Chapter 6—Process Costing

LEARNING OBJECTIVES

LO 1	How does process costing differ from job order costing?
LO 2	For what reasons are equivalent units of production used in process costing?
LO 3	How are equivalent units of production, unit costs, and inventory values determined using the weighted average method of process costing?
LO 4	How are equivalent units of production, unit costs, and inventory values determined using the FIFO method of process costing?
LO 5	How can standard costs be used in a process costing system?
LO 6	Why would a company use a hybrid costing system?
LO 7	(Appendix 1) What alternative methods can be used to calculate equivalent units of production?
LO 8	(Appendix 2) How are normal and abnormal spoilage losses treated in an EUP schedule?

QUESTION GRID

True/False

	Difficulty Level			Learning Objectives							
	Easy	Moderate	Difficult	LO 1	LO 2	LO 3	LO 4	LO 5	LO 6	LO 7	LO 8
1	x			x							
2	x			x							
3	x				x						
4	x					x					
5	x					x					
6	x					x					
7	x					x					
8	x				x	x					
9	x				x		x				
10	x					x					
11	x						x				
12	x							x			
13	x								x		
14		x							x		
15		x								x	
16		x								x	
17	x										x
18	x										x
19	x										x
20	x										x
21		x									x
22		x									x
23		x									x
24		x									x
25	x										x
26	x										x
27	x										x

Completion

	Difficulty Level			Learning Objectives							
	Easy	Moderate	Difficult	LO 1	LO 2	LO 3	LO 4	LO 5	LO 6	LO 7	LO 8
1	x			x							
2	x			x							
3	x			x							
4	x				x						
5	x					x					
6	x								x		
7		x									x
8	x					x	x				

Multiple Choice

	Difficulty Level			Learning Objectives							
	Easy	Moderate	Difficult	LO 1	LO 2	LO 3	LO 4	LO 5	LO 6	LO 7	LO 8
1	x			x							
2	x			x							
3	x			x							
4	x			x							
5	x			x							
6		x			x						
7	x				x						
8		x				x					
9		x				x					
10		x				x	x				
11		x						x			
12	x						x				
13		x					x				
14	x						x				
15	x					x	x				
16		x				x	x				
17	x					x					
18	x					x					
19	x					x					
20	x					x	x				
21	x			x							
22		x				x					
23	x				x						
24	x					x					
25	x				x						
26	x								x		
27		x						x			
28	x				x		x				
29	x										x
30	x										x
31		x									x
32	x										x
33	x										x
34		x									x
35	x										x
36	x										x

	Difficulty Level			Learning Objectives							
	Easy	Moderate	Difficult	LO 1	LO 2	LO 3	LO 4	LO 5	LO 6	LO 7	LO 8
37	X										x
38		x									x
39	X										x
40	X										x
41		x									x
42		x									x
43		x									x
44		x									x
45	X										x
46	X										x
47	X				x						
48	X				x						
49		x			x						
50	X				x						
51	X				x	x					
52		x			x	x					
53	X				x		x				
54		x			x		x				
55	X				x						
56		x				x					
57		x					x				
58	X				x						
59		x				x					
60		x					x				
61		x					x				
62		x					x				
63		x					x				
64		x					x				
65		x					x				
66		x			x						
67	X				x		x				
68		x			x		x				
69	X				x	x					
70		x			x	x					
71	X				x						
72	X				x						
73	X				x						
74	X					x					
75	X						x				
76		x			x	x					
77		x			x		x				
78		x				x					
79		x				x					
80			x			x					
81		x					x				
82			x				x				
83	X				x	x					
84		x			x		x				

	Difficulty Level			Learning Objectives							
	Easy	Moderate	Difficult	LO 1	LO 2	LO 3	LO 4	LO 5	LO 6	LO 7	LO 8
85		x			x	x					
86		x			x		x				
87		x			x	x					
88		x			x		x				
89		x			x		x				
90		x			x	x					
91		x			x		x				
92		x			x	x					
93	X				x	x					x
94	X				x	x					x
95		x			x	x					
96		x			x	x					
97	X										x
98	X				x	x					
99	X				x		x				x
100	X				x	x					x
101	X				x		x				
102	X				x		x				
103			x		x		x				
104		x			x		x				x
105		x			x		x				x
106		x			x						x
107			x		x		x				x
108	X				x	x					x
109	X				x	x					x
110	X				x	x					x
111	X				x	x					
112		x			x		x				x
113		x			x		x				x
114	X				x	x					x
115	X				x	x					x
116	X				x		x				
117	X				x		x				
118	X				x	x					
119	X				x	x					
120		x			x		x				
121		x			x		x				x
122		x			x		x				x
123			x		x	x					

Short-Answer

	Difficulty Level			Learning Objectives							
	Easy	Moderate	Difficult	LO 1	LO 2	LO 3	LO 4	LO 5	LO 6	LO 7	LO 8
1		x									x
2		x				x	x				
3		x				x					
4		x						x			
5		x								x	
6		x									x
7		x									x

Problem	Difficulty Level			Learning Objectives							
	Easy	Moderate	Difficult	LO 1	LO 2	LO 3	LO 4	LO 5	LO 6	LO 7	LO 8
1		x				x	x				
2		x				x	x				
3			x			x	x				
4			x			x	x				
5		x				x	x				
6		x				x	x				
7		x				x	x				
8		x				x					x
9		x				x					x
10		x				x					x
11		x				x					x
12		x				x					x
13		x				x					x
14		x					x				x
15		x				x					x

TRUE/FALSE

1. Process costing is most appropriate when manufacturing large batches of homogenous products.

   ANS: T DIF: Easy OBJ: 6-1

2. Conversion costs include all manufacturing costs other than direct materials

   ANS: T DIF: Easy OBJ: 6-1

3. Equivalent units are computed to assign costs to partially completed units

   ANS: T DIF: Easy OBJ: 6-2

4. The weighted average method combines beginning inventory and current production to compute cost per unit of production.

   ANS: T DIF: Easy OBJ: 6-3

5. The FIFO method combines beginning inventory and current production to compute cost per unit of production.

   ANS: F DIF: Easy OBJ: 6-3

6. The weighted average method separates beginning inventory and current production to compute cost per unit of production.

   ANS: F DIF: Easy OBJ: 6-3

7. The FIFO method separates beginning inventory and current production to compute cost per unit of production.

   ANS: T DIF: Easy OBJ: 6-3

8. The numerator in the formula for equivalent units includes all beginning inventory costs when using the weighted average costing assumption.

