

Cost Accounting, 14e (Horngren/Datar/Rajan)
Chapter 18 Spoilage, Rework, and Scrap

Objective 18.1

- 1) Managers often cite reductions in the costs of spoilage as a(n):
- A) major justification for implementing a just-in-time production system
 - B) measurement of improved output quality
 - C) immaterial item that is not to be tracked
 - D) indication of improvement in the accounting system

Answer: A

Diff: 2

Terms: spoilage

Objective: 1

AACSB: Analytical skills

- 2) Unacceptable units of production that are discarded or sold for reduced prices are referred to as:
- A) reworked units
 - B) spoilage
 - C) scrap
 - D) defective units

Answer: B

Diff: 1

Terms: spoilage

Objective: 1

AACSB: Ethical reasoning

- 3) Unacceptable units of production that are subsequently repaired and sold as acceptable finished goods are:
- A) reworked units
 - B) spoilage
 - C) scrap
 - D) defective units

Answer: A

Diff: 1

Terms: rework

Objective: 1

AACSB: Reflective thinking

- 4) Costs of poor quality production include the:
- A) opportunity cost of the plant and workers
 - B) effect on current customers
 - C) effect on potential customers
 - D) All of these answers are correct.

Answer: D

Diff: 2

Terms: spoilage

Objective: 1

AACSB: Reflective thinking

5) Material left over when making a product is referred to as:

- A) reworked units
- B) spoilage
- C) scrap
- D) defective units

Answer: C

Diff: 1

Terms: scrap

Objective: 1

AACSB: Reflective thinking

6) A production process which involves spoilage and rework occurs in:

- A) the manufacture of high precision tools
- B) semiconductor units
- C) the manufacture of clothing
- D) All of these answers are correct.

Answer: A

Diff: 2

Terms: spoilage, rework

Objective: 1

AACSB: Reflective thinking

7) Some amounts of spoilage, rework, or scrap are inherent in many production processes.

Answer: TRUE

Diff: 2

Terms: spoilage

Objective: 1

AACSB: Analytical skills

8) An item classified as spoilage has no value.

Answer: FALSE

Explanation: Although the item does not meet the specifications, it may be sold as a "second" or for its scrap value. It is not necessarily thrown out.

Diff: 2

Terms: spoilage

Objective: 1

AACSB: Analytical skills

9) Reworked goods are unacceptable units of production usually NOT capable of being repaired or converted into a salable product.

Answer: FALSE

Explanation: **Rework** is units of production that do not meet the specifications required by customers but that are subsequently repaired and sold as good finished units.

Diff: 2

Terms: rework

Objective: 1

AACSB: Ethical reasoning

10) Rework is finished production that is NOT in accordance with customer desires. The product is redone and sold as finished goods.

Answer: TRUE

Diff: 2

Terms: rework

Objective: 1

AACSB: Ethical reasoning

11) Scrap is residual material that results from manufacturing a product. and can have either a high or low sales value relative to the product with which it is associated.

Answer: FALSE

Explanation: **Scrap** is residual material that results from manufacturing a product. Examples are short lengths from woodworking operations, edges from plastic molding operations, and frayed cloth and end cuts from suit-making operations. Scrap can sometimes be sold for relatively small amounts.

Diff: 2

Terms: scrap

Objective: 1

AACSB: Analytical skills

12) Scrap and rework are considered to be the same thing by managerial accountants.

Answer: FALSE

Explanation: Scrap and rework are not considered to be the same thing by managerial accountants.

Diff: 2

Terms: scrap, rework

Objective: 1

AACSB: Analytical skills

13) Distinguish among spoilage, reworked units, and scrap. Give an example of each.

Answer: *Spoilage* refers to unacceptable units of production that are discarded or are sold for reduced prices. Both partially completed or fully completed units of output can be spoiled. Examples are defective clothes sold as seconds.

Reworked units are unacceptable units of production that are subsequently repaired and sold as acceptable finished goods. Defective units of product (such as pagers, computer disk drives, computers, and telephones) detected during production or immediately after production but before units are shipped to customers, can sometimes be reworked and sold as good products.

Scrap is material left over when making a product. It has low sales value compared with the sales value of the product. Examples are shavings and short lengths from woodworking operations and edges left over from plastic molding operations.

Diff: 1

Terms: spoilage, rework, scrap

Objective: 1

AACSB: Reflective thinking

14) For each of the following items identify whether it is spoilage, reworked units, or scrap.

- _____ a. Defective jeans sold as seconds
- _____ b. Shavings
- _____ c. Edges from plastic moldings
- _____ d. Carpets sold as seconds
- _____ e. Precision tools that are not built successfully to the necessary tolerance, but which can be successfully converted to a saleable product
- _____ f. Rock extracted as a result of mining processing
- _____ g. Complex defective products such as semiconductors

Answer:

- a. spoilage
- b. scrap
- c. scrap
- d. spoilage
- e. spoilage and rework
- f. scrap
- g. spoilage (usually too complex to rework)

Diff: 2

Terms: spoilage, rework, scrap

Objective: 1

AACSB: Ethical reasoning

Objective 18.2

1) Spoilage that is an inherent result of the particular production process and arises under efficient operating conditions is referred to as:

- A) ordinary spoilage
- B) normal spoilage
- C) abnormal spoilage
- D) None of these answers is correct.

Answer: B

Diff: 2

Terms: normal spoilage

Objective: 2

AACSB: Reflective thinking

2) Spoilage that should NOT arise under efficient operating conditions is referred to as:

- A) ordinary spoilage
- B) normal spoilage
- C) abnormal spoilage
- D) None of these answers is correct.

Answer: C

Diff: 2

Terms: abnormal spoilage

Objective: 2

AACSB: Reflective thinking

3) Costs of normal spoilage are usually accounted for as:

- A) part of the cost of goods sold
- B) part of the cost of goods manufactured
- C) a separate line item in the income statement
- D) an asset in the balance sheet

Answer: B

Diff: 2

Terms: normal spoilage

Objective: 2

AACSB: Reflective thinking

4) Costs of abnormal spoilage are usually accounted for as:

- A) part of the cost of goods sold
- B) part of the cost of goods manufactured
- C) a separate line item in the income statement
- D) an asset in the balance sheet

Answer: C

Diff: 2

Terms: abnormal spoilage

Objective: 2

AACSB: Reflective thinking

5) The loss from abnormal spoilage account would appear:

- A) on the balance sheet
- B) as a detailed item in the retained earnings schedule of the balance sheet
- C) as a detailed item on the income statement
- D) Either A or B is correct.

Answer: C

Diff: 2

Terms: abnormal spoilage

Objective: 2

AACSB: Analytical skills

6) Normal spoilage should be computed using as the base the:

- A) total units completed
- B) total good units completed
- C) total actual units started into production
- D) None of these answers is correct.

Answer: B

Diff: 2

Terms: normal spoilage

Objective: 2

AACSB: Analytical skills

7) Companies that attempt to achieve zero defects in the manufacturing process treat spoilage as:

- A) scrap
- B) reworked units
- C) abnormal spoilage
- D) normal spoilage

Answer: C

Diff: 2

Terms: abnormal spoilage

Objective: 2

AACSB: Ethical reasoning

8) Which one of the following conditions usually exists when comparing normal and abnormal spoilage to controllability?

<u>Normal Spoilage</u>	<u>Abnormal Spoilage</u>
A) Controllable	Controllable
B) Controllable	Uncontrollable
C) Uncontrollable	Uncontrollable
D) Uncontrollable	Controllable

Answer: D

Diff: 2

Terms: normal spoilage, abnormal spoilage

Objective: 2

AACSB: Reflective thinking

9) NOT counting spoiled units in the equivalent-unit calculation results in:

- A) lower cost per good unit.
- B) higher cost per good unit
- C) better management information
- D) Both A and C are correct.

Answer: B

Diff: 2

Terms: spoilage

Objective: 2

AACSB: Analytical skills

10) Recognition of spoiled units when computing output units:

- A) highlights the costs of normal spoilage to management
- B) distorts the accounting data
- C) focuses management's attention on reducing spoilage
- D) Both A and C are correct.

Answer: D

Diff: 2

Terms: spoilage, normal spoilage

Objective: 2

AACSB: Communication

11) The costs of normal spoilage are typically included as a component of the costs of good units manufactured.

Answer: TRUE

Diff: 2

Terms: normal spoilage

Objective: 2

AACSB: Analytical skills

12) Abnormal spoilage is spoilage inherent in a particular production process.

Answer: FALSE

Explanation: Normal spoilage is spoilage inherent in a particular production process.

Diff: 2

Terms: normal spoilage

Objective: 2

AACSB: Analytical skills

13) Abnormal spoilage is spoilage that should arise under efficient operating conditions.

Answer: FALSE

Explanation: Abnormal spoilage should not arise under efficient operating conditions.

Diff: 2

Terms: abnormal spoilage

Objective: 2

AACSB: Analytical skills

14) Companies calculate the units of abnormal spoilage and record the cost in the Loss from Abnormal Spoilage account, which appears as a separate line item in the income statement.

Answer: TRUE

Diff: 2

Terms: abnormal spoilage

Objective: 2

AACSB: Ethical reasoning

15) Spoilage can be considered either normal or abnormal.

Answer: TRUE

Diff: 2

Terms: spoilage

Objective: 2

AACSB: Ethical reasoning

16) Normal spoilage is spoilage that is NOT considered to be inherent in a production process.

Answer: FALSE

Explanation: Normal spoilage is spoilage that is considered to be inherent in a production process.

Diff: 1

Terms: normal spoilage

Objective: 2

AACSB: Analytical skills

17) Under efficient operating conditions, all spoilage is considered to be abnormal spoilage.

Answer: FALSE

Explanation: Normal spoilage is spoilage that is considered to be inherent in a production process. It arises even when the process is operated in an efficient manner.

Diff: 1

Terms: normal spoilage

Objective: 2

AACSB: Ethical reasoning

18) Normal spoilage rates are computed by dividing units of normal spoilage by total good units completed, NOT total actual units started in production.

Answer: TRUE

Diff: 2

Terms: normal spoilage

Objective: 2

AACSB: Analytical skills

19) A company might consider all spoilage to be abnormal if it wants to pay serious attention to the problem.

Answer: TRUE

Diff: 2

Terms: abnormal spoilage

Objective: 2

AACSB: Ethical reasoning

20) Costs of abnormal spoilage are separately accounted for as losses of the period.

Answer: TRUE

Diff: 2

Terms: abnormal spoilage

Objective: 2

AACSB: Analytical skills

21) What are the objectives in accounting for spoilage?

Answer: The key objectives in accounting for spoilage are determining the magnitude of the costs of the spoilage and distinguishing between the costs of normal and abnormal spoilage. To effectively manage a company (or a division of a business), a manager needs information concerning how his business is performing. Spoilage is a cost which should be controlled and minimized. The dimensions of the cost must be known (the dollar amount of the spoilage). The accounting system must be capable of determining the dollar amount of the spoilage costs while distinguishing between normal and abnormal spoilage. This information must be reported and available to management on a timely basis.

