.
- C) The conversion cost needed for a completed unit and the conversion cost in a partially completed unit can be measured accurately.
- D) If conversion costs are added evenly during the assembly we can conclude that there are more than one indirect-cost category.

Answer: A

Diff: 2

Objective: 3

AACSB: Analytical thinking

14) Underestimating the degree of completion of ending work in process leads to increase in operating income.

Answer: FALSE

Explanation: Overestimating the degree of completion of ending work in process decreases the costs assigned to goods transferred out and eventually to cost of goods sold and increases operating income.

Diff: 2

Objective: 3

AACSB: Analytical thinking

EA

15) The last step in a process-costing system is to compute cost per equivalent unit.

Answer: FALSE

Explanation: The last step in a process-costing system is to assign total costs to units completed and to units in ending work in process.

Diff: 2

Objective: 3

AACSB: Analytical thinking

16) Equivalent units is a derived measure of output calculated by converting the quantity of inputs into the amount of completed output that could be produced with that quantity of input.

Answer: TRUE

Diff: 2

Objective: 3

AACSB: Analytical thinking

17) The accuracy of the completion estimate of conversion costs depends on the care, skill, and experience of the estimator and also the nature of the conversion process.

Answer: TRUE

Diff: 2

Objective: 3

AACSB: Analytical thinking

18) In a process-costing system, there is always a separate Work-in-Process account for each different process, or department in the process.

Answer: TRUE

Diff: 2

Objective: 3

AACSB: Analytical thinking

19) A production cost worksheet is used to summarize total costs to account for, compute cost per equivalent unit, and assign total costs to units completed and to units in ending work-in-process.

Answer: TRUE

Explanation: A production cost worksheet is used to summarize total costs to account for, compute cost per equivalent unit, and assign total costs to units completed and to units in ending work-in-process.

Diff: 2

Objective: 3

AACSB: Analytical thinking

20) When calculating the equivalent units, we should only focus on dollar amounts of inventory.

Answer: FALSE

Explanation: When calculating the equivalent units, we should disregard dollar amounts and focus should be on quantities.

Diff: 2

Objective: 3

AACSB: Analytical thinking

EA

21) The accounting entry to record the conversion cost of the Assembly Department is:

Work in Process-Assembly Department

 Accounts Payable Control

Answer: FALSE

Explanation: The correct accounting entry is:

Work in Process—Assembly Department

 Various accounts such as Wages Payable Control and Accumulated Depreciation

Diff: 2

Objective: 3

AACSB: Analytical thinking

22) Big Bernard Corporation was recently formed to produce a semiconductor chip that forms an essential part of the personal computer manufactured by a major corporation. The direct materials are added at the start of the production process while conversion costs are added uniformly throughout the production process. June is Big Bernard's first month of operations, and therefore, there was no beginning inventory. Direct materials cost for the month totaled \$950,000, while conversion costs equaled \$4,625,000. Accounting records indicate that 475,000 chips were started in June and 425,000 chips were completed.

Ending inventory was 50% complete as to conversion costs.

Required:

a. What is the total manufacturing cost per chip for June?

b. Allocate the total costs between the completed chips and the chips in ending inventory.

Answer: a.

	Direct Materials	Conversion Costs	Total
Cost to account for	\$950,000	\$4,625,000	\$5,575,000
Divided by equiv. units	475,000	450,000	
Cost per equivalent units	<u>\$2.00</u>	<u>\$10.28</u>	\$12.28

Equivalent unit for conversion costs =
425,000 completed + (50,000 × 0.5 completed) =
425,000 + 25,000 = 450,000

b. Completed units = \$12.28 × 425,000 = \$5,219,000
Ending work in process = Direct materials = 50,000 × \$2.00 = \$ 100,000
Conversion costs = 25,000 × \$10.28 = 257,000
Total ending work in process \$357,000

Diff: 2

Objective: 3

AACSB: Application of knowledge

23) The Esther Valve Corporation was recently formed to produce a brass valve that forms an essential part of a compressor manufactured by a major corporation. The direct materials are added at the start of the production process while conversion costs are added uniformly throughout the production process. September is Parson's first month of operations, and therefore, there was no beginning inventory. Direct materials cost for the month totaled \$2,800,000, while conversion costs equaled \$3,600,000. Accounting records indicate that 1,600,000 valves were started in September and 1,400,000 valves were completed.

Ending inventory was 20% complete as to conversion costs.

Required:

- What is the total manufacturing cost per valve for September?
- Allocate the total costs between the completed valves and the valves in ending inventory.

Answer:

a.

	Direct Materials	Conversion Costs	Total
Cost to account for	\$2,800,000	\$3,600,000	\$6,400,000
Divided by equiv. units	<u>1,600,000</u>	<u>1,440,000</u>	
Cost per equivalent units	<u>\$1.75</u>	<u>\$2.50</u>	\$4.25

$$\begin{aligned} \text{Equivalent unit for conversion costs} &= \\ &1,400,000 \text{ completed} + (200,000 \times 0.2 \text{ completed}) = \\ &1,400,000 + 40,000 = 1,440,000 \end{aligned}$$

$$\text{b. Completed units} = \$4.25 \times 1,400,000 = \$5,950,000$$

$$\begin{aligned} \text{Ending work in process} &= \text{Direct materials} = 200,000 \times \$1.75 = \$350,000 \\ \text{Conversion costs} &= 40,000 \times \$2.50 = \underline{100,000} \\ \text{Total ending work in process} &= \underline{\underline{\$450,000}} \end{aligned}$$

Diff: 2

Objective: 3

AACSB: Application of knowledge

24) Sodus Chemical Inc. placed 220,000 liters of direct materials into the mixing process. At the end of the month, 5,000 liters were still in process, 30% converted as to labor and factory overhead. All direct materials are placed in mixing at the beginning of the process and conversion costs occur evenly during the process. Sodus uses weighted-average costing.

Required:

- a. Determine the equivalent units in process for direct materials and conversion costs, assuming there was no beginning inventory.
- b. Determine the equivalent units in process for direct materials and conversion costs, assuming that 12,000 liters of chemicals were 40% complete prior to the addition of the 220,000 liters.

Answer:

- a. Direct materials:

Beginning inventory	0 liters
Units started	<u>220,000 liters</u>
Equivalent units	<u>220,000 liters</u>

Conversion costs:

Beginning inventory	0 liters
Units started	<u>220,000 liters</u>
To account for	220,000 liters
Units transferred out	<u>215,000 liters</u>
Ending inventory	<u>5,000 liters</u>
Units transferred out	215,000 liters
Ending inventory, 30% complete	<u>1,500 liters</u>
Equivalent units	<u>216,500 liters</u>

- b. Direct materials:

Completed and transferred out (215,000 + 12,000)	227,000 liters
Ending inventory, 100% complete	<u>5,000 liters</u>
Equivalent units	<u>232,000 liters</u>

Conversion costs:

Completed and transferred out	227,000 liters
Ending inventory, 30% complete	<u>1,500 liters</u>
Equivalent units	<u>228,500 liters</u>

Diff: 2

Objective: 3

AACSB: Application of knowledge

25) Bright Colors Company placed 315,000 gallons of direct materials into the mixing process. All direct materials are placed in mixing at the beginning of the process and conversion costs occur evenly during the process. Bright Colors uses weighted-average costing. The initial forecast for the end of the month was to have 75,000 gallons still in process, 15% converted as to labor and factory overhead.

Required:

- a. Determine the total equivalent units (in process and transferred out) for direct materials and for conversion costs, assuming there was no beginning inventory.
- b. With the installation of a new paint processing filtration device, the forecast for the end of the month was to have 50,000 gallons still in process, 70% converted as to labor and factory overhead. In this event, determine the equivalent units (in process and transferred out) for direct materials and for conversion costs, assuming there was no beginning inventory.

Answer:

- a. Direct materials:

Beginning inventory	0 gallons
Units started	<u>315,000 gallons</u>
Equivalent units	<u>315,000 gallons</u>

Conversion costs:

Beginning inventory	0 gallons
Units started	<u>315,000 gallons</u>
To account for	315,000 gallons
Units transferred out	<u>240,000 gallons</u>
Ending inventory	<u>75,000 gallons</u>

Units transferred out	240,000 gallons
Ending inventory, 15% complete	<u>11,250 gallons</u>
Equivalent units	<u>251,250 gallons</u>

- b. Direct materials:

Beginning inventory	0 gallons
Units started	<u>315,000 gallons</u>
Equivalent units	<u>315,000 gallons</u>

Conversion costs:

Beginning inventory	0 gallons
Units started	<u>315,000 gallons</u>
To account for	315,000 gallons
Units transferred out	<u>265,000 gallons</u>
Ending inventory	<u>50,000 gallons</u>

Units transferred out	265,000 gallons
Ending inventory, 70% complete	<u>35,000 gallons</u>
Equivalent units	<u>300,000 gallons</u>

Diff: 2

Objective: 3

AACSB: Analytical thinking

26) Jordana Woolens is a manufacturer of wool cloth. The information for March is as follows:

Beginning work in process	10,000 units
Units started	20,000 units
Units completed	25,000 units
Beginning work-in-process direct materials	\$ 6,000
Beginning work-in-process conversion	\$ 2,600
Direct materials added during month	\$30,000
Direct manufacturing labor during month	\$12,000
Factory overhead	\$ 5,000

Beginning work in process was half converted as to labor and overhead. Direct materials are added at the beginning of the process. All conversion costs are incurred evenly throughout the process. Ending work in process was 60% complete.

Required:

Prepare a production cost worksheet using the weighted-average method. Include any necessary supporting schedules.

Answer: PRODUCTION COST WORKSHEET

<i>Flow of production</i>	Physical Units	Direct Materials	Conversion
Work in process, beginning	10,000		
Started during period	<u>20,000</u>		
To account for	<u>30,000</u>		
Units completed	25,000	25,000	25,000
Work in process, ending	<u>5,000</u>	<u>5,000</u>	<u>3,000</u>
Accounted for	<u>30,000</u>	<u>30,000</u>	<u>28,000</u>

<i>Costs</i>	Totals	Direct Materials	Conversion
Work in process, beginning	\$ 8,600	\$ 6,000	\$ 2,600
Costs added during period	<u>47,000</u>	<u>30,000</u>	<u>17,000</u>
Total costs to account for	\$55,600	\$36,000	\$19,600
Divided by equivalent units		<u>30,000</u>	<u>28,000</u>
Equivalent unit costs	<u>\$ 1.90</u>	<u>\$ 1.20</u>	<u>\$ 0.70</u>

<i>Assignment of costs</i>	
Costs transferred out (25,000 × \$1.90)	\$47,500
Work in process, ending	
Direct materials (5,000 × \$1.20)	6,000
Conversion (5,000 × \$0.70 × 0.60)	<u>2,100</u>
Costs accounted for	<u>\$55,600</u>

Diff: 3

Objective: 3

AACSB: Analytical thinking

27) List and describe the five steps in process costing.

Answer: Step 1 involves summarizing the physical flow of the units of output. Step 2 involves determining the number output expressed in terms of equivalent units. This means determining how many complete units would have been done with the materials, time, and effort expended had units been done one at a time. The third step involves computing the cost per equivalent unit — determining how much a whole unit cost for each item this period. In the fourth step, the costs that need to be assigned to the units are summarized. The fifth step involves assigning the costs to the completed units and the units still remaining in work in process.