   ANS: T DIF: Easy OBJ: 6-2,6-3

9. The numerator in the formula for equivalent units includes all beginning inventory costs when using the FIFO costing assumption.

   ANS: F DIF: Easy OBJ: 6-2,6-4

10. The weighted average costing method assumes that units in beginning inventory are the first units transferred.

    ANS: F DIF: Easy OBJ: 6-3

11. The FIFO costing method assumes that units in beginning inventory are the first units transferred.

    ANS: T DIF: Easy OBJ: 6-4

12. Standard costing is compatible with both FIFO and weighted average methods of costing

ANS: F DIF: Moderate OBJ: 6-5

13. A hybrid costing system would be appropriate for a company that manufactures cake flour.

ANS: F DIF: Easy OBJ: 6-6

14. A hybrid costing system would be appropriate for a company that manufactures several varieties of jam.

ANS: F DIF: Moderate OBJ: 6-6

15. Using FIFO costing, equivalent units of production (EUP) can be determined by subtracting EUP's in Beginning work in process from weighted average EUP.

ANS: T DIF: Moderate OBJ: 6-7

16. Weighted average equivalent units of production (EUP) can be determined by adding EUP's in ending work in process to units transferred out.

ANS: T DIF: Moderate OBJ: 6-7

17. Continuous production losses are assumed to occur uniformly throughout the process.

ANS: T DIF: Easy OBJ: 6-8

18. Discrete production losses are assumed to occur throughout the process.

ANS: F DIF: Easy OBJ: 6-8

19. Discrete production losses are assumed to occur at the end of a process.

ANS: T DIF: Easy OBJ: 6-8

20. Continuous production losses are assumed to occur at the end of a process

ANS: F DIF: Easy OBJ: 6-8

21. Abnormal continuous losses are absorbed by all units in ending inventory and transferred out on a EUP basis.

ANS: F DIF: Moderate OBJ: 6-8

22. Normal continuous losses are absorbed by all units in ending inventory and transferred out on a EUP basis.

ANS: T DIF: Moderate OBJ: 6-8

23. Costs of normal shrinkage and normal continuous losses in a process costing environment are handled by the method of neglect.

    ANS: T DIF: Moderate OBJ: 6-8

24. Costs of normal shrinkage and normal continuous losses in a process costing environment are handled by the method of accretion.

    ANS: F DIF: Moderate OBJ: 6-8

25. A continuous loss is assumed to occur at a specific point in the production process.

    ANS: F DIF: Easy OBJ: 6-8

26. A discrete loss is assumed to occur at a specific point in the production process.

    ANS: T DIF: Easy OBJ: 6-8

27. Abnormal spoilage is always accounted for on an equivalent unit basis.

    ANS: T DIF: Easy OBJ: 6-8

COMPLETION

1. All manufacturing costs other than direct materials are referred to as _____

   ANS: conversion costs

   DIF: Easy OBJ: 6-1

2. The process costing system that computes equivalent units on beginning work in process inventory as well as work done in the current period is known as a _____.

   ANS: weighted average process costing method

   DIF: Easy OBJ: 6-1

3. The process costing system that computes equivalent units on work done in the current period is known as a _____.

   ANS: FIFO process costing method

   DIF: Easy OBJ: 6-1

4. The number of completed units that could have been produced from the inputs applied is referred to as _____.

   ANS: equivalent units

   DIF: Easy OBJ: 6-2

5. Two methods of accounting for cost flows in process costing are _____ and _____.

   ANS: weighted average; FIFO

   DIF: Easy OBJ: 6-3

6. A _____ costing system is appropriate where products manufactured have different direct materials but similar processing techniques.

   ANS: hybrid

   DIF: Easy OBJ: 6-6

7. Costs of normal shrinkage and normal continuous losses in a process costing environment are handled by the method of _____.

   ANS: neglect

   DIF: Moderate OBJ: 6-8

8. The _____ report details all manufacturing quantities and costs, shows computation of EUP, and indicates cost assignments to goods manufactured.

   ANS: cost of production

   DIF: Easy OBJ: 6-3,6-4

MULTIPLE CHOICE

1. Which cost accumulation procedure is most applicable in continuous mass-production manufacturing environments?
   a. standard
   b. actual
   c. process
   d. job order

   ANS: C DIF: Easy OBJ: 6-1

2. Process costing is used in companies that
   a. engage in road and bridge construction.
   b. produce sailboats made to customer specifications.
   c. produce bricks for sale to the public.
   d. construct houses according to customer plans.

   ANS: C DIF: Easy OBJ: 6-1

3. A producer of _____ would **not** use a process costing system.
   a. gasoline
   b. potato chips
   c. blank videotapes
   d. stained glass windows

   ANS: D DIF: Easy OBJ: 6-1

4. A process costing system is used by a company that
   a. produces heterogeneous products.
   b. produces items by special request of customers.
   c. produces homogeneous products.
   d. accumulates costs by job.

   ANS: C DIF: Easy OBJ: 6-1

5. Which is the best cost accumulation procedure to use for continuous mass production of like units?
   a. actual
   b. standard
   c. job order
   d. process

   ANS: D DIF: Easy OBJ: 6-1

6. Equivalent units of production are equal to the
   a. units completed by a production department in the period.
   b. number of units worked on during the period by a production department.
   c. number of whole units that could have been completed if all work of the period had been used to produce whole units.
   d. identifiable units existing at the end of the period in a production department.

   ANS: C DIF: Moderate OBJ: 6-2

7. In a process costing system using the weighted average method, cost per equivalent unit for a given cost component is found by dividing which of the following by EUP?
   a. only current period cost
   b. current period cost plus the cost of beginning inventory
   c. current period cost less the cost of beginning inventory
   d. current period cost plus the cost of ending inventory

   ANS: B DIF: Easy OBJ: 6-2

8. The weighted average method is thought by some accountants to be inferior to the FIFO method because it
   a. is more difficult to apply.
   b. only considers the last units worked on.
   c. ignores work performed in subsequent periods.
   d. commingles costs of two periods.

   ANS: D DIF: Moderate OBJ: 6-3

9. The first step in determining the cost per EUP per cost component under the weighted average method is to
   a. add the beginning Work in Process Inventory cost to the current period's production cost.
   b. divide the current period's production cost by the equivalent units.
   c. subtract the beginning Work in Process Inventory cost from the current period's production cost.
   d. divide the current period's production cost into the EUP.