Diff: 2

Terms: spoilage

Objective: 2

AACSB: Reflective thinking

22) The Joe's Pottery manufactures pottery products. All direct materials are included at the inception of the production process. For April, there was no beginning inventory in the processing plant. Direct materials totaled \$155,000 for the month. Work-in-process records revealed that 2,500 tons were started in April and that 1,500 tons were finished; 500 tons were spoiled as expected. Ending work-in-process units are complete in respect to direct materials costs. Spoilage is not detected until the process is complete.

Required:

- What is the cost per equivalent unit if spoiled units are recognized or ignored?
- What are the costs assigned to completed units when spoilage units are recognized or when they are not recognized?
- What are the costs transferred out if spoilage units are recognized or ignored?
- What are the amounts allocated to the work-in-process ending inventory when spoilage units are recognized or ignored?

Answer:

a.	<u>Recognized</u>	<u>Ignored</u>
Cost to account for	\$155,000	\$155,000
Divided by equivalent units	<u>2,500</u>	<u>2,000</u>
Cost per equivalent unit	<u>\$ 62</u>	<u>\$ 77.50</u>
b. Assigned to good units completed:		
(1,500 × \$62)	\$93,000	
(1,500 × \$77.50)		\$116,250
c. Transferred out <input type="checkbox"/> Finished	\$93,000	\$116,250
Normal spoilage (500 × \$62)	<u>31,000</u>	<u>0</u>
Total	<u>\$124,000</u>	<u>\$116,250</u>
d. Ending work-in-process inventory:		
(500 × \$62)	\$ 31,000	
(500 × \$77.50)		\$38,750

Diff: 2

Terms: spoilage

Objective: 2

AACSB: Analytical skills

Objective 18.3

Answer the following questions using the information below:

Triboro Computer Systems, Inc., manufactures printer circuit cards. All direct materials are added at the inception of the production process. During January, the accounting department noted that there was no beginning inventory. Direct materials purchases totaled \$200,000 during the month. Work-in-process records revealed that 8,000 card units were started in January, 4,000 card units were complete, and 3,000 card units were spoiled as expected. Ending work-in-process card units are complete in respect to direct materials costs. Spoilage is not detected until the process is complete.

1) What are the respective direct material costs per equivalent unit, assuming spoiled units are recognized or ignored?

- A) \$20.00; \$35.00
- B) \$25.00; \$40.00
- C) \$30.00; \$45.00
- D) \$35.00; \$50.00

Answer: B

Explanation:

	<u>Recognized</u>	Calculation for <u>Problem #</u>	<u>Ignored</u>
<i>Cost to account for:</i>	\$200,000		\$200,000
Divided by equivalent units	<u>8,000</u>		<u>5,000</u>
Cost per equivalent unit	<u>\$ 25.00</u>	(1)	<u>\$ 40.00</u>

Assigned to:

Good units completed (4,000 × \$25; \$40)	\$ 100,000		\$ 160,000
Normal spoilage (3,000 × \$25)	<u>75,000</u>		<u>0</u>
Costs transferred out	175,000	(2/3)	160,000
WIP ending inventory (1,000 × \$25; \$40)	<u>25,000</u>	(4)	<u>40,000</u>
Cost accounted for:	<u>\$200,000</u>		<u>\$200,000</u>

Diff: 2

Terms: spoilage

Objective: 3

AACSB: Analytical skills

2) What is the direct material cost assigned to good units completed when spoilage units are recognized?

- A) \$100,000
- B) \$200,000
- C) \$160,000
- D) \$175,000

Answer: D

Explanation:

D)

	<u>Recognized</u>	Calculation for <u>Problem #</u>	<u>Ignored</u>
<i>Cost to account for:</i>	\$200,000		\$200,000
Divided by equivalent units	<u>8,000</u>		<u>5,000</u>
Cost per equivalent unit	<u>\$ 25.00</u>	(1)	<u>\$ 40.00</u>
 <i>Assigned to:</i>			
Good units completed (4,000 × \$25; \$40)	\$ 100,000		\$ 160,000
Normal spoilage (3,000 × \$25)	<u>75,000</u>		<u>0</u>
Costs transferred out	175,000	(2/3)	160,000
WIP ending inventory (1,000 × \$25; \$40)	<u>25,000</u>	(4)	<u>40,000</u>
Cost accounted for:	<u>\$200,000</u>		<u>\$200,000</u>

Diff: 3

Terms: spoilage

Objective: 3

AACSB: Analytical skills

3) What is the cost transferred out assuming spoilage units are ignored?

- A) \$175,000
- B) \$160,000
- C) \$100,000
- D) \$155,000

Answer: B

Explanation:

B)

	<u>Recognized</u>	Calculation for <u>Problem #</u>	<u>Ignored</u>
<i>Cost to account for:</i>	\$200,000		\$200,000
Divided by equivalent units	<u>8,000</u>		<u>5,000</u>
Cost per equivalent unit	<u>\$ 25.00</u>	(1)	<u>\$ 40.00</u>
 <i>Assigned to:</i>			
Good units completed (4,000 × \$25; \$40)	\$ 100,000		\$ 160,000
Normal spoilage (3,000 × \$25)	<u>75,000</u>		<u>0</u>
Costs transferred out	175,000	(2/3)	160,000
WIP ending inventory (1,000 × \$25; \$40)	<u>25,000</u>	(4)	<u>40,000</u>
Cost accounted for:	<u>\$200,000</u>		<u>\$200,000</u>

Diff: 3

Terms: spoilage

Objective: 3

AACSB: Analytical skills

4) What are the amounts allocated to the work-in-process ending inventory assuming spoilage units are recognized and ignored, respectively?

- A) \$40,000; \$49,000
- B) \$60,000; \$68,500
- C) \$25,000; \$40,000
- D) \$75,000; \$80,000

Answer: C

Explanation:

C)

	<u>Recognized</u>	Calculation for <u>Problem #</u>	<u>Ignored</u>
<i>Cost to account for:</i>	\$200,000		\$200,000
Divided by equivalent units	<u>8,000</u>		<u>5,000</u>
Cost per equivalent unit	<u>\$ 25.00</u>	(1)	<u>\$ 40.00</u>
 <i>Assigned to:</i>			
Good units completed (4,000 × \$25; \$40)	\$ 100,000		\$ 160,000
Normal spoilage (3,000 × \$25)	<u>75,000</u>		<u>0</u>
Costs transferred out	175,000	(2/3)	160,000
WIP ending inventory (1,000 × \$25; \$40)	<u>25,000</u>	(4)	<u>40,000</u>
Cost accounted for:	<u>\$200,000</u>		<u>\$200,000</u>

Diff: 3

Terms: spoilage

Objective: 3

AACSB: Analytical skills

5) Spoilage costs allocated to ending work in process are larger by which method and by how much?

- A) when spoiled units are recognized, by \$5,000
- B) when spoiled units are recognized, by \$8,500
- C) when spoiled units are ignored, by \$15,000
- D) when spoiled units are recognized, by \$15,000

Answer: C

Explanation:

	<u>Recognized</u>	Calculation for <u>Problem #</u>	<u>Ignored</u>
<i>Cost to account for:</i>	\$200,000		\$200,000
Divided by equivalent units	<u>8,000</u>		<u>5,000</u>
Cost per equivalent unit	<u>\$ 25.00</u>	(1)	<u>\$ 40.00</u>
 <i>Assigned to:</i>			
Good units completed (4,000 × \$25; \$40)	\$ 100,000		\$ 160,000
Normal spoilage (3,000 × \$25)	<u>75,000</u>		<u>0</u>
Costs transferred out	175,000	(2/3)	160,000
WIP ending inventory (1,000 × \$25; \$40)	<u>25,000</u>	(4)	<u>40,000</u>
Cost accounted for:	<u>\$200,000</u>		<u>\$200,000</u>

$\$40,000 - \$25,000 = \$15,000$ or $\$15.00 \times 1,000 \text{ units} = 15,000$

Diff: 3

Terms: spoilage

Objective: 3

AACSB: Reflective thinking

Answer the following questions using the information below:

Craft Concept manufactures small tables in its Processing Department. Direct materials are added at the initiation of the production cycle and must be bundled in single kits for each unit. Conversion costs are incurred evenly throughout the production cycle. Before inspection, some units are spoiled due to nondetectable materials defects. Inspection occurs when units are 50% converted. Spoiled units generally constitute 5% of the good units. Data for December 2012 are as follows:

WIP, beginning inventory 12/1/2012	20,000 units
Direct materials (100% complete)	
Conversion costs (75% complete)	
Started during December	80,000 units
Completed and transferred out 12/31/2012	76,800 units
WIP, ending inventory 12/31/2012	16,000 units
Direct materials (100% complete)	
Conversion costs (65% complete)	

Costs for December:

WIP, beginning Inventory:	
Direct materials	\$ 100,000
Conversion costs	60,000
Direct materials added	200,000
Conversion costs added	280,000

6) What is the number of total spoiled units?

- A) 13,200 units
- B) 4,000 units
- C) 5,400 units
- D) 7,200 units

Answer: D

Explanation: D) Spoiled units = (20,000 units + 80,000) - (76,800 units + 16,000) = 7,200 units

Diff: 2

Terms: spoilage

Objective: 3

AACSB: Analytical skills

7) Normal spoilage totals:

- A) 3,200 units
- B) 4,000 units
- C) 3,840 units
- D) 5,400 units

Answer: C

Explanation: C) Normal spoilage = 5% × 76,800 units = 3,840 spoiled units

Diff: 2

Terms: normal spoilage

Objective: 3

AACSB: Analytical skills

8) Abnormal spoilage totals:

- A) 3,200 units
- B) 4,000 units
- C) 3,360 units
- D) 3,840 units

Answer: C

Explanation: C) Spoiled units = (20,000 units + 80,000) - (76,800 units + 16,000) = 7,200 units

Normal spoilage = $5\% \times 76,800$ units = 3,840 spoiled units

Abnormal spoilage = 7,200 units - 3,840 units = 3,360 units

Diff: 3

Terms: abnormal spoilage

Objective: 3

AACSB: Analytical skills

9) What is the total cost per equivalent unit using the weighted-average method of process costing?

- A) \$3.00
- B) \$3.60
- C) \$6.60
- D) \$4.60

Answer: C

Explanation: C)	<u>Direct Materials</u>	<u>Conversion Costs</u>
WIP, beginning inventory	\$ 100,000	\$ 60,000
Costs added during period	<u>200,000</u>	<u>280,000</u>
Total cost to account for	300,000	340,000
Divide by equivalent units	<u>100,000</u>	<u>94,400</u>
Equivalent-unit costs	<u>\$ 3.00</u>	<u>\$ 3.60</u>

Total cost per equivalent unit = \$3.00 + \$3.60 = \$6.60

Diff: 2

Terms: spoilage, weighted-average method

Objective: 3

AACSB: Analytical skills

10) What cost is allocated to abnormal spoilage using the weighted-average process-costing method?