Diff: 2

Objective: 3

AACSB: Analytical thinking

28) Marv and Vicki own and operate a vegetable canning plant. In recent years, their business has grown tremendously and, at any point in time, they may have 30 to 35 different vegetables being processed. Also, during the peak summer months there are several thousand bushels of vegetables in some stage of processing at any one time. With the company's growth during the past few years, the owners decided to employ an accountant to provide cost estimations on each vegetable category and prepare monthly financial statements. Although the accountant is doing exactly as instructed, Marv and Vicki are confused about the monthly operating costs. Although they process an average of 50,000 canned units a month, the monthly production report fluctuates wildly.

Required:

Explain how the production report can fluctuate wildly if they process a constant amount of vegetables each month.

Answer: It appears that the accountant may not be using equivalent units of production but he or she is only including completed units when preparing the monthly reports. Particularly with large summer inventories, the number and value associated costs with ending work in process could cause wide fluctuations between months if the equivalent unit concept is ignored. The accountant should start using equivalent units to determine the costs to assign to finished goods and ending work in process each month.

Diff: 2

Objective: 3

AACSB: Analytical thinking

17.4 Objective 17.4

- 1) The weighted-average process-costing method calculates the equivalent units by _____.
- A) considering only the work done during the current period
 - B) the units started during the current period minus the units in ending inventory
 - C) the units started during the current period plus the units in ending inventory
 - D) the equivalent units completed during the current period plus the equivalent units in ending inventory

Answer: D

Diff: 2

Objective: 4

AACSB: Analytical thinking

- 2) Assembly department of Zahra Technologies had 200 units as work in process at the beginning of the month. These units were 45% complete. It has 300 units which are 25% complete at the end of the month. During the month, it completed and transferred 600 units. Direct materials are added at the beginning of production. Conversion costs are allocated evenly throughout production. Zahra uses weighted-average process-costing method. What is the number of equivalent units of work done during the month with regards to direct materials?

- A) 700 units
- B) 1100 units
- C) 900 units
- D) 600 units

Answer: A

Explanation: Equivalent units for direct material = 600 units + 300 units – 200 units = 700 units

Diff: 2

Objective: 4

AACSB: Application of knowledge

- 3) Assembly department of Zahra Technologies had 200 units as work in process at the beginning of the month. These units were 45% complete. It has 300 units which are 35% complete at the end of the month. During the month, it completed and transferred 500 units. Direct materials are added at the beginning of production. Conversion costs are allocated evenly throughout production. Zahra uses weighted-average process-costing method. Calculate the total equivalent units in ending inventory for assignment of conversion costs?

- A) 200 units
- B) 105 units
- C) 195 units
- D) 300 units

Answer: B

Explanation: Equivalent units in ending inventory = 300 units × 35% = 105 units

Diff: 2

Objective: 4

AACSB: Application of knowledge

EA

4) Assembly department of Zahra Technologies had 100 units as work in process at the beginning of the month. These units were 45% complete. It has 200 units which are 20% complete at the end of the month. During the month, it completed and transferred 500 units. Direct materials are added at the beginning of production. Conversion costs are allocated evenly throughout production. Zahra uses weighted-average process-costing method. What is the total equivalent units in ending inventory for assignment of direct materials cost?

- A) 100 units
- B) 40 units
- C) 160 units
- D) 200 units

Answer: D

Explanation: As direct materials are added at the beginning of production, equivalent units = 200 units

Diff: 2

Objective: 4

AACSB: Application of knowledge

5) In the computation of the cost per equivalent unit, the weighted-average method of process costing considers all the costs _____.

- A) entering work in process from the units in beginning inventory plus the costs for the work completed during the current accounting period
- B) that have entered work in process from the units started or transferred in during the current accounting period
- C) that have entered work in process during the current accounting period from the units started or transferred in minus the costs associated with ending inventory
- D) that have entered work in process during the current accounting period from the units started or transferred in plus the costs associated with ending inventory

Answer: A

Diff: 3

Objective: 4

AACSB: Analytical thinking

6) Which of the following is not true of the weighted-average process-costing method?

- A) the method calculates the cost per equivalent unit of all work done to date regardless of the accounting period in which the work was done
- B) the costs in work in process (beginning work in process) when the period starts are not considered when calculating the weighted-average cost per equivalent unit
- C) the weighted-average cost is the total of all costs entering the Work in Process account divided by the total equivalent units in ending work-in-process inventory
- D) the costs to account for are equal to the beginning work in process plus the costs added to work in process during the same period

Answer: B

Diff: 3

Objective: 4

AACSB: Analytical thinking

EA

7) Under the weighted-average method, how would you calculate the cost per equivalent units with regards to conversion costs?

- A) conversion costs for work done in the current period/units completed and transferred out in the current period
- B) (total conversion costs in beginning work in process)/(units completed and transferred out during the period + equivalent units in ending inventory)
- C) (total conversion costs in beginning work in process + conversion cost for work done in the current period)/(units completed and transferred out during the period + equivalent units in ending inventory)
- D) (total direct labor costs in beginning work in process + conversion cost for work done in the current period)/(units completed and transferred out during the period + equivalent units in ending inventory)

Answer: C

Diff: 2

Objective: 4

AACSB: Analytical thinking

8) Timekeeper Inc. manufactures clocks on a highly automated assembly line. Its costing system uses two cost categories, direct materials and conversion costs. Each product must pass through the Assembly Department and the Testing Department. Direct materials are added at the beginning of the production process. Conversion costs are allocated evenly throughout production. Timekeeper Inc. uses weighted-average costing.

Data for the Assembly Department for June 2017 are:

Work in process, beginning inventory	370 units
Direct materials (100% complete)	
Conversion costs (60% complete)	
Units started during June	970 units
Work in process, ending inventory:	250 units
Direct materials (100% complete)	
Conversion costs (80% complete)	

Costs for June 2017:

Work in process, beginning inventory:	
Direct materials	\$90,000
Conversion costs	\$137,000
Direct materials costs added during June	\$602,500
Conversion costs added during June	\$401,000

What are the equivalent units for direct materials and conversion costs, respectively, for June? (Round final answers to the nearest unit.)

- A) 1340 units; 1050 units
- B) 1340 units; 1290 units
- C) 1220 units; 1220 units
- D) 1248 units; 1120 units

EA

Answer: B

Explanation:

	<u>Direct materials</u>	<u>Conversion costs</u>
Completed and transferred out (370 + 970 - 250)	1090.0	1090.0
Work in process, ending	<u>250.0</u>	<u>200.0</u>
Total equivalent units	<u>1340</u>	<u>1290</u>

Diff: 2

Objective: 4

AACSB: Application of knowledge

9) Timekeeper Inc. manufactures clocks on a highly automated assembly line. Its costing system uses two cost categories, direct materials and conversion costs. Each product must pass through the Assembly Department and the Testing Department. Direct materials are added at the beginning of the production process. Conversion costs are allocated evenly throughout production. Timekeeper Inc. uses weighted-average costing.

Data for the Assembly Department for June 2017 are:

Work in process, beginning inventory	370 units
Direct materials (100% complete)	
Conversion costs (50% complete)	
Units started during June	1030 units
Work in process, ending inventory:	160 units
Direct materials (100% complete)	
Conversion costs (70% complete)	

Costs for June 2017:

Work in process, beginning inventory:	
Direct materials	\$91,500
Conversion costs	\$138,000
Direct materials costs added during June	\$602,000
Conversion costs added during June	\$404,000

What is the total amount debited to the Work-in-Process account during the month of June?

- A) \$229,500
- B) \$1,006,000
- C) \$1,144,000
- D) \$1,235,500

Answer: B

Explanation: The total amount debited to the Work-in-Process account during the month of June = \$602,000 + \$404,000 = \$1,006,000

Diff: 1

Objective: 4

AACSB: Application of knowledge

EA

10) Timekeeper Inc. manufactures clocks on a highly automated assembly line. Its costing system uses two cost categories, direct materials and conversion costs. Each product must pass through the Assembly Department and the Testing Department. Direct materials are added at the beginning of the production process. Conversion costs are allocated evenly throughout production. Timekeeper Inc. uses weighted-average costing.

Data for the Assembly Department for June 2017 are:

Work in process, beginning inventory	350 units
Direct materials (100% complete)	
Conversion costs (60% complete)	
Units started during June	1030 units
Work in process, ending inventory:	220 units
Direct materials (100% complete)	
Conversion costs (75% complete)	

Costs for June 2017:

Work in process, beginning inventory:	
Direct materials	\$94,000
Conversion costs	\$140,000
Direct materials costs added during June	\$602,500
Conversion costs added during June	\$402,500

What is the direct materials cost per equivalent unit during June?

- A) \$679.51
- B) \$519.40
- C) \$504.71
- D) \$409.86

Answer: C

Explanation:	<u>Direct materials</u>	<u>Conversion costs</u>
Completed and transferred out (350 + 1030 - 220)	1160.0	1160.0
Work in process, ending	<u>220.0</u>	<u>165.0</u>
Total equivalent units	<u>1380.0</u>	<u>1325.0</u>

Total cost of direct materials = \$94,000 + \$602,500 = \$696,500

Direct material cost per equivalent unit = \$696,500 / 1380.0 units = \$504.71

Diff: 3

Objective: 4

AACSB: Application of knowledge

EA

11) Timekeeper Inc. manufactures clocks on a highly automated assembly line. Its costing system uses two cost categories, direct materials and conversion costs. Each product must pass through the Assembly Department and the Testing Department. Direct materials are added at the beginning of the production process. Conversion costs are allocated evenly throughout production. Timekeeper Inc. uses weighted-average costing.

Data for the Assembly Department for June 2017 are:

Work in process, beginning inventory	390 units
Direct materials (100% complete)	
Conversion costs (50% complete)	
Units started during June	1040 units
Work in process, ending inventory:	200 units
Direct materials (100% complete)	
Conversion costs (85% complete)	

Costs for June 2017:

Work in process, beginning inventory:	
Direct materials	\$92,500
Conversion costs	\$138,500
Direct materials costs added during June	\$603,000
Conversion costs added during June	\$403,500

What is the conversion cost per equivalent unit in June?

- A) \$482.99
- B) \$659.27
- C) \$387.14
- D) \$354.51

Answer: C

Explanation:

	<u>Direct materials</u>	<u>Conversion costs</u>
Completed and transferred out (390 + 1040 - 200)	1230	1230
Work in process, ending	<u>200</u>	<u>170.0</u>
Total equivalent units	<u>1430.0</u>	<u>1400.0</u>

The total conversion cost = \$138,500 + \$403,500 = \$542,000

Conversion cost per equivalent unit = \$542,000 / 1400.0 = \$387.14

Diff: 3

Objective: 4

AACSB: Application of knowledge

EA

12) Timekeeper Inc. manufactures clocks on a highly automated assembly line. Its costing system uses two cost categories, direct materials and conversion costs. Each product must pass through the Assembly Department and the Testing Department. Direct materials are added at the beginning of the production process. Conversion costs are allocated evenly throughout production. Timekeeper Inc. uses weighted-average costing.