   ANS: A DIF: Moderate OBJ: 6-3

10. The difference between EUP calculated using FIFO and EUP calculated using weighted average is the equivalent units
    a. started and completed during the period.
    b. residing in beginning Work in Process Inventory.
    c. residing in ending Work in Process Inventory.
    d. uncompleted in Work in Process Inventory.

    ANS: B DIF: Moderate OBJ: 6-3,6-4

11. EUP calculations for standard process costing are the same as
    a. the EUP calculations for weighted average process costing.
    b. the EUP calculations for FIFO process costing.
    c. LIFO inventory costing for merchandise.
    d. the EUP calculations for LIFO process costing.

    ANS: B DIF: Moderate OBJ: 6-5

12. In a FIFO process costing system, which of the following are assumed to be completed first in the current period?
    a. units started this period
    b. units started last period
    c. units transferred out
    d. units still in process

    ANS: B DIF: Easy OBJ: 6-4

13. To compute equivalent units of production using the FIFO method of process costing, work for the current period must be stated in units
    a. completed during the period and units in ending inventory.
    b. completed from beginning inventory, units started and completed during the period, and units partially completed in ending inventory.
    c. started during the period and units transferred out during the period.
    d. processed during the period and units completed during the period.

    ANS: B DIF: Moderate OBJ: 6-4

14. The FIFO method of process costing will produce the same cost of goods transferred out amount as the weighted average method when
    a. the goods produced are homogeneous.
    b. there is no beginning Work in Process Inventory.
    c. there is no ending Work in Process Inventory.
    d. beginning and ending Work in Process Inventories are each 50 percent complete.

    ANS: B DIF: Easy OBJ: 6-4

15. The primary difference between the FIFO and weighted average methods of process costing is
    a. in the treatment of beginning Work in Process Inventory.
    b. in the treatment of current period production costs.
    c. in the treatment of spoiled units.
    d. none of the above.

    ANS: A DIF: Easy OBJ: 6-3,6-4

16. Material is added at the beginning of a process in a process costing system. The beginning Work in Process Inventory for the process was 30 percent complete as to conversion costs. Using the FIFO method of costing, the number of equivalent units of material for the process during this period is equal to the
    a. beginning inventory this period for the process.
    b. units started this period in the process.
    c. units started this period in the process plus the beginning Work in Process Inventory.
    d. units started and completed this period plus the units in ending Work in Process Inventory.

    ANS: D DIF: Moderate OBJ: 6-3,6-4

17. In a cost of production report using process costing, transferred-in costs are similar to the
    a. cost of material added at the beginning of production.
    b. conversion cost added during the period.
    c. cost transferred out to the next department.
    d. cost included in beginning inventory.

    ANS: A DIF: Easy OBJ: 6-3

18. In a process costing system, the journal entry to record the transfer of goods from Department #2 to Finished Goods Inventory is a
    a. debit Work in Process Inventory #2, credit Finished Goods Inventory.
    b. debit Finished Goods Inventory, credit Work in Process Inventory #1.
    c. debit Finished Goods Inventory, credit Work in Process Inventory #2.
    d. debit Cost of Goods Sold, credit Work in Process Inventory #2.

    ANS: C DIF: Easy OBJ: 6-3

19. Transferred-in cost represents the cost from
    a. the last department only.
    b. the last production cycle.
    c. all prior departments.
    d. the current period only.

    ANS: C DIF: Easy OBJ: 6-3

20. Which of the following is(are) the same between the weighted average and FIFO methods of calculating EUPs?

	Units to account for	EUP calculations	Total cost to account for
a.	no	yes	no
b.	yes	yes	yes
c.	yes	no	no
d.	yes	no	yes

    ANS: D DIF: Easy OBJ: 6-3,6-4

21. Process costing techniques should be used in assigning costs to products
    a. if a product is manufactured on the basis of each order received.
    b. when production is only partially completed during the accounting period.
    c. if a product is composed of mass-produced homogeneous units.
    d. whenever standard-costing techniques should not be used.

    ANS: C DIF: Easy OBJ: 6-1

22. Averaging the total cost of completed beginning inventory and units started and completed over all units transferred out is known as
    a. strict FIFO.
    b. modified FIFO.
    c. weighted average costing.
    d. normal costing.

    ANS: B DIF: Moderate OBJ: 6-3

23. A process costing system
    a. cannot use standard costs.
    b. restates Work in Process Inventory in terms of completed units.
    c. accumulates costs by job rather than by department.
    d. assigns direct labor and manufacturing overhead costs separately to units of production.

    ANS: B DIF: Easy OBJ: 6-2

24. A process costing system does which of the following?

	Calculates EUPs	Assigns costs to inventories
a.	no	no
b.	no	yes
c.	yes	yes
d.	yes	no

    ANS: C DIF: Easy OBJ: 6-3

25. A process costing system

	Calculates average cost per whole unit	Determines total units to account for
a.	yes	yes
b.	no	no
c.	yes	no
d.	no	yes

    ANS: D DIF: Easy OBJ: 6-2

26. A hybrid costing system combines characteristics of
    a. job order and standard costing systems.
    b. job order and process costing systems.
    c. process and standard costing systems.
    d. job order and normal costing systems.

    ANS: B DIF: Easy OBJ: 6-6

27. When standard costs are used in process costing,
    a. variances can be measured during the production period.
    b. total costs rather than current production and current costs are used.
    c. process costing calculations are made simpler.
    d. the weighted average method of calculating EUPs makes computing transferred-out costs easier.

    ANS: D DIF: Moderate OBJ: 6-5

28. Which of the following is subtracted from weighted average EUP to derive FIFO EUP?
    a. beginning WIP EUP completed in current period
    b. beginning WIP EUP produced in prior period
    c. ending WIP EUP not completed
    d. ending WIP EUP completed

    ANS: B DIF: Easy OBJ: 6-2,6-4

29. The cost of abnormal continuous losses is
    a. considered a product cost.
    b. absorbed by all units in ending inventory and transferred out on an equivalent unit basis.
    c. written off as a loss on an equivalent unit basis.
    d. absorbed by all units past the inspection point.

    ANS: C DIF: Easy OBJ: 6-8

30. Abnormal spoilage can be

	continuous	discrete
a.	yes	no
b.	no	no
c.	yes	yes
d.	no	yes

    ANS: C DIF: Easy OBJ: 6-8

31. When the cost of lost units must be assigned, and those same units must be included in an equivalent unit schedule, these units are considered
    a. normal and discrete.
    b. normal and continuous.
    c. abnormal and discrete.
    d. abnormal and continuous.