- A) \$ 0
- B) \$ 14,720
- C) \$22,176
- D) \$32,800

Answer: C

Explanation: C) Spoiled units = (20,000 units + 80,000) - (76,800 units + 16,000) = 7,200 units

Normal spoilage = 5% × 76,800 units = 3,840 spoiled units

Abnormal spoilage = 7,200 units - 3,840 units = 3,360 units

	<u>Direct Materials</u>	<u>Conversion Costs</u>
WIP, beginning inventory	\$ 100,000	\$ 60,000
Costs added during period	<u>200,000</u>	<u>280,000</u>
Total cost to account for	300,000	340,000
Divide by equivalent units	<u>100,000</u>	<u>94,400</u>
Equivalent-unit costs	<u>\$ 3.00</u>	<u>\$ 3.60</u>

Total cost per equivalent unit = \$3.00 + \$3.60 = \$6.60

3,360 units × \$6.60 = \$22,176

Diff: 2

Terms: abnormal spoilage, weighted-average method

Objective: 3

AACSB: Analytical skills

11) What are the amounts of direct materials and conversion costs assigned to ending work in process using the weighted-average process-costing method?

- A) \$37,440; \$48,000
- B) \$45,800; \$39,640
- C) \$48,000; \$37,440
- D) \$57,120; \$28,320

Answer: C

	<u>Direct Materials</u>	<u>Conversion Costs</u>
WIP, beginning inventory	\$ 100,000	\$ 60,000
Costs added during period	<u>200,000</u>	<u>280,000</u>
Total cost to account for	300,000	340,000
Divide by equivalent units	<u>100,000</u>	<u>94,400</u>
Equivalent-unit costs	<u>\$ 3.00</u>	<u>\$ 3.60</u>

Total cost per equivalent unit = \$3.00 + \$3.60 = \$6.60

Direct materials = 16,000 units × \$3.00 = \$48,000

Conversion costs = 10,400 units × \$3.60 = \$37,440

Diff: 2

Terms: spoilage, weighted-average method

Objective: 3

AACSB: Analytical skills

Answer the following questions using the information below:

Fish Fillet Incorporated obtains fish and then processes them into frozen fillets and then prepares the frozen fish fillets for distribution to its retail sales department. Direct materials are added at the initiation of the cycle. Conversion costs are incurred evenly throughout the production cycle. Before inspection, some fillets are spoiled due to nondetectable defects. Inspection occurs when units are 50% converted. Spoiled fillets generally constitute 3.5% of the good fillets. Data for April 2012 are as follows:

WIP, beginning inventory 4/1/2012	80,000 fillets
Direct materials (100% complete)	
Conversion costs (50% complete)	
Started during April	150,000 fillets
Completed and transferred out 4/31/2012	200,000 fillets
WIP, ending inventory 4/31/2012	16,000 fillets
Direct materials (100% complete)	
Conversion costs (20% complete)	

Costs for April:

WIP, beginning Inventory:	
Direct materials	\$ 110,000
Conversion costs	80,000
Direct materials added	290,200
Conversion costs added	376,130

12) What is the number of total spoiled units?

- A) 16,000 units
- B) 10,000 units
- C) 50,000 units
- D) 14,000 units

Answer: D

Diff: 2

Terms: spoilage

Objective: 3

AACSB: Analytical skills

13) Normal spoilage totals:

- A) 7,000 units
- B) 0 units
- C) 16,000 units
- D) 14,000 units

Answer: A

Explanation: A) Normal spoilage = $3.5\% \times 200,000$ units = 7,000 spoiled units

Diff: 2

Terms: normal spoilage

Objective: 3

AACSB: Analytical skills

14) Abnormal spoilage totals:

- A) 7,000 units
- B) 0 units
- C) 16,000 units
- D) 14,000 units

Answer: A

Explanation: A) Spoiled units = (80,000 units + 150,000) - (200,000 units + 16,000 units) = 14,000 units

Normal spoilage = 3.5% × 200,000 units = 7,000 spoiled units

Abnormal spoilage = 14,000 units - 7,000 units = 7,000 units

Diff: 3

Terms: abnormal spoilage

Objective: 3

AACSB: Analytical skills

15) What is the total cost per equivalent unit using the weighted-average method of process costing?

- A) \$4.00
- B) \$1.74
- C) \$2.10
- D) \$3.84

Answer: D

	<u>Direct Materials</u>	<u>Conversion Costs</u>
WIP, beginning inventory	\$ 110,000	\$ 80,000
Costs added during period	<u>290,200</u>	<u>376,130</u>
Total cost to account for	400,200	456,130
Divide by equivalent units	<u>230,000</u>	<u>217,200</u>
Equivalent-unit costs	<u>\$ 1.74</u>	<u>\$ 2.10</u>

Total cost per equivalent unit = \$1.74 + \$2.10 = \$3.84

Diff: 2

Terms: spoilage, weighted-average method

Objective: 3

AACSB: Analytical skills

16) What cost is allocated to abnormal spoilage using the weighted-average process-costing method?

- A) \$ 0
- B) \$26,880
- C) \$53,760
- D) \$29,000

Answer: B

Explanation: B) Spoiled units = (80,000 units + 150,000) - (200,000 units + 16,000 units) 14,000 units

Normal spoilage = 3.5% × 200,000 units = 7,000 spoiled units

Abnormal spoilage = 14,000 units - 7,000 units = 7,000 units

	<u>Direct Materials</u>	<u>Conversion Costs</u>
WIP, beginning inventory	\$ 110,000	\$ 80,000
Costs added during period	<u>290,200</u>	<u>376,130</u>
Total cost to account for	400,200	456,130
Divide by equivalent units	<u>230,000</u>	<u>217,200</u>
Equivalent-unit costs	<u>\$ 1.74</u>	<u>\$ 2.10</u>

Total cost per equivalent unit = \$1.74 + \$2.10 = \$3.84

7,000 units × \$3.84 = \$26,880

Diff: 2

Terms: abnormal spoilage, weighted-average method

Objective: 3

AACSB: Analytical skills

17) What are the amounts of direct materials and conversion costs assigned to ending work in process using the weighted-average process-costing method?

- A) \$6,720; \$27,840
- B) \$27,840 \$6,720
- C) \$27,840; \$33,600
- D) \$33,600; \$27,840

Answer: B

	<u>Direct Materials</u>	<u>Conversion Costs</u>
WIP, beginning inventory	\$ 110,000	\$ 80,000
Costs added during period	<u>290,200</u>	<u>376,130</u>
Total cost to account for	400,200	456,130
Divide by equivalent units	<u>230,000</u>	<u>217,200</u>
Equivalent-unit costs	<u>\$ 1.74</u>	<u>\$ 2.10</u>

Total cost per equivalent unit = \$1.74 + \$2.10 = \$3.84

Direct materials = 16,000 units × \$1.74 = \$27,840

Conversion costs = 16,000 units × 20% × \$2.10 = \$6,720

Diff: 2

Terms: spoilage, weighted-average method

Objective: 3

AACSB: Analytical skills

18) The cost per good unit in the weighted-average method is equal to the:

- A) total cost of direct materials and conversion costs per equivalent unit, plus a share of normal spoilage
- B) sum of the costs per equivalent unit of direct materials, and conversion costs
- C) total costs divided by total equivalent units
- D) None of these answers is correct.

Answer: A

Diff: 2

Terms: spoilage, weighted-average method

Objective: 3

AACSB: Reflective thinking

19) Under the FIFO method, all spoilage costs are assumed to be related to the units:

- A) in beginning inventory, plus the units completed during the period
- B) completed during the period
- C) in ending inventory
- D) in both beginning and ending inventory plus the units completed during the period

Answer: B

Diff: 2

Terms: spoilage, first-in, first-out method

Objective: 3

AACSB: Ethical reasoning

Answer the following questions using the information below:

Cartwright Custom Carpentry manufactures chairs in its Processing Department. Direct materials are included at the inception of the production cycle and must be bundled in single kits for each unit. Conversion costs are incurred evenly throughout the production cycle. Inspection takes place as units are placed into production. After inspection, some units are spoiled due to nondetectable material defects. Spoiled units generally constitute 3% of the good units. Data provided for March 20X5 are as follows:

WIP, beginning inventory 3/1/20X5 30,000 units
 Direct materials (100% complete)
 Conversion costs (89.5% complete)

Started during March 80,000 units
Completed and transferred out 86,000 units

WIP, ending inventory 3/31/20X5 20,000 units
 Direct materials (100% complete)
 Conversion costs (75% complete)

Costs:

WIP, beginning inventory:
 Direct materials \$ 70,000
 Conversion costs 40,000
Direct materials added 160,000
Conversion costs added 120,000

- 20) What are the normal and abnormal spoilage units, respectively, for March when using FIFO?
A) 2,580 units; 1,420 units
B) 1,950 units; 1,390 units
C) 1,690 units; 1,050 units
D) 1,420 units; 2,000 units

Answer: A

Explanation: A) Normal spoilage = $3\% \times 86,000 \text{ units} = 2,580 \text{ spoiled units}$

Abnormal spoilage = $(30,000 \text{ units} + 80,000) - (86,000 \text{ units} + 20,000) - 2,580 = 1,420 \text{ units}$

Diff: 3

Terms: normal spoilage, abnormal spoilage

Objective: 3

AACSB: Analytical skills

21) What costs would be associated with normal and abnormal spoilage, respectively, using the FIFO method of process costing?

- A) \$5,890.64; \$9,133.20
- B) \$5,890.64; \$5,826.00
- C) \$6,469.64; \$7,690.36
- D) \$9,133.20; \$5,026.80

Answer: D

Explanation: D)	<u>Direct Materials</u>	<u>Conversion Costs</u>
WIP, beginning inventory		
Costs added during period	<u>\$160,000</u>	\$ <u>120,000</u>
Total cost to account for	160,000	120,000
Divided by equivalent units	<u>80,000</u> *	<u>78,150</u> **
Equivalent-unit costs	<u>\$ 2.00</u>	<u>\$ 1.54</u>

$$(56,000 + 2,580 + 1,420 + 20,000) = 80,000 \text{ units}$$

$$\text{Normal spoilage} = 3\% \times 86,000 \text{ units} = 2,580 \text{ spoiled units}$$

$$\text{Abnormal spoilage} = (30,000 \text{ units} + 80,000) - (86,000 \text{ units} + 20,000) - 2,580 = 1,420 \text{ units}$$

$$(3,150 + 56,000 + 2,580 + 1,420 + 15,000) = 78,150 \text{ units}$$

$$\text{Normal Spoilage} = 2,580 \text{ units} \times \$3.54 = \$9,133.20$$

$$\text{Abnormal Spoilage} = 1,420 \text{ units} \times \$3.54 = \$5,026.80$$

Diff: 3

Terms: first-in, first-out method, normal spoilage, abnormal spoilage

Objective: 3

AACSB: Analytical skills

22) What costs are allocated to the ending work-in-process inventory for direct materials and conversion costs, respectively, using the FIFO method of process costing?