Data for the Assembly Department for June 2017 are:

Work in process, beginning inventory	340 units
Direct materials (100% complete)	
Conversion costs (50% complete)	
Units started during June	950 units
Work in process, ending inventory:	200 units
Direct materials (100% complete)	
Conversion costs (75% complete)	

Costs for June 2017:

Work in process, beginning inventory:	
Direct materials	\$94,000
Conversion costs	\$135,500
Direct materials costs added during June	\$602,500
Conversion costs added during June	\$402,000

What amount of direct materials costs is assigned to the ending Work-in-Process account for June? (Round intermediary calculations to the nearest whole dollar.)

- A) \$108,000
- B) \$77,389
- C) \$108,076
- D) \$55,779

Answer: A

Explanation:	<u>Direct materials</u>	<u>Conversion costs</u>
Completed and transferred out (340 + 950 - 200)	1090	1090
Work in process, ending	<u>200</u>	<u>150.0</u>
Total equivalent units	<u>1290.0</u>	<u>1240.0</u>

Direct material cost per equivalent unit = $[(\$602,500 + \$94,000) / 1350] = \$540$.

Equivalent units in ending inventory = 200 units

Direct materials cost to be assigned to ending Work-in-Process account = $\$540 \times 200 = \$108,000$

Diff: 3

Objective: 4

AACSB: Application of knowledge

EA

13) Timekeeper Inc. manufactures clocks on a highly automated assembly line. Its costing system uses two cost categories, direct materials and conversion costs. Each product must pass through the Assembly Department and the Testing Department. Direct materials are added at the beginning of the production process. Conversion costs are allocated evenly throughout production. Timekeeper Inc. uses weighted-average costing.

Data for the Assembly Department for June 2017 are:

Work in process, beginning inventory	310 units
Direct materials (100% complete)	
Conversion costs (50% complete)	
Units started during June	1040 units
Work in process, ending inventory:	160 units
Direct materials (100% complete)	
Conversion costs (70% complete)	

Costs for June 2017:

Work in process, beginning inventory:	
Direct materials	\$92,000
Conversion costs	\$139,000
Direct materials costs added during June	\$601,500
Conversion costs added during June	\$404,000

What amount of conversion costs is assigned to the ending Work-in-Process account for June? (Round any intermediary calculations to the nearest cent.)

- A) \$81,588.24
- B) \$46,709.60
- C) \$289.71
- D) \$404,000.00

Answer: B

Explanation:	<u>Direct materials</u>	<u>Conversion costs</u>
Completed and transferred out (310 + 1040 - 160)	1190	1190
Work in process, ending	<u>160</u>	<u>112.0</u>
Total equivalent units	<u>1350.0</u>	<u>1302.0</u>

Conversion cost per equivalent unit = $\$543,000 / 1302.0 = \417.05

Equivalent units in ending inventory = $160 \times 70\% = 112.0$ equivalent units

Conversion cost to be assigned to ending Work-in-Process account = $112.0 \times \$417.05 = \$46,709.60$

Diff: 3

Objective: 4

AACSB: Application of knowledge

EA

14) Shiffon Electronics manufactures music player. Its costing system uses two cost categories, direct materials and conversion costs. Each product must pass through the Assembly Department, the Programming department, and the Testing Department. Direct materials are added at the beginning of the production process. Conversion costs are allocated evenly throughout production. Shiffon Electronics uses weighted-average costing.

The following information is available for the month of March 2017 for the Assembly department.

Work in process, beginning inventory	340 units
Conversion costs (40% complete)	
Units started during March	890 units
Work in process, ending inventory:	100 units
Conversion costs (50% complete)	

The cost details for the month of March are as follows:

Work in process, beginning inventory:	
Direct materials	\$346,000
Conversion costs	\$366,000
Direct materials costs added during March	\$703,500
Conversion costs added during March	\$1,128,500

What are the equivalent units for direct materials and conversion costs, respectively, for March?

- A) 1230 units; 1230 units
- B) 1180 units; 1230 units
- C) 1230 units; 1180 units
- D) 1130 units; 1180 units

Answer: C

Explanation:	<u>Direct materials</u>	<u>Conversion costs</u>
Completed and transferred out (340 + 890 - 100)	1130	1130
Work in process, ending	<u>100</u>	<u>50</u>
Total equivalent units	<u>1230</u>	<u>1180</u>

Diff: 2

Objective: 4

AACSB: Application of knowledge

EA

15) Shiffon Electronics manufactures music player. Its costing system uses two cost categories, direct materials and conversion costs. Each product must pass through the Assembly Department, the Programming department, and the Testing Department. Direct materials are added at the beginning of the production process. Conversion costs are allocated evenly throughout production. Shiffon Electronics uses weighted-average costing.

The following information is available for the month of March 2017 for the Assembly department.

Work in process, beginning inventory	330 units
Conversion costs (40% complete)	
Units started during March	810 units
Work in process, ending inventory:	120 units
Conversion costs (60% complete)	

The cost details for the month of March are as follows:

Work in process, beginning inventory:	
Direct materials	\$346,500
Conversion costs	\$363,000
Direct materials costs added during March	\$707,000
Conversion costs added during March	\$1,124,000

What is the total amount debited to the Work-in-Process account during the month of March?

- A) \$2,540,500
- B) \$2,194,000
- C) \$1,831,000
- D) \$707,000

Answer: C

Explanation: The total amount debited to the Work-in-Process account = \$707,000 + \$1,124,000 = \$1,831,000

Diff: 1

Objective: 4

AACSB: Application of knowledge

EA

16) Shiffon Electronics manufactures music player. Its costing system uses two cost categories, direct materials and conversion costs. Each product must pass through the Assembly Department, the Programming department, and the Testing Department. Direct materials are added at the beginning of the production process. Conversion costs are allocated evenly throughout production. Shiffon Electronics uses weighted-average costing.

The following information is available for the month of March 2017 for the Assembly department.

Work in process, beginning inventory	390 units
Conversion costs (30% complete)	
Units started during March	840 units
Work in process, ending inventory:	180 units
Conversion costs (65% complete)	

The cost details for the month of March are as follows:

Work in process, beginning inventory:	
Direct materials	\$346,000
Conversion costs	\$368,500
Direct materials costs added during March	\$707,500
Conversion costs added during March	\$1,124,000

What is the direct materials cost per equivalent unit during March? (round to the nearest dollar)

- A) \$903
- B) \$857
- C) \$575
- D) \$281

Answer: B

Explanation:	<u>Direct materials</u>	<u>Conversion costs</u>
Completed and transferred out (390 + 840 - 180)	1050	1050
Work in process, ending	<u>180</u>	<u>117</u>
Total equivalent units	<u>1230</u>	<u>1167</u>

Total cost of direct materials = \$346,000 + \$707,500 = \$1,053,500

Direct material cost per equivalent unit = \$1,053,500 / 1230 units = \$857

Diff: 3

Objective: 4

AACSB: Application of knowledge

17) Shiffon Electronics manufactures music player. Its costing system uses two cost categories, direct materials and conversion costs. Each product must pass through the Assembly Department, the Programming department, and the Testing Department. Direct materials are added at the beginning of the production process. Conversion costs are allocated evenly throughout production. Shiffon Electronics uses weighted-average costing.

The following information is available for the month of March 2017 for the Assembly department.

Work in process, beginning inventory	350 units
Conversion costs (40% complete)	
Units started during March	850 units
Work in process, ending inventory:	160 units
Conversion costs (55% complete)	

The cost details for the month of March are as follows:

Work in process, beginning inventory:	
Direct materials	\$349,000
Conversion costs	\$362,000
Direct materials costs added during March	\$705,500
Conversion costs added during March	\$1,129,000

What is the conversion cost per equivalent unit in March? (Round to the nearest cent)

- A) \$940.83
- B) \$1321.81
- C) \$1310.28
- D) \$1000.89

Answer: B

Explanation:	<u>Direct materials</u>	<u>Conversion costs</u>
Completed and transferred out (350 + 850 - 160)	1040	1040
Work in process, ending	<u>160</u>	<u>88</u>
Total equivalent units	<u>1200</u>	<u>1128</u>

Total conversion cost = 362,000 + \$1,129,000 = \$1,491,000

Conversion cost per equivalent unit in June = \$1,491,000 / 1128 = 1321.81

Diff: 3

Objective: 4

AACSB: Application of knowledge

18) Shiffon Electronics manufactures music player. Its costing system uses two cost categories, direct materials and conversion costs. Each product must pass through the Assembly Department, the Programming department, and the Testing Department. Direct materials are added at the beginning of the production process. Conversion costs are allocated evenly throughout production. Shiffon Electronics uses weighted-average costing.

The following information is available for the month of March 2017 for the Assembly department.

Work in process, beginning inventory	320 units
Conversion costs (30% complete)	
Units started during March	840 units
Work in process, ending inventory:	160 units
Conversion costs (55% complete)	

The cost details for the month of March are as follows:

Work in process, beginning inventory:	
Direct materials	\$347,500
Conversion costs	\$364,000
Direct materials costs added during March	\$700,500
Conversion costs added during March	\$1,124,000

What amount of direct materials costs is assigned to the ending Work-in-Process account for March? (Round intermediary calculations to the nearest whole dollar.)

- A) \$47,931
- B) \$96,621
- C) \$104,632
- D) \$144,480

Answer: D

Explanation:	<u>Direct materials</u>	<u>Conversion costs</u>
Completed and transferred out (320 + 840 - 160)	1000	1000
Work in process, ending	<u>160</u>	<u>88</u>
Total equivalent units	<u>1160</u>	<u>1088</u>

Direct material cost per equivalent unit = $\$1,048,000 / 1160 = \903

Direct materials cost to be assigned to ending Work-in-Process account = $160 \text{ units} \times \$903 = \$144,480$

Diff: 3

Objective: 4

AACSB: Application of knowledge

19) Shiffon Electronics manufactures music player. Its costing system uses two cost categories, direct materials and conversion costs. Each product must pass through the Assembly Department, the Programming department, and the Testing Department. Direct materials are added at the beginning of the production process. Conversion costs are allocated evenly throughout production. Shiffon Electronics uses weighted-average costing.

The following information is available for the month of March 2017 for the Assembly department.

Work in process, beginning inventory	340 units
Conversion costs (25% complete)	
Units started during March	860 units
Work in process, ending inventory:	140 units
Conversion costs (60% complete)	

The cost details for the month of March are as follows:

Work in process, beginning inventory:	
Direct materials	\$349,000
Conversion costs	\$360,000
Direct materials costs added during March	\$703,500
Conversion costs added during March	\$1,130,000

What amount of conversion costs is assigned to the ending Work-in-Process account for March?
(Round intermediary dollar amounts to the nearest cent and unit amounts to the nearest whole unit.)