    ANS: D DIF: Moderate OBJ: 6-8

32. A continuous loss
    a. occurs unevenly throughout a process.
    b. never occurs during the production process.
    c. always occurs at the same place in a production process.
    d. occurs evenly throughout the production process.

    ANS: D DIF: Easy OBJ: 6-8

33. Which of the following would be considered a discrete loss in a production process?
    a. adding the correct ingredients to make a bottle of ketchup
    b. putting the appropriate components together for a stereo
    c. adding the wrong components when assembling a stereo
    d. putting the appropriate pieces for a bike in the box

    ANS: C DIF: Easy OBJ: 6-8

34. The method of neglect handles spoilage that is
    a. discrete and abnormal.
    b. discrete and normal.
    c. continuous and abnormal.
    d. continuous and normal.

    ANS: D DIF: Moderate OBJ: 6-8

35. The cost of normal discrete losses is
    a. absorbed by all units past the inspection point on an equivalent unit basis.
    b. absorbed by all units in ending inventory.
    c. considered a period cost.
    d. written off as a loss on an equivalent unit basis.

    ANS: A DIF: Easy OBJ: 6-8

36. The cost of abnormal continuous losses is
    a. considered a product cost.
    b. absorbed by all units in ending inventory and transferred out on an equivalent unit basis.
    c. written off as a loss on an equivalent unit basis.
    d. absorbed by all units past the inspection point.

    ANS: C DIF: Easy OBJ: 6-8

37. Normal spoilage units resulting from a continuous process
    a. are extended to the EUP schedule.
    b. result in a higher unit cost for the good units produced.
    c. result in a loss being incurred.
    d. cause estimated overhead to increase.

    ANS: B DIF: Easy OBJ: 6-8

38. When the cost of lost units must be assigned, and those same units must be included in an equivalent unit schedule, these units are considered
    a. normal and discrete.
    b. normal and continuous.
    c. abnormal and discrete.
    d. abnormal and continuous.

    ANS: D DIF: Moderate OBJ: 6-8

39. Which of the following accounts is credited when abnormal spoilage is written off in an actual cost system?
    a. Miscellaneous Revenue
    b. Loss from Spoilage
    c. Finished Goods
    d. Work in Process

    ANS: D DIF: Easy OBJ: 6-8

40. The cost of abnormal discrete units must be assigned to

	good units	lost units
a.	yes	yes
b.	no	no
c.	yes	no
d.	no	yes

    ANS: D DIF: Easy OBJ: 6-8

41. Which of the following statements is **false**? The cost of rework on defective units, if
    a. abnormal, should be assigned to a loss account.
    b. normal and if actual costs are used, should be assigned to material, labor and overhead costs of the good production.
    c. normal and if standard costs are used, should be considered when developing the overhead application rate.
    d. abnormal, should be prorated among Work In Process, Finished Goods, and Cost of Goods Sold.

    ANS: D DIF: Moderate OBJ: 6-8

42. If normal spoilage is detected at an inspection point within the process (rather than at the end), the cost of that spoilage should be
    a. included with the cost of the units sold during the period.
    b. included with the cost of the units completed in that department during the period.
    c. allocated to ending work in process units and units transferred out based on their relative values.
    d. allocated to the good units that have passed the inspection point.

    ANS: D DIF: Moderate OBJ: 6-8

43. Taylor Co. has a production process in which the inspection point is at 65 percent of conversion. The beginning inventory for July was 35 percent complete and ending inventory was 80 percent complete. Normal spoilage costs would be assigned to which of the following groups of units, using FIFO costing?

	Beginning Inventory	Ending Inventory	Units Started & Completed
a.	no	yes	yes
b.	yes	yes	yes
c.	no	no	yes
d.	yes	no	no

    ANS: B DIF: Moderate OBJ: 6-8

44. Which of the following is **not** a question that needs to be answered with regard to quality control?
    a. What happens to the spoiled units?
    b. What is the actual cost of spoilage?
    c. How can spoilage be controlled?
    d. Why does spoilage happen?

    ANS: A DIF: Moderate OBJ: 6-8

45. Normal spoilage units resulting from a continuous process
    a. are extended to the EUP schedule.
    b. result in a higher unit cost for the good units produced.
    c. result in a loss being incurred.
    d. cause estimated overhead to increase.

    ANS: B DIF: Easy OBJ: 6-8

46. The addition of material in a successor department that causes an increase in volume is called
    a. accretion.
    b. reworked units.
    c. complex procedure.
    d. undetected spoilage.

    ANS: A DIF: Easy OBJ: 6-8

47. Long Company transferred 5,500 units to Finished Goods Inventory during September. On September 1, the company had 300 units on hand (40 percent complete as to both material and conversion costs). On June 30, the company had 800 units (10 percent complete as to material and 20 percent complete as to conversion costs). The number of units started and completed during September was:
    a. 5,200.
    b. 5,380.
    c. 5,500.
    d. 6,300.

    ANS: A

Units Transferred Out	5,500
Less: Units in Beginning Inventory	(300)
Units Started and Completed	5,200

    DIF: Easy OBJ: 6-2

48. Green Company started 9,000 units in February. The company transferred out 7,000 finished units and ended the period with 3,500 units that were 40 percent complete as to both material and conversion costs. Beginning Work in Process Inventory units were
a. 500.
b. 600.
c. 1,500.
d. 2,000.

ANS: C

Beginning Work in Process	**1,500**
Add: Units Started	9,000
Deduct: Units Transferred Out	7,000
Ending Work in Process	3,500

DIF: Easy OBJ: 6-2

49. Bush Company had beginning Work in Process Inventory of 5,000 units that were 40 percent complete as to conversion costs. X started and completed 42,000 units this period and had ending Work in Process Inventory of 12,000 units. How many units were started this period?
a. 42,000
b. 47,000
c. 54,000
d. 59,000

ANS: C

Beginning Work in Process	5,000
Add: Units Started	**54,000**
Deduct: Units Transferred Out	47,000
Ending Work in Process	12,000

DIF: Moderate OBJ: 6-2

50. Dixie Company uses a weighted average process costing system. Material is added at the start of production. Dixie Company started 13,000 units into production and had 4,500 units in process at the start of the period that were 60 percent complete as to conversion costs. If Dixie transferred out 11,750 units, how many units were in ending Work in Process Inventory?
a. 1,250
b. 3,000
c. 3,500
d. 5,750

ANS: D

Beginning Work in Process	4,500
Add: Units Started	13,000
Deduct: Units Transferred Out	11,750
Ending Work in Process	**5,750**