- A) \$38,250; \$24,850
- B) \$40,000; \$23,100
- C) \$40,000; \$21,590
- D) \$49,500; \$13,600

Answer: B

Explanation: B)	<u>Direct Materials</u>	<u>Conversion Costs</u>
WIP, beginning inventory		
Costs added during period	<u>\$160,000</u>	\$ <u>120,000</u>
Total cost to account for	160,000	120,000
Divided by equivalent units	<u>80,000</u> *	<u>78,150</u> **
Equivalent-unit costs	<u>\$ 2.00</u>	<u>\$ 1.54</u>

$$(56,000 + 2,580 + 1,420 + 20,000) = 80,000 \text{ units}$$

$$\text{Normal spoilage} = 3\% \times 86,000 \text{ units} = 2,580 \text{ spoiled units}$$

$$\text{Abnormal spoilage} = (30,000 \text{ units} + 80,000) - (86,000 \text{ units} + 20,000) - 2,580 = 1,420 \text{ units}$$

$$(3,150 + 56,000 + 2,580 + 1,420 + 15,000) = 78,150 \text{ units}$$

$$\text{Normal Spoilage} = 2,580 \text{ units} \times \$3.54 = \$9,133.20$$

$$\text{Abnormal Spoilage} = 1,420 \text{ units} \times \$3.54 = \$5,026.80$$

$$\text{Direct materials: } 20,000 \text{ units} \times \$2.00 = \$40,000$$

$$\text{Conversion costs: } 15,000 \text{ units} \times \$1.54 = \$23,100$$

Diff: 3

Terms: first-in, first-out method, spoilage

Objective: 3

AACSB: Analytical skills

23) Which of the following journal entries correctly represents the transfer of completed goods for the current period using the FIFO method of process costing?

- A) Finished Goods 10,560.28
 Loss from Spoilage 10,560.28
- B) Loss from Spoilage 5,026.80
 Finished Goods 5,026.80
- C) Finished Goods 327,251.00
 Work in Process 327,251.00
- D) Finished Goods 401,700.00
 Work in Process 401,700.00

Answer: C

Explanation: C)	<u>Direct Materials</u>	<u>Conversion Costs</u>
WIP, beginning inventory		
Costs added during period	<u>\$160,000</u>	<u>\$ 120,000</u>
Total cost to account for	160,000	120,000
Divided by equivalent units	<u>80,000</u> *	<u>78,150</u> **
Equivalent-unit costs	<u>\$ 2.00</u>	<u>\$ 1.54</u>

$$(56,000 + 2,580 + 1,420 + 20,000) = 80,000 \text{ units}$$

$$\text{Normal spoilage} = 3\% \times 86,000 \text{ units} = 2,580 \text{ spoiled units}$$

$$\text{Abnormal spoilage} = (30,000 \text{ units} + 80,000) - (86,000 \text{ units} + 20,000) - 2,580 = 1,420 \text{ units}$$

$$(3,150 + 56,000 + 2,580 + 1,420 + 15,000) = 78,150 \text{ units}$$

$$\text{Normal Spoilage} = 2,580 \text{ units} \times \$3.54 = \$9,133.20$$

$$\text{Abnormal Spoilage} = 1,420 \text{ units} \times \$3.54 = \$5,026.80$$

$$\text{Direct materials: } 20,000 \text{ units} \times \$2.00 = \$40,000$$

$$\text{Conversion costs: } 15,000 \text{ units} \times \$1.54 = \$23,100$$

Abnormal spoilage	\$ 5,026.80
Beginning WIP <input type="checkbox"/> completed	110,000.00
Costs added	4,851.00
Started and completed	198,240.00
Normal spoilage	<u>9,133.20</u>
Total cost transferred out	<u>\$327,251.00</u>

Diff: 3

Terms: first-in, first-out method, spoilage

Objective: 3

AACSB: Reflective thinking

Answer the following questions using the information below:

Samantha's Office Supplies manufactures desk organizers in its Processing Department. Direct materials are included at the inception of the production cycle and must be bundled in single kits for each unit. Conversion costs are incurred evenly throughout the production cycle. Inspection takes place as units are placed into production. After inspection, some units are spoiled due to nondetectable material defects. Spoiled units generally constitute 4% of the good units. Data provided for February 2012 are as follows:

WIP, beginning inventory 2/1/2012	50,000 units
Direct materials (100% complete)	
Conversion costs (50% complete)	

Started during February	164,000 units
Completed and transferred out	162,000 units

WIP, ending inventory 2/29/2012	30,000 units
Direct materials (100% complete)	
Conversion costs (25% complete)	

Costs:

WIP, beginning inventory:	
Direct materials	\$ 300,000
Conversion costs	88,000
Direct materials added	419,832
Conversion costs added	219,786

24) What are the normal and abnormal spoilage units, respectively, for February when using FIFO?

- A) 2,800 units; 2,960 units
- B) 6,560 units; 3,280 units
- C) 6,480 units; 15,520 units
- D) 6,480 units; 22,000 units

Answer: C

Explanation: C) Normal spoilage = $4\% \times 162,000 \text{ units} = 6,480 \text{ spoiled units}$

Abnormal spoilage = $(50,000 + 164,000 - 162,000 - 30,000 - 6,480) = 15,520 \text{ units}$

Diff: 3

Terms: normal spoilage, abnormal spoilage

Objective: 3

AACSB: Analytical skills

25) What costs would be associated with normal and abnormal spoilage, respectively, using the FIFO method of process costing?

- A) \$25,142; \$60,216
- B) \$60,216; \$25,142
- C) \$2,514; \$6,020
- D) \$16,000; \$8,000

Answer: A

Explanation: A)	<u>Direct Materials</u>	<u>Conversion Costs</u>
WIP, beginning inventory		
Costs added during period	<u>\$419,832</u>	\$ <u>219,876</u>
Total cost to account for	419,832	219,876
Divided by equivalent units	<u>164,000</u> *	<u>166,500</u> **
Equivalent-unit costs	<u>\$ 2.56</u>	<u>\$ 1.32</u>

Total Cost per equivalent unit = \$2.56 + \$1.32 = \$3.88

Normal spoilage = 4% × 162,000 units = 6,480 spoiled units

Abnormal spoilage = (50,000 units + 164,000) - (162,000 units + 30,000) - 6,480 = 15,520 units

* (112,000 + 6,480 + 15,520 + 30,000) = 164,000 units

** (.5 × 50,000 + 112,000 + 6,480 + 15,520 + .25 × 30,000) = 166,500 units

Normal Spoilage = 6,480 units × \$3.88 = \$25,142

Abnormal Spoilage = 7,760 units × \$3.88 = \$60,216

Diff: 3

Terms: first-in, first-out method, normal spoilage, abnormal spoilage

Objective: 3

AACSB: Analytical skills

26) What costs are allocated to the ending work-in-process inventory for direct materials and conversion costs, respectively, using the FIFO method of process costing?

- A) \$76,500; \$9,700
- B) \$80,000; \$46,200
- C) \$76,800; \$9,900
- D) \$99,000; \$76,800

Answer: C

Explanation: C)	<u>Direct Materials</u>	<u>Conversion Costs</u>
WIP, beginning inventory		
Costs added during period	<u>\$419,832</u>	\$ <u>219,876</u>
Total cost to account for	419,832	219,876
Divided by equivalent units	<u>164,000</u> *	<u>166,500</u> **
Equivalent-unit costs	<u>\$ 2.56</u>	<u>\$ 1.32</u>

Total Cost per equivalent unit = \$2.56 + \$1.32 = \$3.88

Direct materials: 30,000 units × \$2.56 = \$76,800

Conversion costs: 30,000 units × .25 × \$1.32 = \$9,900

Diff: 3

Terms: first-in, first-out method, spoilage

Objective: 3

AACSB: Analytical skills

27) What are the direct material and conversion costs of all the units that were initially in the beginning work-in-process inventory and were subsequently shipped? Take into account the costs related to the completion of the conversion of the units during the month. Use the FIFO method of process costing.?

- A) \$76,500; \$49,700
- B) \$0; \$33,000
- C) \$80,000; \$43,180
- D) \$99,000; \$27,200

Answer: B

Explanation: B)	<u>Direct Materials</u>	<u>Conversion Costs</u>
WIP, beginning inventory		
Costs added during period	\$ <u>419,832</u>	\$ <u>219,876</u>
Total cost to account for	419,832	219,876
Divided by equivalent units	<u>164,000</u> *	<u>166,500</u> **
Equivalent-unit costs	<u>\$ 2.56</u>	<u>\$ 1.32</u>

Total Cost per equivalent unit = \$2.56 + \$1.32 = \$3.88

Normal spoilage = 4% × 162,000 units = 6,480 spoiled units

Abnormal spoilage = (50,000 units + 164,000) - (162,000 units + 30,000) - 6,480 = 15,520 units

* (112,000 + 6,480 + 15,520 + 30,000) = 164,000 units

** (.5 × 50,000 + 112,000 + 6,480 + 15,520 + .25 × 30,000) = 166,500 units

Normal Spoilage = 6,480 units × \$3.88 = \$25,142

Abnormal Spoilage = 15,520 units × \$3.88 = \$60,216

Beginning WIP:

Direct Material cost = \$0

Conversion Cost = 50,000 units × 50% × \$1.32 = \$33,000

Diff: 3

Terms: first-in, first-out method, spoilage

Objective: 3

AACSB: Analytical skills

28) What are the total costs of all the units that were initially in the beginning work-in-process inventory and were subsequently shipped? Take into account the costs related to the completion of the conversion of the units during the month. Use the FIFO method of process costing.

- A) \$388,000
- B) \$33,000
- C) \$421,000
- D) \$ 194,000

Answer: C

Explanation: C)	<u>Direct Materials</u>	<u>Conversion Costs</u>
WIP, beginning inventory		
Costs added during period	\$ <u>419,832</u>	\$ <u>219,876</u>
Total cost to account for	419,832	219,876
Divided by equivalent units	<u>164,000</u> *	<u>166,500</u> **
Equivalent-unit costs	<u>\$ 2.56</u>	<u>\$ 1.32</u>

Total Cost per equivalent unit = \$2.56 + \$1.32 = \$3.88

Normal spoilage = 4% × 162,000 units = 6,480 spoiled units

Abnormal spoilage = (50,000 units + 164,000) - (162,000 units + 30,000) - 6,480 = 15,520 units

* (112,000 + 6,480 + 15,520 + 30,000) = 164,000 units

** (.5 × 50,000 + 112,000 + 6,480 + 15,520 + .25 × 30,000) = 166,500 units

Costs related to Beginning WIP:

Costs Carried Forward from Previous period = \$300,000 + \$88,000 = \$388,000

Additional Conversion Cost = 50,000 units × 50% \$1.32 = \$33,000

Total = \$421,000

Diff: 3

Terms: first-in, first-out method, spoilage

Objective: 3

AACSB: Analytical skills

29) What are the total costs of all the units that were started during February and subsequently shipped before the end of the period?

- A) \$628,560
- B) \$434,560
- C) \$636,320
- D) \$307,000

Answer: B

Explanation: B)	<u>Direct Materials</u>	<u>Conversion Costs</u>
WIP, beginning inventory		
Costs added during period	<u>\$419,832</u>	\$ <u>219,876</u>
Total cost to account for	419,832	219,876
Divided by equivalent units	<u>164,000</u> *	<u>166,500</u> **
Equivalent-unit costs	<u>\$ 2.56</u>	<u>\$ 1.32</u>

Total Cost per equivalent unit = \$2.56 + \$1.32 = \$3.88

Normal spoilage = 4% × 162,000 units = 6,480 spoiled units

Abnormal spoilage = (50,000 units + 164,000) - (162,000 units + 30,000) - 6,480 = 15,520 units

* (112,000 + 6,480 + 15,520 + 30,000) = 164,000 units

** (.5 × 50,000 + 112,000 + 6,480 + 15,520 + .25 × 30,000) = 166,500 units

Costs related to units that were started and completed in the period:

Started and Completed = Shipped Units less beginning Inventory
 = 162,000 - 50,000 = 112,000 units

Cost = 112,000 units × \$3.88 = \$434,560

Diff: 3

Terms: first-in, first-out method, spoilage

Objective: 3

AACSB: Analytical skills

30) Which of the following journal entries correctly represents the transfer of completed goods begun during February using the FIFO method of process costing?