- A) \$182,343
- B) \$122,792
- C) \$109,406
- D) \$270,629

Answer: C

Explanation:	<u>Direct materials</u>	<u>Conversion costs</u>
Completed and transferred out (340 + 860 - 140)	1060	1060
Work in process, ending	<u>140</u>	<u>84</u>
Total equivalent units	<u>1200</u>	<u>1144</u>

Conversion cost per equivalent unit = \$1,490,000 / 1144 = \$1302.45

Ending inventory = 140 × 60% = 84 units

Conversion cost to be assigned to ending Work-in-Process account = 84 units × \$1302.45 = \$109,406

Diff: 3

Objective: 4

AACSB: Application of knowledge

20) The Swivel Chair Company manufactures a standard recliner. During February, the firm's Assembly Department started production of 147,000 chairs. During the month, the firm completed 180,000 chairs and transferred them to the Finishing Department. The firm ended the month with 21,000 chairs in ending inventory. All direct materials costs are added at the beginning of the production cycle. Weighted-average costing is used by Swivel. How many chairs were in inventory at the beginning of the month? Conversion costs are incurred uniformly over the production cycle.

- A) 42,000 chairs
- B) 21,000 chairs
- C) 39,900 chairs
- D) 54,000 chairs

Answer: D

Explanation: Beginning inventory = 21,000 chairs (ending inventory) + 180,000 chairs (finished and transferred during the month) – 147,000 chairs (started production during the month) = 54,000 chairs

Diff: 2

Objective: 4

AACSB: Application of knowledge

21) The Swivel Chair Company manufactures a standard recliner. During February, the firm's Assembly Department started production of 145,000 chairs. During the month, the firm completed 184,000 chairs and transferred them to the Finishing Department. The firm ended the month with 19,000 chairs in ending inventory. All direct materials costs are added at the beginning of the production cycle. Weighted-average costing is used by Swivel. What were the equivalent units for materials for February?

- A) 203,000 chairs
- B) 184,000 chairs
- C) 164,000 chairs
- D) 191,250 chairs

Answer: A

Explanation: Equivalent units for materials = 19,000 units (ending units) + 184,000 units (completed and transferred) = 203,000 units.

Diff: 3

Objective: 4

AACSB: Application of knowledge

EA

22) The Swivel Chair Company manufactures a standard recliner. During February, the firm's Assembly Department started production of 155,000 chairs. During the month, the firm completed 185,000 chairs and transferred them to the Finishing Department. The firm ended the month with 18,000 chairs in ending inventory. All direct materials costs are added at the beginning of the production cycle. Weighted-average costing is used by Swivel. What were the equivalent units for conversion costs for February if the beginning inventory was 70% complete as to conversion costs and the ending inventory was 45% complete as to conversion costs?

- A) 193,100
- B) 163,100
- C) 185,000
- D) 171,200

Answer: A

Explanation: Equivalent units for conversion costs for February = 185,000 units + (18,000 × 45%)

equivalent units = 193,100 units

Diff: 3

Objective: 4

AACSB: Application of knowledge

23) The Swivel Chair Company manufactures a standard recliner. During February, the firm's Assembly Department started production of 145,000 chairs. During the month, the firm completed 183,000 chairs and transferred them to the Finishing Department. The firm ended the month with 24,000 chairs in ending inventory. All direct materials costs are added at the beginning of the production cycle. Weighted-average costing is used by Swivel. Of the 145,000 units Swivel started during February, how many were finished during the month?

- A) 183,500
- B) 218,200
- C) 121,000
- D) 217,000

Answer: C

Explanation: Number of units started and finished during the month = 145,000 units – 24,000 units = 121,000 units

Diff: 3

Objective: 4

AACSB: Application of knowledge

EA

24) Weighty Steel processes a single type of steel. For the current period the following information is given:

	Units	Material Costs	Conversion Costs
Beginning Inventory	3100	\$4800	\$5800
Started During the Current Period	20,400	32,300	78,700
Ending Inventory	3400		

All materials are added at the beginning of the production process. The beginning inventory was 50% complete as to conversion, while the ending inventory was 25% completed for conversion purposes.

Weighty uses the weighted-average costing method.

What is the total cost assigned to the units completed and transferred this period? (Round intermediary dollar amounts to the nearest cent and total costs to the nearest whole dollar.)

- A) \$91,200
- B) \$115,050
- C) \$112,761
- D) \$121,600

Answer: C

Explanation: EU (materials) = 20,100 + (3400 × 100%) = 23,500.

$(\$4800 + \$32,300) / 23,500 = \$1.58$ per unit for material

EU (conversion) = 20,100 + (3400 × 25%) = 20,950.

$(\$5800 + \$78,700) / 20,950 = \$4.03$ per unit for conversion.

Total cost per unit = $\$1.58 + \$4.03 = \$5.61$

Cost of transferred units = 20,100 × $\$5.61 = \$112,761$

Diff: 3

Objective: 4

AACSB: Application of knowledge

25) A distinct feature of the FIFO process-costing method is that the _____.

- A) work done on beginning inventory before the current period is blended with the work done during the current period in the calculation of equivalent units
- B) work done on beginning inventory before the current period is kept separate from the work done during the current period in the calculation of equivalent units
- C) work done on ending inventory is kept separate from the work done during the current period in the calculation of equivalent units and is usually not included in the calculation
- D) FIFO process-costing method is only minimally different from the weighted-average process-costing method

Answer: B

Diff: 2

Objective: 4

AACSB: Analytical thinking

26) Which of the following steps are part of the first-in, first-out (FIFO) process-costing method?

- A) assignment of costs of the current period's equivalent units to the first units completed and transferred out of the process
- B) assumes as part of its first step that the most recently worked on units are completed and transferred out first
- C) assumes as part of its first step that there is no beginning work-in-process
- D) assignment of costs of the previous period's equivalent units in beginning work-in-process inventory to the first units completed and transferred out of the process

Answer: D

Diff: 2

Objective: 4

AACSB: Analytical thinking

27) An assumption of the FIFO process-costing method is that _____.

- A) the units in beginning inventory are not necessarily assumed to be completed by the end of the period
- B) the units in beginning inventory are assumed to be completed first
- C) ending inventory will always be completed in the next accounting period
- D) no calculation of conversion costs is possible

Answer: B

Diff: 2

Objective: 4

AACSB: Analytical thinking

28) Comfort chair company manufactures a standard recliner. During February, the firm's Assembly Department started production of 73,900 chairs. During the month, the firm completed 78,400 chairs, and transferred them to the Finishing Department. The firm ended the month with 11,200 chairs in ending inventory. There were 15,700 chairs in beginning inventory. All direct materials costs are added at the beginning of the production cycle and conversion costs are added uniformly throughout the production process. The FIFO method of process costing is used by Comfort. Beginning work in process was 25% complete as to conversion costs, while ending work in process was 70% complete as to conversion costs.

Beginning inventory:

Direct materials	\$24,400
Conversion costs	\$35,900

Manufacturing costs added during the accounting period:

Direct materials	\$169,000
Conversion costs	\$278,600

How many of the units that were started and completed during February?

- A) 85,100
- B) 78,400
- C) 73,900
- D) 62,700

Answer: D

Explanation: Number of units started and completed during February = 73,900 chairs (units started in production) – 11,200 chairs (ending inventory) = 62,700 chairs

Diff: 2

Objective: 4

AACSB: Application of knowledge

EA

29) Comfort chair company manufactures a standard recliner. During February, the firm's Assembly Department started production of 73,100 chairs. During the month, the firm completed 78,000 chairs, and transferred them to the Finishing Department. The firm ended the month with 10,800 chairs in ending inventory. There were 15,700 chairs in beginning inventory. All direct materials costs are added at the beginning of the production cycle and conversion costs are added uniformly throughout the production process. The FIFO method of process costing is used by Comfort. Beginning work in process was 30% complete as to conversion costs, while ending work in process was 75% complete as to conversion costs.

Beginning inventory:

Direct materials	\$24,800
Conversion costs	\$36,000

Manufacturing costs added during the accounting period:

Direct materials	\$168,100
Conversion costs	\$278,800

What were the equivalent units for conversion costs during February?

- A) 81,390
- B) 83,900
- C) 73,100
- D) 77,810

Answer: A

Explanation: Number of equivalent units in beginning inventory = 10,990 (15,700 × 0.7)

Total equivalent units for conversion costs = 10,990 + 62,300 + 8100 = 81,390 units

Diff: 2

Objective: 4

AACSB: Application of knowledge

EA

30) Comfort chair company manufactures a standard recliner. During February, the firm's Assembly Department started production of 73,700 chairs. During the month, the firm completed 78,500 chairs, and transferred them to the Finishing Department. The firm ended the month with 11,200 chairs in ending inventory. There were 16,000 chairs in beginning inventory. All direct materials costs are added at the beginning of the production cycle and conversion costs are added uniformly throughout the production process. The FIFO method of process costing is used by Comfort. Beginning work in process was 20% complete as to conversion costs, while ending work in process was 80% complete as to conversion costs.

Beginning inventory:

Direct materials	\$24,800
Conversion costs	\$35,900

Manufacturing costs added during the accounting period:

Direct materials	\$168,200
Conversion costs	\$278,400

What is the amount of direct materials cost assigned to ending work-in-process inventory at the end of February?

(Round intermediary calculations to the nearest cent.)

- A) \$21,760
- B) \$25,536
- C) \$27,200
- D) \$28,800

Answer: B

Explanation: Direct material cost per unit = $\$168,200 / 73,700 = \2.28

Direct materials cost assigned to ending work-in-process inventory = $\$2.28 \times 11,200 = \$25,536$

Diff: 3

Objective: 4

AACSB: Application of knowledge

EA

31) Comfort chair company manufacturers a standard recliner. During February, the firm's Assembly Department started production of 73,000 chairs. During the month, the firm completed 78,600 chairs, and transferred them to the Finishing Department. The firm ended the month with 10,100 chairs in ending inventory. There were 15,700 chairs in beginning inventory. All direct materials costs are added at the beginning of the production cycle and conversion costs are added uniformly throughout the production process. The FIFO method of process costing is used by Comfort. Beginning work in process was 35% complete as to conversion costs, while ending work in process was 85% complete as to conversion costs.

Beginning inventory:

Direct materials	\$24,400
Conversion costs	\$36,000

Manufacturing costs added during the accounting period:

Direct materials	\$168,500
Conversion costs	\$278,500

What is the cost of the goods transferred out during February?

(Round intermediary calculations to the nearest cent.)

A) \$429,194.09

B) \$454,987.05

C) \$478,261.76

D) \$507,400.00

Answer: B

Explanation: Number of units started and completed during February = 73,000 chairs (Units started in production) – 10,100 chairs (Ending inventory) = 62,900 chairs

Number of equivalent units in beginning inventory = 10,205 (15,700 × 0.65)

Total equivalent units for conversion costs = 10,205 + 62,900 + 8585 = 81,690 units

Direct material cost per unit = \$168,500 / 73,000 = \$2.31

Direct materials cost assigned to ending work-in-process inventory = \$2.31 × 10,100 = \$23,331

Work in process, beginning inventory \$24,400 + \$36,000 = \$60,400

Costs added to beginning inventory = 15,700 × 0.65 × \$3.41 = \$34,799.05

Started and completed

Direct materials = \$2.31 × 62,900 = \$145,299

Conversion costs =

[\$278,500 / (10,205 + 8585 + 62,900)] × 62,900 = \$214,489.00

Total costs of units completed and transferred out = \$454,987.05

Diff: 3

Objective: 4

AACSB: Application of knowledge

EA

32) Jane Industries manufactures plastic toys. During October, Jane's Fabrication Department started work on 10,300 models. During the month, the company completed 11,900 models, and transferred them to the Distribution Department. The company ended the month with 1100 models in ending inventory. There were 2700 models in beginning inventory. All direct materials costs are added at the beginning of the production cycle and conversion costs are added uniformly throughout the production process. The FIFO method of process costing is being followed. Beginning work in process was 25% complete as to conversion costs, while ending work in process was 50% complete as to conversion costs.