DIF: Easy OBJ: 6-2

51. Taylor Company uses a weighted average process costing system and started 30,000 units this month. Taylor had 12,000 units that were 20 percent complete as to conversion costs in beginning Work in Process Inventory and 3,000 units that were 40 percent complete as to conversion costs in ending Work in Process Inventory. What are equivalent units for conversion costs?
a. 37,800
b. 40,200
c. 40,800
d. 42,000

ANS: B

Beginning Work in Process	12,000	20%	2,400
+ Completion of Units in Process	12,000	80%	9,600
+ Units Started and Completed	27,000	100%	27,000
+ Ending Work in Process	3,000	40%	1,200
Equivalent Units of Production			**40,200**

DIF: Easy OBJ: 6-2,6-3

52. Kerry Company makes small metal containers. The company began December with 250 containers in process that were 30 percent complete as to material and 40 percent complete as to conversion costs. During the month, 5,000 containers were started. At month end, 1,700 containers were still in process (45 percent complete as to material and 80 percent complete as to conversion costs). Using the weighted average method, what are the equivalent units for conversion costs?
a. 3,450
b. 4,560
c. 4,610
d. 4,910

ANS: D

Beginning Work in Process	250	40%	100
+ Completion of Units in Process	250	60%	150
+ Units Started and Completed	3,300	100%	3,300
+ Ending Work in Process	1,700	80%	1,360
Equivalent Units of Production			**4,910**

DIF: Moderate OBJ: 6-2,6-3

53. Mehta Company Co. uses a FIFO process costing system. The company had 5,000 units that were 60 percent complete as to conversion costs at the beginning of the month. The company started 22,000 units this period and had 7,000 units in ending Work in Process Inventory that were 35 percent complete as to conversion costs. What are equivalent units for material, if material is added at the beginning of the process?
a. 18,000
b. 22,000
c. 25,000
d. 27,000

ANS: B

The material is added at the beginning of the process; therefore there are 22,000 equivalent units of material.

DIF: Easy OBJ: 6-2,6-4

54. Julia Company makes fabric-covered hatboxes. The company began September with 500 boxes in process that were 100 percent complete as to cardboard, 80 percent complete as to cloth, and 60 percent complete as to conversion costs. During the month, 3,300 boxes were started. On September 30, 350 boxes were in process (100 percent complete as to cardboard, 70 percent complete as to cloth, and 55 percent complete as to conversion costs). Using the FIFO method, what are equivalent units for cloth?
a. 3,295
b. 3,395
c. 3,450
d. 3,595

ANS: A

Beginning Work in Process (Ignored for FIFO)	500	0%	-
+ Completion of Units in Process	500	20%	100
+ Units Started and Completed	2,950	100%	2,950
+ Ending Work in Process	350	70%	245
Equivalent Units of Production			**3,295**

DIF: Moderate OBJ: 6-2,6-4

Reed Company

Reed Company. has the following information for November:

Beginning Work in Process Inventory (70% complete as to conversion)		6,000 units
Started		24,000 units
Ending Work in Process Inventory (10% complete as to conversion)		8,500 units
Beginning WIP Inventory Costs:		
Material	$23,400	
Conversion	50,607	
Current Period Costs:		
Material	$31,500	
Conversion	76,956	

All material is added at the start of the process and all finished products are transferred out.

55. Refer to Reed Company. How many units were transferred out in November?
    a. 15,500
    b. 18,000
    c. 21,500
    d. 24,000

    ANS: C

Beginning Work in Process	6,000
Add: Units Started	**24,000**
Deduct: Units Transferred Out	**21,500**
Ending Work in Process	8,500

    DIF: Easy OBJ: 6-2

56. Refer to Reed Company. Assume that weighted average process costing is used. What is the cost per equivalent unit for material?
    a. $0.55
    b. $1.05
    c. $1.31
    d. $1.83

    ANS: D

Material Costs:			
Beginning	$	23,400	
Current Period		31,500	
		54,900 ÷ 30,000 = units	**$ 1.83**

    DIF: Moderate OBJ: 6-3

57. Refer to Reed Company. Assume that FIFO process costing is used. What is the cost per equivalent unit for conversion?
    a. $3.44
    b. $4.24
    c. $5.71
    d. $7.03

    ANS: B

Conversion Costs:			
	Beginning (Ignored for FIFO)	$ -	
	Current Period	76,956	
		$ 76,956	
Equivalent Units			
	Beginning Inventory (6,000 * 30%)	1,800	
	Started and Completed (15,500)	15,500	
	Ending Inventory (8,500 * 10%)	850	
		18,150	equivalent units
	Cost per equivalent unit	$ 4.24	

DIF: Moderate OBJ: 6-4

Holiday Company

The Holiday Company makes wreaths in two departments: Forming and Decorating. Forming began the month with 500 wreaths in process that were 100 percent complete as to material and 40 percent complete as to conversion. During the month, 6,500 wreaths were started. At month end, Forming had 2,100 wreaths that were still in process that were 100 percent complete as to material and 50 percent complete as to conversion. Assume Forming uses the weighted average method of process costing. Costs in the Forming Department are as follows:

Beginning Work in Process Costs:	
Material	$1,000
Conversion	1,500
Current Costs:	
Material	$3,200
Conversion	5,045

The Decorating Department had 600 wreaths in process at the beginning of the month that were 80 percent complete as to material and 90 percent complete as to conversion. The department had 300 units in ending Work in Process that were 50 percent complete as to material and 75 percent complete as to conversion. Decorating uses the FIFO method of process costing, and costs associated with Decorating are:

Beginning WIP Inventory:	
Transferred In	$1,170
Material	4,320
Conversion	6,210
Current Period:	
Transferred In	?
Material	$67,745
Conversion	95,820

58. Refer to Holiday Company. How many units were transferred to Decorating during the month?
    a. 600
    b. 4,900
    c. 5,950
    d. 7,000

    ANS: B

Wreaths completed from BWIP	500
Wreaths started and completed	4400
	4900

    DIF: Easy OBJ: 6-2

59. Refer to Holiday Company. What was the cost transferred out of Forming during the month?
    a. $5,341
    b. $6,419
    c. $8,245
    d. $8,330

    ANS: D

Units Transferred Out	Cost per Eq. Unit	Total
4,900	1.70	$8,330

    DIF: Moderate OBJ: 6-3

60. Refer to Holiday Company. Assume 8,000 units were transferred to Decorating. Compute the number of equivalent units as to costs in Decorating for the transferred-in cost component.
    a. 7,400
    b. 7,700
    c. 8,000
    d. 8,600

    ANS: C

The transferred-in cost component is the 8,000 units that were transferred in.