- A) Finished Goods 940,913
 Work in Process 940,913
- B) Loss from Spoilage 25,142
 Finished Goods 25,142
- C) Finished Goods 434,560
 Work in Process 434,560
- D) Finished Goods 628,560
 Work in Process 628,560

Answer: C

Explanation: C)	<u>Direct Materials</u>	<u>Conversion Costs</u>
WIP, beginning inventory		
Costs added during period	<u>\$419,832</u>	<u>\$ 219,876</u>
Total cost to account for	419,832	219,876
Divided by equivalent units	<u>164,000</u> *	<u>166,500</u> **
Equivalent-unit costs	<u>\$ 2.56</u>	<u>\$ 1.32</u>

Total Cost per equivalent unit = \$2.56 + \$1.32 = \$3.88

Normal spoilage = 4% × 162,000 units = 6,480 spoiled units

Abnormal spoilage = (50,000 units + 164,000) - (162,000 units + 30,000) - 6,480 = 15,520 units

* (112,000 + 6,480 + 15,520 + 30,000) = 164,000 units

** (.5 × 50,000 + 112,000 + 6,480 + 15,520 + .25 × 30,000) = 166,500 units

Costs related to Beginning WIP:

Costs Carried Forward from Previous period = \$300,000 + \$88,000 = \$388,000

Additional Conversion Cost = 50,000 units × 50% \$1.32 = \$33,000

Total = \$421,000

Costs related to units that were started and completed in the period:

Started and Completed = Shipped Units less beginning Inventory

= 162,000 - 50,000 = 112,000 units

Cost = 112,000 units × \$3.88 = \$434,560

Costs to transfer out = \$25,142 + \$60,216 + \$421,000 + \$434,555
 = \$940,913

Diff: 3

Terms: first-in, first-out method, spoilage

Objective: 3

AACSB: Reflective thinking

- 31) The first step in the five-step procedure for process costing with spoilage is to compute the output in terms of equivalent units.
Answer: FALSE
Explanation: The first step in the five-step procedure for process costing with spoilage is to summarize the flow of physical units.
Diff: 2
Terms: process costing, spoilage
Objective: 3
AACSB: Analytical skills
- 32) The last step in the five-step procedure for process costing with spoilage is to summarize total costs to account for.
Answer: FALSE
Explanation: The last step in the five-step procedure for process costing with spoilage is to assign total costs to units completed, to spoiled units, and to units in ending work in process.
Diff: 2
Terms: process costing, spoilage
Objective: 3
AACSB: Analytical skills
- 33) Counting spoiled units as part of output units in a process-costing system usually results in a higher cost per unit.
Answer: FALSE
Explanation: Counting spoiled units usually results in a lower cost per unit.
Diff: 3
Terms: spoilage
Objective: 3
AACSB: Analytical skills
- 34) Costs in beginning inventory are pooled with costs in the current period when determining the costs of good units under the weighted-average method of process costing.
Answer: TRUE
Diff: 2
Terms: weighted-average method
Objective: 3
AACSB: Analytical skills
- 35) Under the weighted-average method, the costs of normal spoilage are added to the costs of their related good units. Hence, the cost per good unit completed and transferred out equals the total costs transferred out divided by the number of good units produced.
Answer: TRUE
Diff: 3
Terms: weighted-average method, normal spoilage
Objective: 3
AACSB: Analytical skills

36) Spoilage is typically assumed to occur at the stage of completion where inspection takes place.

Answer: TRUE

Diff: 2

Terms: inspection point

Objective: 3

AACSB: Ethical reasoning

37) Spoilage and rework costs are thoroughly captured in the accounting system.

Answer: FALSE

Explanation: The actual costs of spoilage and rework are often greater than the costs recorded in the accounting system because the opportunity costs of disruption of the production line, storage, and lost contribution margin are not recorded in accounting systems.

Diff: 2

Terms: spoilage, rework

Objective: 3

AACSB: Analytical skills

38) Under the FIFO method, all spoilage costs are assumed to be related to the units completed during this period using the unit costs of the current period.

Answer: TRUE

Diff: 3

Terms: first-in, first-out method, spoilage

Objective: 3

AACSB: Analytical skills

39) When spoiled goods have a disposal value, the net cost of spoilage is computed by adding the disposal value to the costs of the spoiled goods accumulated to the inspection point.

Answer: FALSE

Explanation: The net cost of spoilage is computed by subtracting the disposal value from the costs of the spoiled goods accumulated to the inspection point.

Diff: 2

Terms: spoilage

Objective: 3

AACSB: Analytical skills

40) To simplify calculations under FIFO, spoiled units are accounted for as if they were started in the current period.

Answer: TRUE

Diff: 2

Terms: spoilage

Objective: 3

AACSB: Analytical skills

41) Normal spoilage costs are usually deducted from the costs of good units.

Answer: FALSE

Explanation: Normal spoilage is usually added to the cost of the good units.

Diff: 2

Terms: normal spoilage

Objective: 3

AACSB: Analytical skills

42) Identify the appropriate order of the following steps in the procedure for process costing with spoilage.

- a. summarize total costs to account for
- b. assign total costs to units completed, to spoiled units, and to units in ending inventory
- c. summarize the flow of physical units
- d. compute output in terms of equivalent units
- e. compute cost per equivalent unit

Step 1 _____

Step 2 _____

Step 3 _____

Step 4 _____

Step 5 _____

Answer:

Step 1 c. summarize the flow of physical units

Step 2 d. compute output in terms of equivalent units

Step 3 a. summarize total costs to account for

Step 4 e. compute cost per equivalent unit

Step 5 b. assign total costs to units completed, to spoiled units, and to units in ending inventory

Diff: 2

Terms: process costing, spoilage

Objective: 3

AACSB: Reflective thinking

43) Endicott Shoes manufactures shoes. All direct materials are included at the inception of the production process. For March, there were 1,400 units in beginning inventory with a direct material cost of \$700. Direct materials totaled \$15,000 for the month. Work-in-process records revealed that 35,000 units were started in March and that 30,000 were finished. Normal spoilage of 2% of units finished was incurred. Ending work-in-process units are complete in respect to direct materials costs. Spoilage is not detected until the process is complete. Endicott uses the weighted-average method.

Required:

- a. What are the direct materials costs assigned to completed good units when spoilage units are recognized or when they are ignored?
- b. What are the direct material amounts allocated to the work-in-process ending inventory when spoilage units are recognized or ignored?

Answer:

a. Equivalent units (spoilage recognized) = 1,400 + 35,000 = 36,400

Equivalent units (spoilage ignored) = 1,400 + 35,000 - (30,000 × 0.02) = 35,800

<u>Recognized</u>	<u>Ignored</u>	
Cost to account for:		
Beginning work in process	\$ 700	\$ 700
Current period	<u>15,000</u>	<u>15,000</u>
 Total costs to account for	 \$15,700	 \$15,700
Divided by equivalent units	<u>36,400</u>	<u>35,800</u>
Cost per equivalent unit	<u>\$ 0.431</u>	<u>\$ 0.439</u>
 Assigned to good units:		
(29,400 × \$0.431)	\$12,671	
(29,400 × \$0.439)		\$12,907
 b. Ending work in process:		
(6,400 × \$0.431)	\$ 2,758	
(6,400 × \$0.439)		\$ 2,810

Diff: 3

Terms: spoilage

Objective: 3

AACSB: Analytical skills

44) Viking Sports is a manufacturer of sportswear. It produces all of its products in one department. The information for the current month is as follows:

Beginning work in process	20,000 units
Units started	40,000 units
Units completed	50,000 units
Ending work in process	8,000 units
Spoilage	2,000 units

Beginning work-in-process direct materials	\$12,000
Beginning work-in-process conversion	\$ 4,000
Direct materials added during month	\$60,000
Direct manufacturing labor during month	\$20,000

Beginning work in process was half complete as to conversion. Direct materials are added at the beginning of the process. Factory overhead is applied at a rate equal to 50% of direct manufacturing labor. Ending work in process was 60% complete. All spoilage is normal and is detected at end of the process.

Required:

Prepare a production cost worksheet if spoilage is recognized and the weighted-average method is used.

Answer: PRODUCTION COST WORKSHEET

<u>Flow of Production</u>	<u>Physical units</u>	<u>Direct materials</u>	<u>Conversion</u>
Work in process, beginning	20,000		
Started during period	<u>40,000</u>		
To account for	<u>60,000</u>		

Good units completed	50,000	50,000	50,000
Normal spoilage	2,000	2,000	2,000
Work in process, ending	<u>8,000</u>	<u>8,000</u>	<u>4,800</u>
Accounted for	<u>60,000</u>	<u>60,000</u>	<u>56,800</u>

<u>Costs</u>	<u>Totals</u>	<u>Direct Materials</u>	<u>Conversion</u>
Work in process, beginning	\$ 16,000	\$12,000	\$ 4,000
Costs added during period	<u>90,000</u>	<u>60,000</u>	<u>30,000</u>
Total costs to account for	106,000	72,000	34,000
Divided by equivalent units		<u>60,000</u>	<u>56,800</u>
Equivalent unit costs	<u>\$ 1.80</u>	<u>\$ 1.20</u>	<u>\$ 0.60</u>

Assignment of costs

Costs transferred out (50,000 × \$1.80)	\$ 90,000
Normal spoilage (2,000 × \$1.80)	3,600
Work in process, ending	
Direct materials (8,000 × \$1.20)	9,600
Conversion (8,000 × \$0.60 × 0.60)	<u>2,880</u>

Costs accounted for	<u>\$106,080</u>
(Differences due to rounding)	

Diff: 2

Terms: spoilage, weighted-average method

Objective: 3

AACSB: Analytical skills

45) Silver Spoon Incorporated is a manufacturer of kitchen utensils. It produces all of its products in one department. The information for the current month is as follows:

Beginning work in process	37,500 units
Units started	55,000 units
Units completed	75,000 units
Ending work in process	14,500 units
Spoilage	3,000 units

Beginning work-in-process direct materials	\$25,000
Beginning work-in-process conversion	\$ 10,000
Direct materials added during month	\$113,750
Direct manufacturing labor during month	\$40,020

Beginning work in process was 25% complete as to conversion. Direct materials are added at the beginning of the process. Factory overhead is applied at a rate equal to 37.5% of direct manufacturing labor. Ending work in process was 60% complete. All spoilage is normal and is detected at the end of the process.

Required:

Prepare a production cost worksheet if spoilage is recognized and the weighted-average method is used.