Beginning inventory:

Direct materials costs	\$20,200
Conversion costs	\$11,400

Manufacturing costs added during the accounting period:

Direct materials costs	\$70,500
Conversion costs	\$241,000

How many of the units that were started and completed during October?

- A) 14,600
- B) 9200
- C) 8825
- D) 10,300

Answer: B

Explanation: Number of units started and completed during October = 11,900 units – 2700 units (ending inventory) = 9200 units

Diff: 2

Objective: 4

AACSB: Application of knowledge

33) Jane Industries manufactures plastic toys. During October, Jane's Fabrication Department started work on 10,000 models. During the month, the company completed 11,300 models, and transferred them to the Distribution Department. The company ended the month with 2000 models in ending inventory. There were 3300 models in beginning inventory. All direct materials costs are added at the beginning of the production cycle and conversion costs are added uniformly throughout the production process. The FIFO method of process costing is being followed. Beginning work in process was 30% complete as to conversion costs, while ending work in process was 55% complete as to conversion costs.

Beginning inventory:

Direct materials costs	\$19,900
Conversion costs	\$11,200

Manufacturing costs added during the accounting period:

Direct materials costs	\$71,000
Conversion costs	\$240,200

What were the equivalent units for conversion costs during October?

- A) 10,400
- B) 11,900
- C) 11,410
- D) 9000

Answer: C

Explanation: Number of equivalent units in beginning inventory = $3300 \times 0.7 = 2310$ units

Units started and completed during October = $11,300 - 3300 = 8000$ units

Number of equivalent units in ending inventory = $2000 \times 55\% = 1100$ units

Total equivalent units = $2310 + 8000 + 1100 = 11,410$ units

Diff: 2

Objective: 4

AACSB: Application of knowledge

EA

34) Jane Industries manufactures plastic toys. During October, Jane's Fabrication Department started work on 10,400 models. During the month, the company completed 11,200 models, and transferred them to the Distribution Department. The company ended the month with 2200 models in ending inventory. There were 3000 models in beginning inventory. All direct materials costs are added at the beginning of the production cycle and conversion costs are added uniformly throughout the production process. The FIFO method of process costing is being followed. Beginning work in process was 30% complete as to conversion costs, while ending work in process was 55% complete as to conversion costs.

Beginning inventory:

Direct materials costs	\$20,000
Conversion costs	\$11,000

Manufacturing costs added during the accounting period:

Direct materials costs	\$70,500
Conversion costs	\$240,300

What is the amount of direct materials cost assigned to ending work-in-process inventory at the end of October?

(Round intermediary calculations to the nearest cent.)

- A) \$19,783
- B) \$20,337
- C) \$10,923
- D) \$14,916

Answer: D

Explanation: Direct material cost per unit = $\$70,500 / 10,400 \text{ units} = \6.78

Direct materials cost assigned to ending work-in-process inventory = $\$6.78 \times 2200 = \$14,916$

Diff: 3

Objective: 4

AACSB: Application of knowledge

EA

35) Jane Industries manufactures plastic toys. During October, Jane's Fabrication Department started work on 10,200 models. During the month, the company completed 11,200 models, and transferred them to the Distribution Department. The company ended the month with 2500 models in ending inventory. There were 3500 models in beginning inventory. All direct materials costs are added at the beginning of the production cycle and conversion costs are added uniformly throughout the production process. The FIFO method of process costing is being followed. Beginning work in process was 30% complete as to conversion costs, while ending work in process was 55% complete as to conversion costs.

Beginning inventory:

Direct materials costs	\$20,200
Conversion costs	\$11,700

Manufacturing costs added during the accounting period:

Direct materials costs	\$70,600
Conversion costs	\$240,600

What is the cost assigned to ending inventory during October? (Round intermediary calculations to the nearest cent.)

A) \$46,010

B) \$53,705

C) \$58,971

D) \$40,918

Answer: A

Explanation: Number of units started and completed during October = 11,200 units – 3500 units (ending inventory) = 7700 units

Number of equivalent units in beginning inventory = 2450 equivalent units (3500 × 0.7)

Total of equivalent units = 2450 units + 7700 units + 1375 units = 11,525 units

Direct material cost per unit = \$70,600 / 10,200 units = \$6.92

Conversion cost per unit = \$240,600 / 11,525 = \$20.88

Work in process, ending

Direct material 2500 × \$6.92 = \$17,300

Conversion costs = 2500 × 0.55 × \$20.88 = \$28,710

Total cost of work in process, ending = \$46,010

Diff: 3

Objective: 4

AACSB: Application of knowledge

36) Which of the following is true of weighted-average process-costing?

- A) It does not represent the average cost of units when inputs prices fluctuates markedly from month to month.
- B) It facilitates period-to-period comparisons and hence is very useful in analyzing the performances of managers for different periods.
- C) It arrives at the same unit costs as arrived under FIFO method, but the computations are easier under weighted-average process-costing.
- D) It calculates the cost per equivalent unit of all work done to date, regardless of the accounting period in which it was done.

Answer: D

Diff: 3

Objective: 4

AACSB: Analytical thinking

37) Which of the following is an assumption under FIFO process-costing method?

- A) It assumes some of the higher-cost units are placed in ending work in process.
- B) It assumes that all the lower-cost units from the previous period in beginning work in process are the first to be completed and transferred out of the process.
- C) It assumes that unit inputs costs are constant and do not fluctuate in the short run.
- D) It assumes that the ending work in process consists of only the lower-cost current-period units.

Answer: D

Diff: 3

Objective: 4

AACSB: Analytical thinking

38) A major advantage of using the FIFO process-costing method is that:

- A) FIFO makes the unit cost calculations simpler
- B) in contrast with the weighted-average method, FIFO is considered GAAP
- C) FIFO provides managers with information about changes in the costs per unit from one period to the next
- D) in the period of rising prices, it leads to lower operating income and lower tax payments, saving the company cash and increasing the company's value

Answer: C

Diff: 2

Objective: 4

AACSB: Analytical thinking

39) Which of the following is a disadvantage of the weighted-average method compared to the FIFO process-costing method?

- A) FIFO is computationally simpler
- B) FIFO provides better management information for planning and control purposes
- C) when unit cost per input prices fluctuate markedly from month to month, its per unit cost is less representative than FIFO
- D) the information it provides about changes in unit prices from one period to the next is less useful than the information provided by FIFO

Answer: D

Diff: 2

Objective: 4

AACSB: Analytical thinking

40) Which of the following statements is true of process costing?

- A) In the period of rising prices, weighted-average process-costing method will result in higher operating income as compared to FIFO process-costing method.
- B) The operating income and the income tax liability of a company are not affected by the method of process-costing being followed by the company.
- C) In the period of rising prices, weighted-average process-costing method will result in lower cost of goods sold as compared to FIFO process-costing method.
- D) In a period of falling prices, weighted-average process-costing method will result in a higher income tax liability as compared to FIFO process-costing method.

Answer: D

Diff: 2

Objective: 4

AACSB: Analytical thinking

41) FIFO Aluminum processes a single type of aluminum. During the current period the following information was given:

	Units	Material Costs	Conversion Costs
Beginning Inventory	4800	\$5700	\$6600
Started During the Current Period	20,800	49,200	67,000
Ending Inventory	2900		

All materials are added at the beginning of the production process. The beginning inventory was 35% complete as to conversion, while the ending inventory was 40% completed for conversion purposes.

FIFO Aluminum uses the first-in, first-out system of process costing.

What were the costs assigned to the units transferred out this period (Round intermediary calculations to the nearest cent)?

- A) \$114,391
- B) \$118,203
- C) \$246,250
- D) \$153,004

Answer: B

Diff: 3

Objective: 4

AACSB: Analytical thinking

EA

42) Which of the following entries is correct to record depreciation expense of Assembly Department?

- A) Debit: Work in Process—Assembly
Credit: Finished Goods
- B) Debit: Work in Process—Assembly
Credit: Accumulated Depreciation
- C) Debit: Finished Goods
Credit: Work in Process—Assembly
- D) Debit: Accumulated Depreciation
Credit: Work in Process—Assembly

Answer: B

Diff: 2

Objective: 4

AACSB: Analytical thinking

43) Audrey Auto Accessories manufactures plastic moldings for car seats. Its costing system uses two cost categories, direct materials and conversion costs. Each product must pass through Department A and Department B. Direct materials are added at the beginning of production. Conversion costs are allocated evenly throughout production.

Data for Department A for February 2017 are:

Work in process, beginning inventory, 35% converted	400 units
Units started during February	900 units
Work in process, ending inventory:	300 units
25% complete as to conversion costs	
100% complete as to materials	

Costs for the Department A for February 2017 are:

Work in process, beginning inventory:	
Direct materials	\$606,000
Conversion costs	\$159,000
Direct materials costs added during February	\$4,009,000
Conversion costs added during February	\$2,255,000

What were the equivalent units of direct materials and conversion costs, respectively, at the end of February? Assume Audrey uses the weighted-average process costing method.

- A) 1300; 1075
- B) 1300; 1300
- C) 1300; 1000
- D) 900; 600

Answer: A

Explanation: Equivalent units of direct materials under weighted average = units completed + equivalent units in ending inventory = 1000 + 300 = 1300 equivalent units

Conversion costs = 1000 + (300 × 25%) = 1075 equivalent units

Diff: 2

Objective: 4

AACSB: Application of knowledge

44) The weighted-average process costing method does not distinguish between units started in the previous period but completed during the current period and units started and completed during the current period.

Answer: TRUE

Diff: 2

Objective: 4

AACSB: Analytical thinking

45) Activity -based costing plays a more significant role in job costing as compared to process costing as companies using process costing have homogeneous products.

Answer: TRUE

Diff: 2

Objective: 4

AACSB: Analytical thinking

46) In the weighted-average costing method, the costs of direct materials in beginning inventory are NOT included in the cost per unit calculation since direct materials are almost always added at the start of the production process.

Answer: FALSE

Explanation: The costs of the direct materials are included in the cost per unit calculation.

Diff: 2

Objective: 4

AACSB: Analytical thinking

47) Partially completed units in ending work in process are 100 percent complete with regard to their direct materials costs if the direct materials are introduced at the beginning of the process.

Answer: TRUE

Diff: 2

Objective: 4

AACSB: Analytical thinking

48) The weighted-average cost is the total of all costs entering the Work-in-Process account (whether they are from beginning work-in-process or from work started during the current period) divided by total equivalent units of work done to date.

Answer: TRUE

Diff: 2

Objective: 4

AACSB: Analytical thinking

49) Weighted-average cost per equivalent unit is obtained by dividing the sum of costs for beginning work in process plus costs for work done in the current period by total equivalent units of work done to date.

Answer: TRUE

Diff: 2

Objective: 4

AACSB: Analytical thinking

EA

50) The cost of units completed can differ materially between the weighted average and the FIFO methods of process costing.