    DIF: Moderate OBJ: 6-4

61. Refer to Holiday Company. Assume 8,000 units were transferred to Decorating. Compute the number of equivalent units in Decorating for material.
    a. 7,970
    b. 8,000
    c. 8,330
    d. 8,450

    ANS: A

Materials: Decorating: FIFO	**Units**	**% Complete**	**Eqiv. Units**
Beginning Work in Process	600	20%	120
+ Units Started and Completed	7,700	100%	7,700
+ Ending Work in Process	300	50%	150
Equivalent Units of Production			**7,970**

    DIF: Moderate OBJ: 6-4

62. Refer to Holiday Company. Assume 8,000 units were transferred to Decorating. Compute the number of equivalent units in Decorating for conversion.
    a. 7,925
    b. 7,985
    c. 8,360
    d. 8,465

    ANS: B

Conversion: Decorating: FIFO	**Units**	**% Complete**	**Equiv. Units**
Beginning Work in Process	600	10%	60
+ Units Started and Completed	7,700	100%	7,700
+ Ending Work in Process	300	75%	225
Equivalent Units of Production			**7,985**

    DIF: Moderate OBJ: 6-4

63. Refer to Holiday Company. Assume that 8,000 units were transferred to Decorating at a total cost of $16,000. What is the material cost per equivalent unit in Decorating?
a. $8.50
b. $8.65
c. $8.80
d. $9.04

ANS: A

When FIFO is used, consider only current costs.

Current Costs	Equiv Units	Cost/ Equiv Unit
$67,745	7,970	$8.50

DIF: Moderate OBJ: 6-4

64. Refer to Holiday Company. Assume that 8,000 units were transferred to Decorating at a total cost of $16,000. What is the conversion cost per equivalent unit in Decorating?
a. $11.32
b. $11.46
c. $12.00
d. $12.78

ANS: C

When FIFO is used, consider only current costs.

Current Costs	Equiv Units	Cost/ Equiv Unit
$95,820	7,985	$12.00

DIF: Moderate OBJ: 6-4

65. Refer to Holiday Company. Assume the material cost per EUP is $8.00 and the conversion cost per EUP is $15 in Decorating. What is the cost of completing the units in beginning inventory?
a. $ 960
b. $ 1,380
c. $ 1,860
d. $11,940

ANS: C

Costs to Complete Beg Inv	Units	Percent to Complete	Cost per Unit	Total
Materials	600	20%	$8	$960
Conversion	600	10%	$15	$900
Total Costs to Complete				**$1,860**

DIF: Moderate OBJ: 6-4

Ryan Company

Ryan Company adds material at the start to its production process and has the following information available for March:

Beginning Work in Process Inventory		
(40% complete as to conversion)	7,000	units
Started this period	32,000	units
Ending Work in Process Inventory		
(25% complete as to conversion)	2,500	units
Transferred out	?	

66. Refer to Ryan Company. Compute the number of units started and completed in March.
a. 29,500
b. 34,500
c. 36,500
d. 39,000

ANS: A

Units started this period	32,000
Less: Ending Work in Process	2,500
Units started and completed this period	29,500

DIF: Moderate OBJ: 6-2

67. Refer to Ryan Company. Calculate equivalent units of production for material using FIFO.
a. 32,000
b. 36,800
c. 37,125
d. 39,000

ANS: A

Materials are added at the beginning of the process. 32,000 units were started in the current period; therefore there are 32,000 equivalent units for materials.

DIF: Easy OBJ: 6-2,6-4

68. Refer to Ryan Company. Calculate equivalent units of production for conversion using FIFO.
a. 30,125
b. 34,325
c. 37,125
d. 39,000

ANS: B

Equivalent Units		
Beginning Inventory (7,000 * 60%)	4,200	
Started and Completed (29,500)	29,500	
Ending Inventory (2,500 * 25%)	625	
	34,325	equivalent units

DIF: Moderate OBJ: 6-2,6-4

69. Refer to Ryan Company. Calculate equivalent units of production for material using weighted average.
    a. 32,000
    b. 34,325
    c. 37,125
    d. 39,000

    ANS: D

Equivalent Units		
Beginning Inventory (7,000 units)	7,000	
Started this Period (32,000)	32,000	
	39,000	equivalent units

    DIF: Easy OBJ: 6-2,6-3

70. Refer to Ryan Company. Calculate equivalent units of production for conversion using weighted average.
    a. 34,325
    b. 37,125
    c. 38,375
    d. 39,925

    ANS: B

Equivalent Units		
Beginning Inventory (7,000 * 100%)	7,000	
Started and Completed (29,500)	29,500	
Ending Inventory (2,500 * 25%)	625	
	37,125	equivalent units

    DIF: Moderate OBJ: 6-2,6-3

Maxwell Company

Maxwell Company adds material at the start of production. The following production information is available for June:

Beginning Work in Process Inventory		
(45% complete as to conversion)	10,000	units
Started this period	120,000	units
Ending Work in Process Inventory		
(80% complete as to conversion)	8,200	units

Beginning Work in Process Inventory Costs:	
Material	$24,500
Conversion	68,905

Current Period Costs:	
Material	$ 75,600
Conversion	130,053

71. Refer to Maxwell Company. How many units must be accounted for?
    a. 118,200
    b. 128,200
    c. 130,000
    d. 138,200

    ANS: C

Beginning Work in Process	10,000
Units Started	120,000
Total Units	**130,000**

    DIF: Easy OBJ: 6-2

72. Refer to Maxwell Company. What is the total cost to account for?
    a. $ 93,405
    b. $205,653
    c. $274,558
    d. $299,058

    ANS: D

BWIP: Materials	$ 24,500
BWIP: Conversion	68,905
Current Period: Materials	75,600
Current Period: Conversion	130,053
Total Costs	**$299,058**

    DIF: Easy OBJ: 6-2

73. Refer to Maxwell Company. How many units were started and completed in the period?
    a. 111,800
    b. 120,000
    c. 121,800
    d. 130,000

    ANS: A

Units started this period		120,000
Less: Ending Work in Process		8,200
Units started and completed this period		**111,800**

    DIF: Easy OBJ: 6-2

74. Refer to Maxwell Company. What are the equivalent units for material using the weighted average method?
    a. 120,000
    b. 123,860
    c. 128,360
    d. 130,000

    ANS: D

Equivalent Units		
Beginning Inventory (10,000 * 100%)	10,000	
Started and Completed (111,800)	111,800	
Ending Inventory (8,200 * 25%)	8,200	
	130,000	equivalent units