Answer: PRODUCTION COST WORKSHEET

<u>Flow of Production</u>	<u>Physical units</u>	<u>Direct materials</u>	<u>Conversion</u>
Work in process, beginning	37,500		
Started during period	55,000		
To account for	<u>92,500</u>		

Good units completed	75,000	75,000	75,000
Normal spoilage	3,000	3,000	3,000
Work in process, ending	14,500	14,500	8,700
Accounted for	<u>92,500</u>	<u>92,500</u>	<u>86,700</u>

<u>Costs</u>	<u>Totals</u>	<u>Direct Materials</u>	<u>Conversion</u>
Work in process, beginning	\$ 35,000	\$25,000	\$ 10,000
Costs added during period	<u>168,778</u>	<u>113,750</u>	<u>55,028</u>
Total costs to account for	203,778	138,750	65,028
Divided by equivalent units		<u>92,500</u>	<u>86,700</u>
Equivalent unit costs	<u>\$ 2.25</u>	<u>\$ 1.50</u>	<u>\$ 0.75</u>

Assignment of costs

Costs transferred out (75,000 × \$2.25)	\$ 168,750
Normal spoilage (3,000 × \$2.25)	6,750
Work in process, ending	
Direct materials (14,500 × \$1.50)	21,750
Conversion (14,500 × \$0.75 × 0.60)	<u>6,525</u>
Costs accounted for	<u>\$203,775</u>

Diff: 2

Terms: spoilage, weighted-average method

Objective: 3

AACSB: Analytical skills

46) New Image Sports uses a process-costing system. For March, the company had the following activities:

Beginning work-in-process inventory (1/3 complete)	6,000 units
Units placed in production	24,000 units
Good units completed	18,000 units
Ending work-in-process inventory	10,000 units
Cost of beginning work in process	\$ 5,000
Direct material costs, current	\$18,000
Conversion costs, current	\$13,800

Direct materials are placed into production at the beginning of the process. All spoilage is normal and is detected at the end of the process. Ending WIP is 50% completed as to conversion.

Required:

Prepare a production cost worksheet using the FIFO method.

Answer: Normal spoilage = 6,000 + 24,000 - 18,000 - 10,000 = 2,000

Started and completed = 18,000 - 6,000 = 12,000

PRODUCTION COST WORKSHEET

<u>Flow Of Production</u>	<u>Physical Units</u>	<u>Direct Materials</u>	<u>Conversion</u>
Work in process, beginning	6,000		
Started during period	<u>24,000</u>		
To account for	<u>30,000</u>		
Good units completed:			
Beginning work in process	6,000		4,000
Started and completed	12,000	12,000	12,000
Normal spoilage	2,000	2,000	2,000
Work in process, ending	<u>10,000</u>	<u>10,000</u>	<u>5,000</u>
Accounted for	<u>30,000</u>	<u>24,000</u>	<u>23,000</u>

<u>Costs</u>	<u>Totals</u>	<u>Direct Materials</u>	<u>Conversion</u>
Work in process, beginning	\$ 5,000		
Costs added during period	<u>31,800</u>	<u>\$18,000</u>	<u>\$13,800</u>
Total costs to account for	\$36,800	\$18,000	\$13,800
Divided by equivalent units		<u>24,000</u>	<u>23,000</u>
Equivalent-unit costs	<u>\$ 1.35</u>	<u>\$ 0.75</u>	<u>\$ 0.60</u>

Assignment of cost:

Work in process, beginning	\$ 5,000
Completion of beginning (4,000 × \$0.60)	<u>2,400</u>
Total beginning inventory	7,400
Started and completed (12,000 × \$1.35)	16,200
Normal spoilage (2,000 × \$1.35)	<u>2,700</u>
Total costs transferred out	26,300
Work in process, ending	
Direct materials (10,000 × \$0.75)	\$7,500
Conversion (10,000 × \$0.60 × 0.5)	<u>3,000</u>
Costs accounted for	<u>\$36,800</u>

Diff: 3

Terms: normal spoilage, spoilage, first-in, first-out method

Objective: 3

AACSB: Analytical skills

47) Weather Instruments assembles products from component parts. It has two departments that process all products. During January, the beginning work in process in the assembly department was half complete as to conversion and complete as to direct materials. The beginning inventory included \$12,000 for materials and \$4,000 for conversion costs. Overhead is applied at the rate of 50% of direct manufacturing labor costs. Ending work-in-process inventory in the assembly department was 40% complete. All spoilage is considered normal and is detected at the end of the process.

Beginning work in process in the finishing department was 75% complete as to conversion and ending work in process was 25% converted. Direct materials are added at the end of the process. Beginning inventories included \$16,000 for transferred-in costs and \$10,000 for direct manufacturing labor costs. Overhead in this department is equal to direct manufacturing labor costs. Additional information about the two departments follows:

	<u>Assembly</u>	<u>Finishing</u>
Beginning work-in-process units	20,000	24,000
Units started this period	40,000	?
Units transferred this period	50,000	54,000
Ending work-in-process units	8,000	20,000
Material costs added	\$44,000	\$28,000
Direct manufacturing labor	\$16,000	\$24,000

Required:

Prepare a production cost worksheet using weighted-average for the assembly department and FIFO for the finishing department.

Answer: Normal spoilage in assembly = 20,000 + 40,000 - 50,000 - 8,000 = 2,000

PRODUCTION COST WORKSHEET

Assembly Department

Weighted-Average Method

<u>Flow of production</u>	<u>Physical Units</u>	<u>Direct Materials</u>	<u>Conversion</u>
Work in process, beginning	20,000		
Started during period	<u>40,000</u>		
To account for	<u>60,000</u>		
Good units completed and			
Transferred out	50,000	50,000	50,000
Normal spoilage	2,000	2,000	2,000
Work in process, ending	<u>8,000</u>	<u>8,000</u>	<u>3,200</u>
Accounted for	<u>60,000</u>	<u>60,000</u>	<u>55,200</u>

<u>Costs</u>	<u>Totals</u>	<u>Direct materials</u>	<u>Conversion</u>
Work in process, beginning	\$16,000	\$12,000	\$ 4,000
Costs added during period	<u>68,000</u>	<u>44,000</u>	<u>24,000</u>
Total costs to account for	84,000	56,000	28,000
Divided by equivalent units		<u>60,000</u>	<u>55,200</u>
Equivalent-unit costs	<u>\$ 1.44</u>	<u>\$ 0.93</u>	<u>\$ 0.51</u>

<u>Assignment of costs</u>		
Transferred out (50,000 × \$1.44)		\$72,000
Normal spoilage (2,000 × \$1.44)		<u>2,880</u>
Total costs transferred out		74,880
Work in process, ending		
Direct materials (8,000 × \$0.93)	\$7,440	
Conversion (8,000 × 0.40 × \$0.51)	<u>1,632</u>	<u>9,072</u>
Costs accounted for		<u>\$83,952</u>
(Differences due to rounding)		

PRODUCTION COST WORKSHEET

Finishing Department

FIFO Method

<i>Flow of Production</i>	Physical <u>Units</u>	Direct <u>Materials</u>	<u>Conversion</u>	Transferred <u>In</u>
Work in process, beginning	24,000			
Started during period	<u>50,000</u>			
To account for	<u>74,000</u>			
Good units completed:				
Beginning work in process	24,000	24,000	6,000	
Started and completed	30,000	30,000	30,000	30,000
Work in process, ending	<u>20,000</u>	<u>0</u>	<u>5,000</u>	<u>20,000</u>
Accounted for	<u>74,000</u>	<u>54,000</u>	<u>41,000</u>	<u>50,000</u>

<i>Costs</i>	Physical <u>Units</u>	Direct <u>Materials</u>	<u>Conversion</u>	Transferred <u>In</u>
Work in process, beginning	\$ 36,000			
Costs added during period	<u>150,880</u>	<u>\$28,000</u>	<u>\$48,000</u>	<u>\$74,880</u>
Total costs to account for	186,880	28,000	48,000	74,880
Divided by equivalent units		<u>54,000</u>	<u>41,000</u>	<u>50,000</u>
Equivalent-unit costs	<u>\$ 3.19</u>	<u>\$ 0.52</u>	<u>\$ 1.17</u>	<u>\$ 1.50</u>

Assignment of costs:

Work in process, beginning			\$ 36,000	
Completion of beginning:				
Direct materials (24,000 × \$0.52)	\$12,480			
Conversion costs (24,000 × 0.25 × \$1.17)			<u>7,020</u>	<u>19,500</u>
Total beginning inventory			55,500	
Started and completed (30,000 × \$3.19)				<u>95,700</u>
Total costs transferred out			151,200	
Work in process, ending				
Transferred in (20,000 × \$1.50)	\$30,000			
Conversion costs (20,000 × \$1.17 × 0.25)			<u>5,850</u>	<u>35,850</u>
Costs accounted for			<u>\$187,050</u>	
(Differences due to rounding)				

Diff: 3

Terms: spoilage, normal spoilage, first-in, first-out method

Objective: 3

AACSB: Analytical skills

48) Harriet has been reviewing the accounting system for her company and she is very concerned about the accounting for spoilage. It appears that spoilage is accounted for only at the end of the processing cycle. While this concept is acceptable in general, Harriet believes that a better method can be found to properly account for the spoilage when it occurs. She believes that there must be something better than the weighted-average method of accounting for spoilage. She would like the company to use a method that provides closer tracking of the spoilage with the accounting for the spoilage.

Required:

Discuss the problems Harriet is having with the accounting system.

Answer: The main problem Harriet has is that she does not understand the accounting system. The use of weighted-average or FIFO is not for addressing the problems of spoilage tracking. While the methods differ slightly in the tracking of costs, FIFO keeps beginning inventories separate, and the point of accounting for spoilage is not affected by the accounting method. If the company can account for spoilage at different stages of completion, these stages can be converted into percentage of completion points, and the spoilage can be accounted for as the process completes each stage.

Diff: 3

Terms: spoilage, first-in, first-out method

Objective: 3

AACSB: Analytical skills

49) Spoilage can be a significant cost for many organizations. Discuss when spoilage might happen and how the costs of normal spoilage get allocated.

Answer: Spoilage may occur at various stages of the production process. In general, the cost of spoiled units is equal to the all costs incurred in producing the spoiled units up to the point of inspection.

The costs of normal spoilage are allocated to units in ending work-in-process inventory. The most common approach is to presume that normal spoilage occurs at the inspection point in the production cycle and to allocate its cost over all units that have passed that point during the accounting period. One cost-benefit decision to be made is when to do inspections. Naturally, the earlier the spoilage is caught, the less costly it will be as the conversion costs will be lower in the early stages of production. The costs of performing inspections can be compared to the expected savings from reducing the spoilage costs as part of the determination of when in the process the inspections should happen.

Diff: 3

Terms: spoilage

Objective: 3

AACSB: Analytical skills

Objective 18.4

1) The inspection point is the:

A) stage of the production cycle where products are checked to determine whether they are acceptable or unacceptable units

B) point at which costs are allocated between normal and abnormal spoilage

C) point at which the calculation of equivalent units is made

D) None of these answers is correct.