Answer: TRUE

Diff: 2

Objective: 4

AACSB: Analytical thinking

51) Under the FIFO method of process-costing, costs incurred and units produced in the current period are used to calculate the cost per equivalent unit of work in the current period in contrast the weighted-average method which merges the units and costs of the previous period with that of the current period.

Answer: TRUE

Diff: 2

Objective: 4

AACSB: Analytical thinking

52) A distinctive feature of the FIFO process costing method is that the work done on beginning inventory before the current period is kept separate from work done in the current period.

Answer: TRUE

Explanation: A distinctive feature of the FIFO process costing method is that the work done on beginning inventory before the current period is kept separate from work done in the current period.

Diff: 2

Objective: 4

AACSB: Analytical thinking

53) In a period of rising prices, the weighted-average method will result in higher tax payments.

Answer: FALSE

Explanation: In a period of rising prices, the weighted-average method will decrease taxes because cost of goods sold will be higher and operating income lower.

Diff: 2

Objective: 4

AACSB: Analytical thinking

54) In calculating cost per equivalent unit, the FIFO method of process costing merges the work and the costs of the beginning inventory with the work and the costs done during the current period.

Answer: FALSE

Explanation: In calculating cost per equivalent unit, the FIFO method of process costing only includes the work and the costs done during the current period.

Diff: 2

Objective: 4

AACSB: Analytical thinking

55) The first-in, first-out process-costing method assumes that the earliest equivalent units in work in process are completed first.

Answer: TRUE

Diff: 2

Objective: 4

AACSB: Analytical thinking

56) In a period of falling prices, the lower cost of goods sold under the FIFO method leads to higher operating income and higher tax payments.

Answer: FALSE

Explanation: In a period of falling prices, the higher cost of goods sold under the FIFO method leads to lower operating income and lower tax payments.

Diff: 3

Objective: 4

AACSB: Analytical thinking

57) The weighted average method of process costing assigns the cost of equivalent units worked on during the *current* period first to complete beginning inventory, next to start and complete new units, and finally to units in ending work-in-process inventory.

Answer: FALSE

Explanation: The FIFO method of process costing assigns the cost of equivalent units worked on during the *current* period first to complete beginning inventory, next to start and complete new units, and finally to units in ending work-in-process inventory.

Diff: 2

Objective: 4

AACSB: Analytical thinking

58) The weighted-average method merges unit costs from different accounting periods, obscuring period-to-period comparisons.

Answer: TRUE

Diff: 2

Objective: 4

AACSB: Analytical thinking

EA

59) Pet Products Company uses an automated process to manufacture its pet replica products. For June, the company had the following activities:

Beginning work in process inventory	4,500 items, 1/4 complete with regards to conversion costs
Units placed in production	15,000 units
Units completed	17,500 units
Ending work in process inventory	2,000 items, 3/4 complete with regards to conversion costs
Cost of beginning work in process	\$5,250
Direct material costs, current	\$16,500
Conversion costs, current	\$23,945

Direct materials are placed into production at the beginning of the process and conversion costs are incurred evenly throughout the process.

Required:

Prepare a production cost worksheet using the FIFO method.

Answer: PRODUCTION COST WORKSHEET

<i>Flow of production</i>	Physical Units	Direct Materials	Conversion
Work in process, beginning	4,500		
Started during period	<u>15,000</u>		
To account for	<u>19,500</u>		
<i>Units completed</i>			
Work in process, beginning	4,500		3,375
Started and completed	13,000	13,000	13,000
Work in process, ending	<u>2,000</u>	<u>2,000</u>	<u>1,500</u>
	<u>19,500</u>	<u>15,000</u>	<u>17,875</u>

<i>Costs</i>	Totals	Direct Materials	Conversion
Work in process, beginning	\$5,250		
Costs added during period	<u>40,445</u>	<u>\$16,500</u>	<u>\$23,945</u>
Total costs to account for	\$45,695	\$16,500	\$23,945
Divided by equivalent units		<u>15,000</u>	<u>17,875</u>
Equivalent unit costs	<u>\$2.44</u>	<u>\$1.10</u>	<u>\$1.34</u>

<i>Assignment of costs</i>		
Work in process, beginning		5,250.00
Completion of beginning (3,375 × \$1.34)		<u>4,522.50</u>
Total beginning inventory		9,772.50
Started and Completed (13,000 × \$2.44)		<u>31,720.00</u>
Total costs transferred out		\$41,492.50
Work in process, ending		
Direct materials (2,000 × \$1.10)	\$2,200.00	
Conversion (2,000 × \$1.34 × 0.75)	2,010.00	<u>4,210.00</u>
Costs accounted for		<u>\$45,702.50</u>

Diff: 3

Objective: 4

AACSB: Analytical thinking

60) Four Seasons Company makes snow blowers. Materials are added at the beginning of the process and conversion costs are uniformly incurred. At the beginning of September, work in process is 40% complete and at the end of the month it is 60% complete. Other data for the month include:

Beginning work-in-process inventory	1,600 units
Units started	2,000 units
Units placed in finished goods	3,200 units
Conversion costs	\$200,000
Cost of direct materials	\$260,000
Beginning work-in-process costs:	
Materials	\$154,000
Conversion	\$ 82,080

Required:

- a. Prepare a production cost worksheet with supporting schedules using the weighted-average method of process costing.
- b. Prepare journal entries to record transferring of materials to processing and from processing to finished goods.

EA

Answer:

a. PRODUCTION COST WORKSHEET

<i>Flow of production</i>	Physical Units	Direct Materials	Conversion
Work in process, beginning	1,600		
Started during period	<u>2,000</u>		
To account for	<u>3,600</u>		
Units completed	3,200	3,200	3,200
Work in process, ending	400	400	240
Accounted for	<u>3,600</u>	<u>3,600</u>	<u>3,440</u>

<i>Costs</i>	Totals	Direct Materials	Conversion
Work in process, beginning	\$ 236,080	\$154,000	\$82,080
Costs added during period	<u>460,000</u>	<u>260,000</u>	<u>200,000</u>
Total costs to account for	\$696,080	\$414,000	\$282,080
Divided by equivalent units		<u>3,600</u>	<u>3,440</u>
Equivalent unit costs	<u>\$197</u>	<u>\$115</u>	<u>\$82</u>
<i>Assignment of costs</i>			
Completed units (3,200 × \$197)			\$630,400
Work in process, ending			
Direct materials (400 × \$115)		\$46,000	
Conversion (400 × \$82 × 0.60)		<u>19,680</u>	<u>65,680</u>
Costs accounted for			<u>\$696,080</u>

b.

Work in Process	260,000	
Materials Inventory		260,000
Finished Goods	630,400	
Work in Process		630,400

Diff: 3

Objective: 4

AACSB: Analytical thinking

EA

61) Shining Star Company uses an automated process to clean and polish its souvenir items. For March, the company had the following activities:

Beginning work in process inventory	3,000 items, 1/3 complete with regards to conversion costs
Units placed in production	12,000 units
Units completed	9,000 units
Ending work in process inventory	6,000 items, 2/5 complete with regards to conversion costs
Cost of beginning work in process	\$2,500
Direct material costs, current	\$9,000
Conversion costs, current	\$8,320

Direct materials are placed into production at the beginning of the process and conversion costs are incurred evenly throughout the process.

Required:

Prepare a production cost worksheet using the FIFO method.

EA

Answer: PRODUCTION COST WORKSHEET

<i>Flow of production</i>	Physical Units	Direct Materials	Conversion
Work in process, beginning	3,000		
Started during period	<u>12,000</u>		
To account for	<u>15,000</u>		
<i>Units completed</i>			
Work in process, beginning	3,000		2,000
Started and completed	6,000	6,000	6,000
Work in process, ending	<u>6,000</u>	<u>6,000</u>	<u>2,400</u>
	<u>15,000</u>	<u>12,000</u>	<u>10,400</u>

<i>Costs</i>	Totals	Direct Materials	Conversion
Work in process, beginning	\$2,500		0
Costs added during period	<u>17,320</u>	<u>\$9,000</u>	<u>\$8,320</u>
Total costs to account for	\$19,820	\$9,000	\$8,320
Divided by equivalent units		<u>12,000</u>	<u>10,400</u>
Equivalent unit costs	<u>\$1.55</u>	<u>\$0.75</u>	<u>\$0.80</u>

<i>Assignment of costs</i>		
Work in process, beginning		2,500
Completion of beginning (2,000 × \$0.80)		<u>1,600</u>
Total beginning inventory		4,100
Started and Completed (6,000 × \$1.55)		<u>9,300</u>
Total costs transferred out		\$13,400
Work in process, ending		
Direct materials (6,000 × \$0.75)	\$4,500	
Conversion (6,000 × \$0.80 × 0.40)	1,920	<u>6,420</u>
Costs accounted for		<u>\$19,820</u>

Diff: 3

Objective: 4

AACSB: Analytical thinking

62) What is the difference between a weighted-average method of process costing and a first-in, first-out method of process costing?

Answer: The weighted average method computes unit costs by dividing total costs entering the work-in-process account (whether from beginning work-in-process or from work started during the period) by total equivalent units completed to date, and assigns this average cost to units completed and to units in ending work-in process inventory.

The first-in, first-out (FIFO) method computes unit costs based on costs incurred during the current period and equivalent units of work done in the current period. It assigns the costs of beginning work-in-process inventory to the first units completed, and it assigns costs of the equivalent units worked on during the current period first to complete beginning inventory, next to start and complete new units, and finally to units in ending work-in-process inventory.

Diff: 3

Objective: 4

AACSB: Analytical thinking

63) High Universal Industries operates a division in Brazil, a country with very high inflation rates. Traditionally, the company has used the same costing techniques in all countries to facilitate reporting to corporate headquarters. However, the financial accounting reports from Brazil never seem to match the actual unit results of the division. Management has studied the problem and it appears that beginning inventories may be the cause of the unmatched information. The reason for this is that the inventories have a different financial base because of the severe inflation.

Required:

How can process costing assist in addressing the problem facing Universal Industries?

Answer: Probably the best way to address the problem of inflation is to use FIFO costing. This method keeps the cost of beginning inventories separate from production units started and completed in a given period. Therefore, the company may be able to track the cost of items that were actually produced in a given period, versus mixing the units and costs of multiple periods.

Diff: 2

Objective: 4

AACSB: Analytical thinking

17.5 Objective 17.5

1) Which of the following best describes transferred-in costs?

- A) they are the cost of transferring products from a vendor
- B) they are value-added costs that are only considered in the first-in,first out process costing system
- C) costs incurred in a previous department or process that are carried forward as the product's cost as that product moves to another department or process in the production cycle
- D) they are the shipping costs related to finished goods that are transported to a customer's location

Answer: C

Diff: 1

Objective: 5

AACSB: Analytical thinking

2) Which of the following best describes transferred-in costs in process costing?

- A) These costs are incurred in previous departments that are carried forward to subsequent departments.
- B) These costs are transferred in to the company by an external vendor.
- C) These costs are incurred in transferring raw materials and labor from the place of availability to the factory.
- D) These costs cannot be controlled by an organization as they are transferred to the organization from the market participants.

Answer: A

Diff: 2

Objective: 5

AACSB: Analytical thinking

3) Transferred-in costs are treated as if they are _____.