    DIF: Easy OBJ: 6-3

75. Refer to Maxwell Company. What are the equivalent units for material using the FIFO method?
    a. 111,800
    b. 120,000
    c. 125,500
    d. 130,000

    ANS: B

Equivalent Units		
Beginning Inventory (Ignored for FIFO)	0	
Started and Completed (111,800)	111,800	
Ending Inventory (8,200 * 25%)	8,200	
	120,000	equivalent units

    DIF: Easy OBJ: 6-4

76. Refer to Maxwell Company. What are the equivalent units for conversion using the weighted average method?
    a. 120,000
    b. 123,440
    c. 128,360
    d. 130,000

    ANS: C

Beginning Work in Process	10,000	45%	4,500
+ Completion of Units in Process	10,000	55%	5,500
+ Units Started and Completed	111,800	100%	111,800
+ Ending Work in Process	8,200	80%	6,560
Equivalent Units of Production			**128,360**

    DIF: Moderate OBJ: 6-2,6-3

77. Refer to Maxwell Company. What are the equivalent units for conversion using the FIFO method?
a. 118,360
b. 122,860
c. 123,860
d. 128,360

ANS: C

Beginning Work in Process (ignored)	10,000	0%	-
+ Completion of Units in Process	10,000	55%	5,500
+ Units Started and Completed	111,800	100%	111,800
+ Ending Work in Process	8,200	80%	6,560
Equivalent Units of Production			**123,860**

DIF: Moderate OBJ: 6-2,6-4

78. Refer to Maxwell Company. What is the material cost per equivalent unit using the weighted average method?
a. $.58
b. $.62
c. $.77
d. $.82

ANS: C

Material Costs:			
Beginning	$ 24,500		
Current Period	75,600		
	100,100 ÷	130,000 =	**$ 0.77**
		units	per unit

DIF: Moderate OBJ: 6-3

79. Refer to Maxwell Company. What is the conversion cost per equivalent unit using the weighted average method?
a. $1.01
b. $1.05
c. $1.55
d. $1.61

ANS: B

Conversion Costs:			
Beginning	$ 68,905		
Current Period	130,053		
	198,958 ÷	128,360 =	**$ 1.55**
		units	per unit

DIF: Moderate OBJ: 6-3

80. Refer to Maxwell Company. What is the cost of units completed using the weighted average?
    a. $237,510
    b. $266,742
    c. $278,400
    d. $282,576

    ANS: D

Units Completed	Costs per Equivalent Unit	Total
121,800	(1.55 + .77) = $2.32	$282,576

    DIF: Difficult OBJ: 6-3

81. Refer to Maxwell Company. What is the conversion cost per equivalent unit using the FIFO method?
    a. $1.05
    b. $.95
    c. $1.61
    d. $1.55

    ANS: A

Conversion Costs:			
Beginning (Ignored)			
Current Period	130,053		
	130,053 ÷ 123,860 =	**$**	**1.05**
	units		per unit

    DIF: Moderate OBJ: 6-4

82. Refer to Maxwell Company. What is the cost of all units transferred out using the FIFO method?
    a. $204,624
    b. $191,289
    c. $287,004
    d. $298,029

    ANS: C

Units Completed	Costs per Equivalent Unit	Total
121,800	(1.05 + .63) = $1.68	$204,624

    DIF: Difficult OBJ: 6-4

Cherub Co.

Beginning inventory (30% complete as to Material B and 60% complete for conversion)	700	units
Started this cycle	2,000	units
Ending inventory (50% complete as to Material B and 80% complete for conversion)	500	units

Beginning inventory costs:

Material A	$14,270
Material B	5,950
Conversion	5,640

Current Period costs:

Material A	$40,000
Material B	70,000
Conversion	98,100

Material A is added at the start of production, while Material B is added uniformly throughout the process.

83. Refer to Cherub Company. Assuming a weighted average method of process costing, compute EUP units for Materials A and B.
    a. 2,700 and 2,280, respectively
    b. 2,700 and 2,450, respectively
    c. 2,000 and 2,240, respectively
    d. 2,240 and 2,700, respectively

    ANS: B

Weighted Average	**Material A**	**Material B**
Beginning Work in Process	700	700
Units Started and Completed	1500	1500
Ending Work in Process	500	250
EUP Materials	**2700**	**2450**

    DIF: Easy OBJ: 6-2,6-3

84. Refer to Cherub Company Assuming a FIFO method of process costing, compute EUP units for Materials A and B.
    a. 2,700 and 2,280, respectively
    b. 2,700 and 2,450, respectively
    c. 2,000 and 2,240, respectively
    d. 2,450 and 2,880, respectively

    ANS: C

FIFO	**Material A**	**Material B**
Beginning Work in Process	0	490
Units Started and Completed	1500	1500
Ending Work in Process	500	250
EUP Materials	**2000**	**2240**

    DIF: Moderate OBJ: 6-2,6-4

85. Refer to Cherub Company Assuming a weighted average method of process costing, compute EUP for conversion.
    a. 2,600
    b. 2,180
    c. 2,000
    d. 2,700

    ANS: A

Weighted Average		
Beginning Work in Process		700
Units Started and Completed		1500
Ending Work in Process		400
		2600

    DIF: Moderate OBJ: 6-2,6-3

86. Refer to Cherub Company Assuming a FIFO method of process costing, compute EUP for conversion.
    a. 2,240
    b. 2,180
    c. 2,280
    d. 2,700

    ANS: B

FIFO		
Beginning Work in Process (700 * 40%)		280
Units Started and Completed		1500
Ending Work in Process (500 * 80%)		400
		2180

    DIF: Moderate OBJ: 6-2,6-4

87. Refer to Cherub Company Assuming a weighted average method of process costing, compute the average cost per unit for Material A.
    a. $20.10
    b. $20.00
    c. $31.25
    d. $31.00

    ANS: A

Weighted Average: Material A			
Beginning	$ 14,270		
Current Period	40,000		
	54,270 ÷ 2,700 =	**$**	**20.10**
	units		per unit

    DIF: Moderate OBJ: 6-2,6-3

88. Refer to Cherub Company Assuming a FIFO method of process costing, compute the average cost per EUP for Material A.
    a. $31.25
    b. $20.10
    c. $20.00
    d. $31.00

    ANS: C

Material A Costs (Current Period)	Equivalent Units	Average Cost per EUP
$40,000	2,000	$20.00

    DIF: Moderate OBJ: 6-2,6-4

89. Refer to Cherub Company Assuming a FIFO method of process costing, compute the average cost per EUP for Material B.
    a. $20.10
    b. $31.25
    c. $20.00
    d. $31.00