Answer: A

Diff: 2

Terms: inspection point

Objective: 4

AACSB: Ethical reasoning

- 2) When spoiled goods have a disposal value, the net cost of the spoilage is computed by:
- A) deducting disposal value from the costs of the spoiled goods accumulated to the inspection point
 - B) adding the costs to complete a salable product to the costs accumulated to the inspection point
 - C) calculating the costs incurred to the inspection point
 - D) None of these answers is correct.

Answer: A

Diff: 2

Terms: spoilage

Objective: 4

AACSB: Analytical skills

- 3) The costs of normal spoilage are allocated to the units in ending work-in-process inventory, in addition to completed units if the units:

- A) in ending inventory have not passed the inspection point
- B) in ending work-in-process inventory have passed the inspection point
- C) in ending work in process inventory are more than 50% complete
- D) in ending work-in-process inventory are less than 50% complete

Answer: B

Diff: 3

Terms: inspection point, normal spoilage

Objective: 4

AACSB: Analytical skills

- 4) Normal spoilage is computed on the basis of the number of:

- A) good units that pass inspection during the current period
- B) units that pass the inspection point during the current period
- C) units that are 100% complete as to materials
- D) None of these answers is correct.

Answer: A

Diff: 2

Terms: normal spoilage, inspection point

Objective: 4

AACSB: Reflective thinking

- 5) Which of the following INCORRECTLY reflects what units passed inspection this period? Assume beginning work in process was completed and ending work in process was started during the period.

Inspection Point at Completion Level

	<u>10%</u>	<u>50%</u>	<u>100%</u>
A) Beginning work in process (30% complete)	No	Yes	Yes
B) Started and completed	Yes	Yes	Yes
C) Ending work in process (40% complete)	Yes	No	No
D) Beginning work in process (5% complete)	Yes	No	No

Answer: D

Diff: 3

Terms: inspection point

Objective: 4

AACSB: Analytical skills

6) In general, it is presumed that normal spoilage occurs halfway between the beginning of the production process and the inspection point in the production cycle. This is because there is no easy way to determine where the spoilage has happened until the inspection has occurred.

Answer: FALSE

Explanation: The common approach is to presume that normal spoilage occurs at the inspection point in the production cycle.

Diff: 2

Terms: spoilage, standard costing

Objective: 4

AACSB: Analytical skills

7) All accounting systems must assume that the inspection point occurs when a process is 100% complete.

Answer: FALSE

Explanation: All accounting systems do not have to assume that the inspection point occurs when a process is 100% complete.

Diff: 2

Terms: inspection point

Objective: 4

AACSB: Communication

Objective 18.5

1) The Harleysville Manufacturing Shop produces motorcycle parts. Typically, 10 pieces out of a job lot of 1,000 parts are spoiled. Costs are assigned at the inspection point, \$50.00 per unit. Spoiled pieces may be disposed at \$10.00 per unit. The spoiled goods must be inventoried appropriately when the normal spoilage is detected. The current job requires the production of 2,500 good parts.

Which of the following journal entries properly reflects the recording of spoiled goods?

- | | | |
|-----------------------------------|-------|-------|
| A) Materials Control | 200 | |
| Manufacturing Overhead Control | 800 | |
| Work-in-Process Control | | 1,000 |
| B) Materials Control | 250 | |
| Manufacturing Overhead Control | 1,000 | |
| Work-in-Process Control | | 1,250 |
| C) Work-in-Process Control | 1,250 | |
| Materials Control | | 250 |
| Manufacturing Overhead Control | | 1,000 |
| D) Manufacturing Overhead Control | 1,000 | |
| Materials Control | | 200 |
| Work-in-Process Control | | 800 |

Answer: B

Explanation: B) Materials Control: 25 pieces \times \$10.00 = \$250

Manufacturing Overhead Control: 25 pieces \times (\$50.00 - \$10.00) = \$1,000

WIP Control: 25 pieces \times \$50.00 = \$1,250

Diff: 2

Terms: spoilage, inspection point

Objective: 5

AACSB: Reflective thinking

2) The Harleysville Manufacturing Shop produces motorcycle parts. Typically, 10 pieces out of a job lot of 1,000 parts are spoiled. Costs are assigned at the inspection point, \$50.00 per unit. Spoiled pieces may be disposed at \$10.00 per unit. The spoiled goods must be inventoried appropriately when the normal spoilage is detected. Job 101 requires the production of 2,500 good parts.

Which of the following journal entries would be correct if the spoilage occurred due to specifications required for Job 101?

- | | | |
|----------------------------|-----|-----|
| A) Work-in-Process Control | 100 | |
| Materials Control | | 100 |
| B) Materials Control | 100 | |
| Work-in-Process Control | | 100 |
| C) Materials Control | 250 | |
| Work-in-Process Control | | 250 |
| D) Work-in-Process Control | 250 | |
| Materials Control | | 250 |

Answer: C

Explanation: C) 25 pieces \times \$10.00 = \$250

Diff: 2

Terms: normal spoilage, inspection point

Objective: 5

AACSB: Reflective thinking

3) A difference between job costing and process costing is that:

- A) job-costing systems usually do not distinguish between normal spoilage attributable to all jobs and normal spoilage attributable to a specific job
- B) job-costing systems usually distinguish between normal spoilage attributable to a specific job and spoilage common to all jobs
- C) process costing normally does not distinguish between normal spoilage attributable to a specific job and spoilage common to all jobs
- D) Both B and C are correct.

Answer: D

Diff: 2

Terms: spoilage, normal spoilage

Objective: 5

AACSB: Reflective thinking

4) Costs of abnormal spoilage are NOT considered to be inventoriable costs and are written off as costs of the accounting period in which the abnormal spoilage is detected.

Answer: TRUE

Diff: 3

Terms: abnormal spoilage, job costing

Objective: 5

AACSB: Analytical skills

5) When assigning costs, job-costing systems generally distinguish normal spoilage attributable to a specific job from normal spoilage common to all jobs.

Answer: TRUE

Diff: 3

Terms: job costing, process costing, normal spoilage

Objective: 5

AACSB: Analytical skills

6) When normal spoilage occurs because of the specifications of a particular job, that job bears the cost of the spoilage minus the disposal value of the spoilage.

Answer: TRUE

Diff: 3

Terms: normal spoilage

Objective: 5

AACSB: Communication

7) Shazam Machines produces numerous types of money change machines. All machines are made in the same production department and many use exactly the same processes. Because customers have such different demands for the machine characteristics, the company uses a job-costing system. Unfortunately, some of the production managers have been upset for the last few months when their jobs were charged with the spoilage that occurred over an entire processing run of several types of machines. Some of the best managers have even threatened to quit unless the accounting system is changed.

Required:

What recommendations can you suggest to improve the accounting for spoilage?

Answer: Because the manufacturing process uses similar workstations for the products, it may be best to let the spoilage be considered a manufacturing problem rather than a job problem. With this assumption, the spoilage will be spread over the entire production process with each job being charged an appropriate amount of spoilage, thereby relieving some jobs of bearing the entire burden of spoilage just because they were being worked on when the machines or process malfunctioned.

Diff: 2

Terms: spoilage

Objective: 5

AACSB: Analytical skills

Objective 18.6

1) Which of the following entries reflects the original cost assignment before production items are reworked?

- | | | |
|-------------------------------------|-----|-----|
| A) Work-in-Process Control | XXX | |
| Materials Control | | XXX |
| Wages Payable Control | | XXX |
| Manufacturing Overhead Allocated | | XXX |
| B) Finished Goods Control | XXX | |
| Work-in-Process Control | | XXX |
| C) Manufacturing Overhead Allocated | XXX | |
| Materials Control | | XXX |
| Wages Payable Control | | XXX |
| Work-in-Process Control | | XXX |
| D) Materials Control | XXX | |
| Wages Payable Control | | XXX |
| Work-in-Process Control | | XXX |
| Manufacturing Overhead Allocated | | XXX |

Answer: A

Diff: 2

Terms: rework

Objective: 6

AACSB: Reflective thinking

2) Accounting for rework in a process-costing system:

- A) accounts for normal rework in the same way as a job-costing system
- B) requires abnormal rework to be distinguished from normal rework
- C) if the rework is normal, then rework is accounted for in the same manner as accounting for normal rework common to all jobs
- D) All of these answers are correct.

Answer: D

Diff: 2

Terms: rework

Objective: 6

AACSB: Reflective thinking

3) In accounting for scrap, which one of the following statements is FALSE?

- A) Normal scrap is accounted for separately from abnormal scrap
- B) In accounting for scrap, there is no distinction between the scrap attributable to a specific job and scrap common to all jobs
- C) Initial entries to scrap accounting records are most often made in dollar terms
- D) All of these answers are correct.

Answer: D

Diff: 3

Terms: scrap

Objective: 6

AACSB: Reflective thinking

4) When rework is normal and NOT attributable to a specific job, the costs of rework are charged to manufacturing overhead and are spread, through overhead allocation, over all jobs.

Answer: TRUE

Diff: 2

Terms: rework

Objective: 6

AACSB: Analytical skills

5) Valentine Florists operate a flower shop. Because most of their orders are via telephone or fax, numerous orders have to be reworked. The average cost of the reworked orders is \$6: \$3.75 for labor, \$1.50 for more flowers, and \$0.75 for overhead. This ratio of costs holds for the average original order. On a recent day, the shop reworked 48 orders out of 249. The original cost of the 48 orders totaled \$720. The average cost of all orders is \$16.16, including rework, with an average selling price of \$30

Required:

Prepare the necessary journal entry to record the rework for the day if the shop charges such activities to Arrangement Department Overhead Control. Prepare a journal entry to transfer the finished goods to Finished Goods Inventory.

Answer:

Arrangement Department Overhead Control	288	
Materials Control (48 × \$1.50)		72
Wages Payable Control (48 × \$3.75)		180
Shop Overhead Control (48 × \$0.75)		36
Finished Goods	720	
Work-in-Process Control		720

Diff: 2

Terms: rework

Objective: 6

AACSB: Analytical skills

6) Robotoys Incorporated manufactures and distributes small robotic toys. Because most of its orders are via telephone or fax, numerous orders have to be reworked. The average cost of the reworked orders is \$11.30: \$4.15 for labor, \$5.00 for more materials, and \$2.15 for overhead. This ratio of costs holds for the average original order. On a recent day, the shop reworked 83 orders out of 700. The original cost of the 83 orders totaled \$1,909. The average cost of all orders is \$24.34, including rework, with an average selling price of \$34.50.

Required:

Prepare the necessary journal entry to record the rework for the day if the shop charges such activities to Robo Department Overhead Control. Prepare journal entries to record all relevant rework charges as well as to transfer the reworked items finished goods to Finished Goods Inventory.

Answer:

Robo Department Overhead Control	937.90	
Materials Control (83 × \$5.00)		415.00
Wages Payable Control (83 × \$4.15)		344.45
Shop Overhead Control (83 × \$2.15)		178.45
Finished Goods	1,909	
Work-in-Process Control		1,909

Diff: 2

Terms: rework

Objective: 6

AACSB: Analytical skills

7) When a unit has to be reworked, the rework may be classified in three ways. What are those ways, and how does the accounting for each differ?