- A) conversion costs added at the beginning of the process
- B) costs of beginning inventory added at the beginning of the process
- C) direct labor costs added at the beginning of the process
- D) a separate direct material added at the beginning of the process

Answer: D

Diff: 2

Objective: 5

AACSB: Analytical thinking

EA

4) Direct Disk Drive Company operates a computer disk manufacturing plant. Direct materials are added at the end of the process. The following data were for June 2017:

Work in process, beginning inventory	25,400 units
Transferred-in costs (100% complete)	
Direct materials (0% complete)	
Conversion costs (85% complete)	
Transferred in during current period	165,100 units
Completed and transferred out	185,200 units
Work in process, ending inventory	5700 units
Transferred-in costs (100% complete)	
Direct materials (0% complete)	
Conversion costs (65% complete)	

How many units must be accounted for during the period?

- A) 216,300 units
- B) 190,500 units
- C) 169,945 units
- D) 139,700 units

Answer: B

Explanation: Number of units that must be accounted for in the period = 25,400 units (Beginning inventory) + 165,100 units (Transferred in during the current period) = 190,500 units

Diff: 1

Objective: 5

AACSB: Analytical thinking

EA

5) Direct Disk Drive Company operates a computer disk manufacturing plant. Direct materials are added at the end of the process. The following data were for August 2017:

Work in process, beginning inventory	151,400 units
Transferred-in costs (100% complete)	
Direct materials (0% complete)	
Conversion costs (80% complete)	

Transferred in during current period	451,200 units
Completed and transferred out	401,000 units

Work in process, ending inventory	202,000 units
Transferred-in costs (100% complete)	
Direct materials (0% complete)	
Conversion costs (55% complete)	

Calculate equivalent units for conversion costs using the FIFO method.

- A) 30,280 units
- B) 353,400 units
- C) 299,800 units
- D) 390,580 units

Answer: D

Explanation: Beginning work in process ($151,400 \times 0.2$) 30,280 units
Completed and transferred out ($451,200 - 202,000$) 249,200 units
Ending work in process ($202,000 \times 0.55$) 111,100 units
390,580 units

Diff: 2

Objective: 5

AACSB: Analytical thinking

6) The journal entry for transfer from Department B to finished goods is:

Debit: Work in Process—Department B

Credit: Finished Goods Control

Answer: FALSE

Explanation: The correct entry is as follows:

Finished Goods Control

Work in Process—Department B

Diff: 3

Objective: 5

AACSB: Analytical thinking

7) In a series of interdepartmental transfers, each department is regarded as separate and distinct for accounting purposes.

Answer: TRUE

Diff: 2

Objective: 5

AACSB: Analytical thinking

8) When calculating the costs to be transferred using the FIFO method, we should not include costs assigned in the previous period to units that were in process at the beginning of the current period but are now included in the units transferred.

Answer: FALSE

Explanation: When calculating the costs to be transferred using the FIFO method, we should include costs assigned in the previous period to units that were in process at the beginning of the current period but are now included in the units transferred.

Diff: 2

Objective: 5

AACSB: Analytical thinking

9) Transferred-in costs are treated as if they are 100 percent complete at the beginning of the process in the new department.

Answer: TRUE

Diff: 2

Objective: 5

AACSB: Analytical thinking

10) Transferred-in costs are costs incurred in previous departments that are carried forward as the product's cost when it moves to a subsequent process in the production cycle.

Answer: TRUE

Diff: 2

Objective: 5

AACSB: Analytical thinking

11) Otylia Manufacturing Company assembles its product in several departments. It has two departments that process all units. During February, the beginning work in process in the cutting department was half completed as to conversion, and complete as to direct materials. The beginning inventory included \$12,000 for materials and \$3,000 for conversion costs. Ending work-in-process inventory in the cutting department was 40% complete. Direct materials are added at the beginning of the process.

Beginning work in process in the finishing department was 75% complete as to conversion. Beginning inventories included \$16,000 for transferred-in costs and \$20,000 for conversion costs. Ending inventory was 25% complete. Additional information about the two departments follows:

	Cutting	Finishing
Beginning work-in-process units	20,000	20,000
Units started this period	40,000	50,000
Units transferred this period	50,000	
Ending work-in-process units	10,000	20,000
Material costs added	\$42,000	\$28,000
Direct manufacturing labor	\$18,700	\$40,000
Other conversion costs	\$21,500	\$24,000

Required:

Prepare a production cost worksheet using weighted-average for the cutting department.

EA

12) The Laramie Factory produces expensive boots. It has two departments that process all the items. During January, the beginning work in process in the tanning department was 40% complete as to conversion and 100% complete as to direct materials. The beginning inventory included \$6,000 for materials and \$18,000 for conversion costs. Ending work-in-process inventory in the tanning department was 40% complete. Direct materials are added at the beginning of the process.

Beginning work in process in the finishing department was 60% complete as to conversion. Beginning inventories included \$7,000 for transferred-in costs and \$10,000 for conversion costs. Ending inventory was 30% complete.

Additional information about the two departments follows:

	Tanning	Finishing
Beginning work-in-process units	5,000	4,000
Units started this period	14,000	?
Units transferred this period	16,000	18,000
Ending work-in-process units	?	2,000
Material costs added	\$18,000	?
Conversion costs	32,000	\$19,000
Transferred-out cost	50,000	?

Required:

Prepare a production cost worksheet using weighted-average costing for the finishing department.

13) Lexington Company produces baseball bats and cricket paddles. It has two departments that process all products. During July, the beginning work in process in the cutting department was half completed as to conversion, and complete as to direct materials. The beginning inventory included \$40,000 for materials and \$60,000 for conversion costs. Ending work-in-process inventory in the cutting department was 40% complete. Direct materials are added at the beginning of the process.

Beginning work in process in the finishing department was 80% complete as to conversion. Direct materials for finishing the units are added near the end of the process. Beginning inventories included \$24,000 for transferred-in costs and \$28,000 for conversion costs. Ending inventory was 30% complete. Additional information about the two departments follows:

	Cutting	Finishing
Beginning work-in-process units	20,000	24,000
Units started this period	60,000	
Units transferred this period	64,000	68,000
Ending work-in-process units		20,000
Material costs added	\$48,000	\$34,000
Conversion costs	28,000	68,500
Transferred-out cost	128,000	

Required:

Prepare a production cost worksheet, using FIFO for the finishing department.

14) When there are multiple support departments within an organization, it is common to use journal entries to transfer-in costs from one department to another. What are some of the points to remember about these costs?

Answer:

1. Be sure to include transferred-in costs from previous departments in your calculations.
2. If you are using a FIFO basis, do not overlook costs assigned in the previous period to units that were in process at the beginning of the current period but are now included in the units transferred.
3. Unit costs may fluctuate between periods, consequently, transferred units may contain batches accumulated at different unit costs.
4. Different departments may have different measurement denominations. If this is the case, as units are received in one department coming from another department, their measurements must be converted to the denomination of the receiving department.

Diff: 2

Objective: 5

AACSB: Analytical thinking

17.6 Objective 17.6

1) Which of the following companies is most likely to use an operation-costing system?

- A) a company involved in manufacture of ball bearing on a large scale
- B) a company that has been awarded a contract to construct a bridge for the government
- C) a company that makes suits for which the basic design is same, but depending on specifications, each batch of suits varies somewhat from other batches
- D) a furniture making company which makes furniture pieces as per the specifications of the customers

Answer: C

Diff: 3

Objective: 6

AACSB: Application of knowledge

2) A golf shoe manufacturer makes and sells thousands of golf shoes each year through two channels: wholesale to sporting good stores and direct to consumers through it's custom portal. Customers can specify modifications to 6 basic golf shoe models including spiked or spikeless, traditional or casual, even laced or other closures. From there, customers can specify many details to their preferred model such as size and width (different for each foot), favorite colors for the base, saddle, accents and laces. A customer can choose to embroidered a name or initials or include the logo of their favorite MLB, NFL, NHL or NCAA team. Which of the following costing systems would make the most sense for the custom golf shoe operation and the main product operation (not customized/wholesale)?

- A) Operation-costing and job costing
- B) job costing for both operations
- C) Operation-costing and process costing
- D) process costing for both operations

Answer: C

Diff: 3

Objective: 6

AACSB: Analytical thinking

EA

3) Managers find operation costing useful in cost management because it _____.

- A) often results in profit maximization
- B) results in cost minimization
- C) focuses on control of physical processes of a given production system
- D) uses job costing to account for the conversion costs and process costing for the material and customizable components

Answer: C

Diff: 2

Objective: 6

AACSB: Analytical thinking

4) An operation is a standardized method or technique performed repetitively, often on different materials, resulting in different finished goods.

Answer: TRUE

Diff: 2

Objective: 6

AACSB: Analytical thinking

5) In hybrid-costing systems, managers use process costing to account for the conversion costs and job costing for the material and customizable components.

Answer: TRUE

Diff: 2

Objective: 6

AACSB: Analytical thinking

6) A hybrid-costing system is a variant of process-costing that allows it to incorporate benefits of standard costing and activity-based costing.

Answer: FALSE

Explanation: A hybrid-costing system blends characteristics from both job-costing and process-costing systems.

Diff: 2

Objective: 6

AACSB: Analytical thinking

7) An operation-costing system is a hybrid-costing system applied to batches of similar, but NOT identical, products.

Answer: TRUE

Diff: 2

Objective: 6

AACSB: Analytical thinking

8) Ford Motor Company is said to use a hybrid costing system. What is a hybrid costing system, and what would be the advantage to Ford of such a system?

Answer: A hybrid costing system is one that combines the elements of job costing and process costing systems. Important elements of profitability include knowing what the costs are, and controlling costs. Ford has a basic platform that they use to produce cars. Vehicles undergo essentially the same processing and are in effect manufactured in a continuous flow using standard parts and standardized manufacturing processes.

Another important part of profitability is making a product different than other vehicles so buyers will be attracted to purchase the vehicle. Vehicles that are different can command a higher price and increase profitability. Costs are accumulated using process costing up to the point where the product is differentiated. Job costing is used from that point forward.

Diff: 2

Objective: 6

AACSB: Analytical thinking

17.7 Objective 17.A

1) Emerging Dock Company manufactures boat docks on an assembly line. Its standard costing system uses two cost categories, direct materials and conversion costs. Each product must pass through the Assembly Department and the Finishing Department. Direct materials are added at the beginning of the production process. Conversion costs are allocated evenly throughout production.

Data for the Assembly Department for May 2017 are:

Work in process, beginning inventory:	88 units
Direct materials (100% complete)	
Conversion costs (30% complete)	
Units started during May	40 units
Work in process, ending inventory:	26 units
Direct materials (100% complete)	
Conversion costs (55% complete)	

Costs for May:

Standard costs for Assembly:	
Direct materials	\$10,000 per unit
Conversion costs	\$36,000 per unit
Work in process, beginning inventory:	
Direct materials	\$28,300
Conversion costs	\$520,500

EA

What is the balance in ending work-in-process inventory?

- A) \$514,855
- B) \$774,800
- C) \$288,490
- D) \$175,960

Answer: B

Explanation: $26 \text{ units} \times \$10,000 = \$260,000$

$26 \text{ units} \times 55\% \times \$36,000 =$ 514,800
\$774,800

Diff: 3

Objective: A

AACSB: Application of knowledge

2) Which of the following entries is used to record the standard costs of direct materials assigned to units worked on and total direct materials variances?