Answer: The rework may be (1) normal rework attributable to a specific job; (2) normal rework common to all jobs; or (3) abnormal rework. If the rework is attributable to a specific job, then the cost of such rework should be charged to that job. If the rework is common to all jobs, then the cost of the rework should be charged to manufacturing overhead and spread across all jobs. If the rework is abnormal rework then the cost of the rework should be charged as a loss to the period in which the rework is required.

Diff: 2

Terms: rework

Objective: 6

AACSB: Reflective thinking

Objective 18.7

1) When the amount of scrap is immaterial, the easiest accounting entry when recording scrap sold for cash is:

- A) Sales of Scrap
 Cash
- B) Cash
 Manufacturing Overhead Control
- C) Cash
 Sales of Scrap
- D) Accounts Receivable
 Sales of scrap

Answer: C

Diff: 2

Terms: scrap

Objective: 7

AACSB: Reflective thinking

2) Assume the amount of scrap is material and the scrap is sold immediately after it is produced. If the scrap attributable to a specific job is sold on account, the journal entry is:

- A) Work-in-Process Control
 Cash
- B) Work-in-Process Control
 Accounts Receivable
- C) Accounts Receivable
 Work-in-Process Control
- D) Work-in-Process Control
 Accounts Payable

Answer: C

Diff: 3

Terms: scrap

Objective: 7

AACSB: Reflective thinking

3) If scrap, common to all jobs, is returned to the storeroom and the time between the scrap being inventoried and its disposal is quite lengthy, the journal entry is:

- A) Work-in-Process Control
 Materials Control
- B) Materials Control
 Work-in-Process Control
- C) Manufacturing Overhead Control
 Materials Control
- D) Materials Control
 Manufacturing Overhead Control

Answer: D

Diff: 3

Terms: scrap

Objective: 7

AACSB: Reflective thinking

4) The accounting for scrap under process costing is similar to the accounting under:

- A) job costing when scrap is different for each job
- B) job costing when scrap is common to all jobs
- C) process costing when scrap is different for each job
- D) process costing when scrap is a common to all jobs

Answer: B

Diff: 2

Terms: scrap

Objective: 7

AACSB: Reflective thinking

5) Which of the following is NOT a major consideration when accounting for scrap?

- A) keeping detailed records of physical quantities of scrap at all stages of the production process
- B) inventory costing including when and how scrap affects operating income
- C) planning and control including physical tracking
- D) decisions as to whether to group scrap with reworked units

Answer: D

Diff: 2

Terms: scrap

Objective: 7

AACSB: Reflective thinking

6) Scrap is usually divided between normal and abnormal scrap.

Answer: FALSE

Explanation: No distinction is made between normal and abnormal scrap because no cost is assigned to scrap.

Diff: 2

Terms: scrap

Objective: 7

AACSB: Analytical skills

7) If scrap is returned to the company's storeroom and inventoried, it should NOT have any value in the accounting records.

Answer: FALSE

Explanation: The scrap will be inventoried. It might not have a value in dollars but it will have a physical quantity value.

Diff: 3

Terms: scrap

Objective: 7

AACSB: Ethical reasoning

8) When the dollar amount of scrap is immaterial, the simplest accounting is to record the physical quantity of scrap returned to the storeroom and to regard scrap sales as a separate line item in the income statement.

Answer: TRUE

Diff: 2

Terms: scrap

Objective: 7

AACSB: Analytical skills

9) Costs are assigned to scrap only if it is normal scrap.

Answer: FALSE

Explanation: Scrap is not broken down into normal and abnormal costs.

Diff: 2

Terms: scrap

Objective: 7

AACSB: Analytical skills

10) Accounting for scrap is very similar to accounting for byproducts.

Answer: TRUE

Diff: 2

Terms: scrap, byproducts

Objective: 7

AACSB: Analytical skills

11) Recognizing the value of scrap in the accounting records is always done at the time the scrap is produced.

Answer: FALSE

Explanation: There are methods in which the value of scrap is recognized at the time it is produced and there are methods in which the value of scrap is recognized at the time of its sale.

Diff: 2

Terms: scrap

Objective: 7

AACSB: Ethical reasoning

12) Busy Hands Craft Company is a small manufacturing company that specializes in arts and crafts items. It recently bought an old textile mill that it has refurbished to manufacture and dye special cloth to be sold in its craft shops. However, it discovered something new for its accounting system. The company never before had finished goods that did not meet standard, leftover materials from processing runs, or unacceptable outputs.

Required:

As the business consultant for the company, explain how it can handle the items mentioned. Include any potential problems with the accounting procedures.

Answer: First, an explanation of each item is needed.

1. Rework units are those units that are defective but can be reworked and sold as acceptable finished goods.
2. Scrap is leftover material that may have a minimal sales value. Scrap may be either sold, disposed, or reused in another job or processing run.
3. Spoilage is the production outputs that cannot be reworked. These units are discarded or sold for minimal value.

The potential problem with these areas is that they may be treated differently by the accounting system. The company should establish an acceptable and consistent method of handling each area. A consistent policy also aids the managers who are being evaluated by their department's efforts.

Diff: 2

Terms: rework, scrap, spoilage

Objective: 6, 7

AACSB: Analytical skills

13) Explain the meaning of the terms spoilage, scrap, and rework. Provide an example of each. Is it possible for a single firm to have all three from a single productive process?

Answer: Spoilage is units of production that do not meet the specifications required by customers for good units, and are discarded or sold for reduced prices. An example of spoilage would be a damaged pair of Levi's Jeans sold as a "second."

Rework is unacceptable units that are subsequently repaired and sold as acceptable finished goods. An example of rework would be a pair of Jeans that might require some additional trimming before they become acceptable.

Scrap is residual material that results from manufacturing a product; it has low retail sales value compared with the total sales value of the product. An example of scrap would be any leftover material from a cutting process that is too small to use in any other clothing.

As the above examples indicate, a single productive process might generate, spoilage, scrap, and rework simultaneously.

Diff: 2

Terms: spoilage, scrap, rework

Objective: 6, 7

AACSB: Reflective thinking

14) You are the chief financial officer of a lumber mill, and you are becoming quite concerned about the spoilage, scrap, and reworked items associated with your production processes. Your firm produces mainly products for the building industry.

Required:

Discuss the problems associated with these items and the methods your company can use to reduce spoilage, scrap, and reworked items.

Answer: The problems associated with these items include:

1. your company pays for the total raw material, not just the portion converted into a salable product;
2. the cost of disposing these unsalable or unused items, both the disposal costs and the costs and problems associated with finding a landfill site or other disposal site;
3. these disposed or unused items can create an eyesore, and attract the wrath of the environmentalists; and
4. developing high-value added products that can be produced from these various items.

The methods your company can use to reduce these items include:

1. calculating the costs of these problems because an accurate assessment of the total costs should certainly provide an incentive to your firm to investigate possible actions;
2. exploring methods of redesigning the production process to minimize these costs; and
3. investing in more sophisticated capital equipment that can be designed to reduce these costs.

Diff: 3

Terms: rework, scrap, spoilage

Objective: 6, 7

AACSB: Analytical skills

15) How can a company account for scrap? Include in your explanation a discussion of the two aspects of accounting for scrap.

Answer: Since scrap is a residual material that results from manufacturing a product, it has a low sales value as compared to the actual value of the product. The aspects of accounting for scrap are (1) planning and control of the scrap (which includes the physical tracking), and (2) inventory costing (which includes when and how scrap affects operating income).

Regarding the planning and control of the scrap it is important to measure how much scrap is being generated (by weighing or counting the pieces) and then keep records to indicate where the scrap is keeping a log of quantity and location. This will help to develop records that can be used to compare the amount of scrap generated to the expected amount generated based on budgets and units of good product completed. Also, since scrap has a value, it will reduce the likelihood that the scrap gets stolen.

In terms of the cost accounting for the scrap there are two options regarding when the scrap is potentially recognized in the accounting records: (1) at the time the scrap is produced, or (2) at the time the scrap is sold. If the dollar value of the scrap is immaterial, the simplest accounting method is to record the quantity of scrap returned to the storage area and then regard the scrap sales as a separate line item in the income statement. If the scrap is material in value, then it can be recognized at the time of its production and can have journal entries returning it to a materials control asset account (as a debit) and then credited when it later gets sold.

Diff: 2

Terms: scrap

Objective: 7

AACSB: Reflective thinking

16) For each of the following (actual real-world examples), develop products that can be sold from the listed scrap.

- a. The Federal Reserve Banks destroy old money. Burning this money is usually forbidden under the environmental laws of most municipalities.
- b. A manufacturer of cotton undergarments for prisoners has much cotton left over. The manufacturer is located in a very rural area of Alabama.
- c. A hog renderer has hog bristles as a result of the slaughtering process.

Answer:

- a. The Federal Reserve Banks bag up the shredded money and sell it in gift shops. This is a very efficient use of the scrap. The purchasers pay a price in excess of what the Federal Reserve would receive from any other source. Other uses might include selling for use as packaging materials.
- b. The above manufacturer sells the scrap for use in the cleaning of guns. Other uses would include similar cleaning uses or dyeing the cloth and selling it for ornaments.
- c. The hog bristles can be used in shaving equipment and for bristle brushes.

Diff: 2

Terms: scrap

Objective: 7

AACSB: Ethical reasoning

Objective 18.A

1) The standard-costing method:

- A) adds a layer of complexity to the calculation of equivalent-unit costs in a process-costing environment
- B) makes calculating equivalent-unit costs unnecessary
- C) requires an analysis of the spoilage costs in beginning inventory
- D) requires an analysis of the spoilage costs in ending inventory

Answer: B

Diff: 2

Terms: standard-costing method, spoilage

Objective: A

AACSB: Reflective thinking

2) Under standard costing, there is no need to calculate a cost per equivalent unit.

Answer: TRUE

Diff: 2

Terms: spoilage, standard costing

Objective: A

AACSB: Analytical skills

3) Springfield Sign Shop manufactures only specific orders. It uses a standard cost system. During one large order for the airport authority, an unusual number of signs were spoiled. The normal spoilage rate is 10% of units started. The point of first inspection is half way through the process, the second is three-fourths through the process, and the final inspection is at the end of the process. Other information about the job is as follows:

Signs started 3,000
Signs spoiled 450

Direct materials put into process at beginning	\$ 60,000
Conversion costs for job	\$120,000
Standard direct material costs per sign	\$27
Standard conversion cost per sign	\$54
Average point of spoilage is the 3/4 completion point	
Average current disposal cost per spoiled sign	\$15

Required:

Make necessary journal entries to record all spoilage.

Answer:

Average cost per sign when spoiled:

Direct material cost	\$27.00
Conversion ($\$54 \times 3/4$)	<u>40.50</u>
Total cost per spoiled sign	<u>\$67.50</u>

Abnormal spoilage = Total spoilage - normal spoilage
= 450 - 300
= 150

Materials Control ($450 \times \$15$)	6,750	
Loss from Abnormal Spoilage ($150 \times \$52.50$)	7,875	
Manufacturing Overhead Control ($300 \times \$52.50$)	15,750	
Work-in-Process Control, airport job ($450 \times \$67.50$)		30,375

Diff: 3

Terms: spoilage, normal spoilage, standard cost system

Objective: A

AACSB: Analytical skills