- A) Work in Process (at standard costs)
 - Direct Materials Variances
 - Direct Materials Control
- B) Work in Process (at actual costs)
 - Direct Materials Variances
 - Direct Materials Control
- C) Direct Materials Variances
 - Direct Materials Control
 - Work in Process (at standard costs)
- D) Direct Materials Variances
 - Direct Materials Control
 - Work in Process (at actual costs)

Answer: A

Diff: 3

Objective: A

AACSB: Analytical thinking

EA

3) Emerging Dock Company manufactures boat docks on an assembly line. Its standard costing system uses two cost categories, direct materials and conversion costs. Each product must pass through the Assembly Department and the Finishing Department. Direct materials are added at the beginning of the production process. Conversion costs are allocated evenly throughout production.

Data for the Assembly Department for May 2017 are:

Work in process, beginning inventory:	70 units
Direct materials (100% complete)	
Conversion costs (35% complete)	
Units started during May	50 units
Work in process, ending inventory:	26 units
Direct materials (100% complete)	
Conversion costs (45% complete)	

Costs for May:

Standard costs for Assembly:	
Direct materials	\$9000 per unit
Conversion costs	\$36,500 per unit

Work in process, beginning inventory:	
Direct materials	\$28,400
Conversion costs	\$521,000

Which of the following journal entries records the Assembly Department's conversion costs at actual costs for the month, assuming conversion costs are 15% higher than expected?

A) Assembly Department Conversion Cost Control	3,408,370	
Various accounts		3,408,370
B) Materials Inventory	3,408,370	
Assembly Department Conversion Cost Control		3,408,370
C) Assembly Department Conversion Cost Control	2,963,800	
Materials Inventory		2,963,800
D) Materials Inventory	3,408,370	
Work in Process — Assembly		3,408,370

Answer: A

Explanation: $70 \text{ units} \times 65\% \times \$36,500 = \$1,660,750$

$(50 - 26 \text{ units}) \times \$36,500 = 876,000$

$26 \text{ units} \times 45\% \times \$36,500 = \underline{427,050}$

Budgeted 2,963,800

$\$2,963,800 \times 1.15\% = \$3,408,370$

Diff: 3

Objective: A

AACSB: Application of knowledge

EA

4) Emerging Dock Company manufactures boat docks on an assembly line. Its standard costing system uses two cost categories, direct materials and conversion costs. Each product must pass through the Assembly Department and the Finishing Department. Direct materials are added at the beginning of the production process. Conversion costs are allocated evenly throughout production.

Data for the Assembly Department for May 2017 are:

Work in process, beginning inventory:	76 units
Direct materials (100% complete)	
Conversion costs (35% complete)	
Units started during May	60 units
Work in process, ending inventory:	10 units
Direct materials (100% complete)	
Conversion costs (55% complete)	

Costs for May:

Standard costs for Assembly:	
Direct materials	\$12,500 per unit
Conversion costs	\$34,500 per unit

Work in process, beginning inventory:	
Direct materials	\$28,450
Conversion costs	\$521,500

Which of the following journal entries records the total conversion costs variances of the Assembly Department, assuming that conversion costs are 15% higher than expected?

A) Work in Process — Assembly	4,161,908	
Conversion-Cost Variances		542,858
Assembly Department Conversion Cost Control		3,619,050
B) Assembly Department Conversion Costs Allocated	4,161,908	
Direct Materials Variances		542,858
Finishing Department Conversion Cost Control		3,619,050
C) Assembly Department Conversion Costs Allocated	3,619,050	
Conversion-Cost Variances	542,858	
Assembly Department Conversion Cost Control		4,161,908
D) Work in Process — Assembly	542,858	
Assembly Department Conversion Cost Control		542,858

EA

Answer: C

Explanation: $76 \text{ units} \times 65\% \times \$34,500 = \$1,704,300$

$(60 - 10 \text{ units}) \times \$34,500 = 1,725,000$

$10 \text{ units} \times 55\% \times \$34,500 = \underline{189,750}$

Budgeted \$3,619,050

$\$3,619,050 \times 1.15 = \$4,161,908$

$\$4,161,908 - \$3,619,050 = \$542,858$ conversion cost variances

Diff: 3

Objective: A

AACSB: Application of knowledge

5) Emerging Dock Company manufactures boat docks on an assembly line. Its standard costing system uses two cost categories, direct materials and conversion costs. Each product must pass through the Assembly Department and the Finishing Department. Direct materials are added at the beginning of the production process. Conversion costs are allocated evenly throughout production.

Data for the Assembly Department for May 2017 are:

Work in process, beginning inventory:	82 units
Direct materials (100% complete)	
Conversion costs (30% complete)	

Units started during May	48 units
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Work in process, ending inventory:	22 units
Direct materials (100% complete)	
Conversion costs (50% complete)	

Costs for May:

Standard costs for Assembly:	
Direct materials	\$12,000 per unit
Conversion costs	\$33,000 per unit

Work in process, beginning inventory:	
Direct materials	\$28,400
Conversion costs	\$522,000

Which of the following journal entries records the standard costs of direct materials assigned to units worked on and total direct materials variances assuming that the Assembly Department used 15% less materials than expected?

EA

A) Work in Process — Assembly	576,000	
Assembly Department Materials Cost Control		576,000
B) Work in Process — Assembly	576,000	
Direct Materials Variance		86,400
Assembly Department Materials Cost Control		489,600
C) Work in Process — Assembly	86,400	
Assembly Department Materials Cost Control		86,400
D) Work in Process — Assembly	489,600	
Direct Materials Variances	86,400	
Assembly Department Materials Cost Control		576,000

Answer: B

Explanation: $48 \times \$12,000 = \$576,000$

$\$576,000 \times 0.85 = \$489,600$

Diff: 2

Objective: A

AACSB: Application of knowledge

6) Morgan Clay Products manufactures clay molded pottery on an assembly line. Its standard costing system uses two cost categories, direct materials and conversion costs. Each product must pass through the Molding Department and the Finishing Department. Direct materials are added at the beginning of the production process. Conversion costs are allocated evenly throughout production.

Data for the Assembly Department for August 2017 are:

Work in process, beginning inventory:	3000 units
Direct materials (100% complete)	
Conversion costs (40% complete)	
Units started during August	695 units
Work in process, ending inventory:	500 units
Direct materials (100% complete)	
Conversion costs (65% complete)	

Costs for August:

Standard costs for Assembly:	
Direct materials	\$15 per unit
Conversion costs	\$35.50 per unit
Work in process, beginning inventory:	
Direct materials	\$12,400
Conversion costs	\$9450

EA

What is the balance in ending work-in-process inventory?

- A) \$61,500
- B) \$21,850
- C) \$18,373
- D) \$19,038

Answer: D

Explanation: $500 \text{ units} \times \$15 = \$7500$
 $500 \text{ units} \times 65\% \times \$35.50 = \underline{11,538}$
 $\underline{\underline{\$19,038}}$

Diff: 3

Objective: A

AACSB: Application of knowledge

7) Morgan Clay Products manufactures clay molded pottery on an assembly line. Its standard costing system uses two cost categories, direct materials and conversion costs. Each product must pass through the Molding Department and the Finishing Department. Direct materials are added at the beginning of the production process. Conversion costs are allocated evenly throughout production.

Data for the Assembly Department for August 2017 are:

Work in process, beginning inventory:	2600 units
Direct materials (100% complete)	
Conversion costs (35% complete)	

Units started during August	715 units
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Work in process, ending inventory:	520 units
Direct materials (100% complete)	
Conversion costs (55% complete)	

Costs for August:

Standard costs for Assembly:	
Direct materials	\$18 per unit
Conversion costs	\$35.50 per unit

Work in process, beginning inventory:	
Direct materials	\$12,600
Conversion costs	\$8250

Which of the following journal entries records the Molding Department's conversion costs for the month, assuming conversion costs are 20% higher than expected?

EA

A) Molding Department Conversion Cost Control	15,414.10	
Various accounts		15,414.10
B) Materials Inventory	77,070.50	
Molding Department Conversion Cost Control		77,070.50
C) Molding Department Conversion Cost Control	92,484.60	
Various accounts		92,484.60
D) Materials Inventory	92,484.60	
Work in Process – Molding		92,484.60

Answer: C

Explanation: $2600 \text{ units} \times 55\% \times \$35.50 = \$59,995.00$

$(715 - 520 \text{ units}) \times \$35.50 = 6922.5$

$520 \text{ units} \times 55\% \times \$35.50 = \underline{10,153}$

Budgeted \$77,070.50

$\$77,070.50 \times 1.2 = \$92,484.60$

Diff: 3

Objective: A

AACSB: Application of knowledge

8) From an accounting standpoint, favorable cost variances are debit entries, while unfavorable ones are credits.

Answer: FALSE

Explanation: From an accounting standpoint, favorable cost variances are credit entries, while unfavorable ones are debits.

Diff: 2

Objective: A

AACSB: Analytical thinking

9) Under standard costing the cost per equivalent-unit calculation is more difficult than in either weighted average or FIFO.

Answer: FALSE

Explanation: The cost per equivalent-unit calculation is simpler because the cost is assumed constant during the accounting period.

Diff: 2

Objective: A

AACSB: Analytical thinking

10) Both, the standard-costing method and FIFO, assumes that the earliest equivalent units in beginning work in process are completed first.

Answer: TRUE

Diff: 2

Objective: A

AACSB: Analytical thinking

11) Standard costing is NOT possible in a firm that uses process costing.

Answer: FALSE

Explanation: Standard costing is possible in a firm that uses process costing.

Diff: 2

Objective: A

AACSB: Analytical thinking

12) Process-costing systems using standard costs record standard direct material costs in Direct Materials Control and standard conversion costs in Conversion Costs Control.

Answer: FALSE

Explanation: Process-costing systems using standard costs record actual direct material costs in Direct Materials Control and actual conversion costs in Conversion Costs Control.

Diff: 2

Objective: A

AACSB: Application of knowledge

13) In companies that produce masses of identical or similar units of output and consequently use process-costing systems, it is relatively easy to set standards and use a standard cost as the cost per equivalent unit.

Answer: TRUE

Diff: 2

Objective: A

AACSB: Analytical thinking

14) BIG Manufacturing Products has been using FIFO process costing for tracking the costs of its manufacturing activities. However, in recent months, the system has become somewhat bogged down with details. It seems that, when the company purchased Brown Electronics last year, its product lines increased six-fold. This has caused both the accountants and the suppliers of the information, the line managers, great difficulty in keeping the costs of each product line separate. Likewise, the estimation of the completion of ending work-in-process inventories and the associated costs has become very cumbersome. The chief financial officer of the company is looking for ways to improve the reporting system of product costs.

Required:

What can you recommend to improve the situation?

Answer: A beginning point would be to change to a standard costing system. Standard costing eliminates many of the problems of FIFO costing in tracking actual costs to products. With standard costing, only the equivalent units have to be determined immediately, not the actual cost of the period. A standard cost for materials and conversion is then applied to the equivalent units for the reporting period. Actual costs and variances from standard costing can be determined later. This approach is very appropriate for a company that has many products.

Diff: 3

Objective: A

AACSB: Analytical thinking