    ANS: B

Material B Costs (Current Period)	Equivalent Units	Average Cost per EUP
$70,000	2,240	$31.25

    DIF: Moderate OBJ: 6-2,6-4

90. Refer to Cherub Company Assuming a weighted average method of process costing, compute the average cost per EUP for Material B.
    a. $20.00
    b. $31.25
    c. $20.10
    d. $31.00

    ANS: D

Material B Costs (Beginning Inventory and Current Period)	Equivalent Units	Average Cost per EUP
$75,950	2,450	$31.00

    DIF: Moderate OBJ: 6-2,6-3

91. Refer to Cherub Company Assuming a FIFO method of process costing, compute the average cost per EUP for conversion.
    a. $45.50
    b. $45.00
    c. $43.03
    d. $47.59

    ANS: B

Conversion Costs (Current Period)	Equivalent Units	Average Cost per EUP
$98,100	2,180	$45.00

    DIF: Moderate OBJ: 6-2,6-4

92. Refer to Cherub Company Assuming a weighted average method of process costing, compute the average cost per EUP for conversion.
    a. $39.90
    b. $45.00
    c. $43.03
    d. $47.59

    ANS: A

Conversion Costs (Beginning WIP and Current Period)	Equivalent Units	Average Cost per EUP
$98,100 + $5,640	2,600	$39.90

    DIF: Moderate OBJ: 6-2,6-3

Talmidge Company

The following information is available for Talmidge Company for the current year:

Beginning Work in Process (75% complete)	14,500 units	**Costs of Beginning Work in Process:**	
Started	75,000 units	Material	$25,100
Ending Work in Process (60% complete)	16,000 units	Conversion	50,000
Abnormal spoilage	2,500 units	**Current Costs:**	
Normal spoilage (continuous)	5,000 units	Material	$120,000
Transferred out	66,000 units	Conversion	300,000

All materials are added at the start of production.

93. Refer to Talmidge Company. Using weighted average, what are equivalent units for material?
    a. 82,000
    b. 89,500
    c. 84,500
    d. 70,000

    ANS: C

Materials: Weighted Average	**Units**	**% Complete**	**Eq. Units**
Beginning Work in Process	14,500	100%	14,500
+ Units Started and Completed	51,500	100%	51,500
+ Ending Work in Process	16,000	100%	16,000
+ Abnormal Spoilage	2,500	100%	2,500
Equivalent Units of Production			**84,500**

    DIF: Easy OBJ: 6-2,6-3,6-8

94. Refer to Talmidge Company. Using weighted average, what are equivalent units for conversion costs?
    a. 80,600
    b. 78,100
    c. 83,100
    d. 75,600

    ANS: B

Conversion: Weighted Average	**Units**	**% Complete**	**Eq Units**
Beginning Work in Process	14,500	100%	14,500
+ Units Started and Completed	51,500	100%	51,500
+ Ending Work in Process	16,000	60%	9,600
+ Abnormal Spoilage	2,500	100%	2,500
Equivalent Units of Production			**78,100**

    DIF: Easy OBJ: 6-2,6-3,6-8

95. Refer to Talmidge Company. What is the cost per equivalent unit for material using weighted average?
    a. $1.72
    b. $1.62
    c. $1.77
    d. $2.07

    ANS: A

Weighted Average: Materials				
Beginning	$ 25,100			
Current Period	120,000			
	145,100	÷ 84,500 =	**$**	**1.72**
		units	per unit	

    DIF: Moderate OBJ: 6-2,6-3

96. Refer to Talmidge Company. What is the cost per equivalent unit for conversion costs using weighted average?
    a. $4.62
    b. $4.21
    c. $4.48
    d. $4.34

    ANS: C

Weighted Average: Conversion				
Beginning	$ 50,000			
Current Period	300,000			
	350,000	÷ 78,100 =	**$**	**4.48**
		units	per unit	

    DIF: Moderate OBJ: 6-2,6-3

97. Refer to Talmidge Company. What is the cost assigned to normal spoilage using weighted average?
    a. $31,000
    b. $15,500
    c. $30,850
    d. None of the responses are correct

    ANS: D

No costs are assigned to normal, continuous spoilage. Higher costs are assigned to good units produced.

    DIF: Easy OBJ: 6-8

98. Refer to Talmidge Company. Assume that the cost per EUP for material and conversion are $1.75 and $4.55, respectively. What is the cost assigned to ending Work in Process?
    a. $100,800
    b. $87,430
    c. $103,180
    d. $71,680

    ANS: D

Equivalent Units	**Cost per Equivalent Unit**	**Total**
16,000	$1.75	$28,000
9,600	$4.55	$43,680
		$71,680

    DIF: Easy OBJ: 6-2,6-3

99. Refer to Talmidge Company. Using FIFO, what are equivalent units for material?
    a. 75,000
    b. 72,500
    c. 84,500
    d. 70,000

    ANS: D

Materials: FIFO			
Beginning Work in Process	-	0%	-
+ Units Started and Completed	51,500	100%	51,500
+ Ending Work in Process	16,000	100%	16,000
+ Abnormal Spoilage	2,500	100%	2,500
Equivalent Units of Production			**70,000**

    DIF: Easy OBJ: 6-2,6-4,6-8

100. Refer to Talmidge Company. Using FIFO, what are equivalent units for conversion costs?
    a. 72,225
    b. 67,225
    c. 69,725
    d. 78,100

    ANS: B

Conversion: FIFO			
Beginning Work in Process	14,500	25%	3,625
+ Units Started and Completed	51,500	100%	51,500
+ Ending Work in Process	16,000	60%	9,600
+ Abnormal Spoilage	2,500	100%	2,500
Equivalent Units of Production			**67,225**

    DIF: Easy OBJ: 6-2,6-3,6-8

101. Refer to Talmidge Company. Using FIFO, what is the cost per equivalent unit for material?
    a. $1.42
    b. $1.66
    c. $1.71
    d. $1.60

    ANS: C

FIFO: Materials				
Current Period	$ 120,000			
	120,000	÷ 70,000 =	**$**	**1.71**
		units	per unit	

    DIF: Easy OBJ: 6-2,6-4

102. Refer to Talmidge Company. Using FIFO, what is the cost per equivalent unit for conversion costs?
a. $4.46
b. $4.15
c. $4.30
d. $3.84

ANS: A

FIFO: Conversion				
Current Period	$ 300,000			
	300,000 ÷ 67,225 =		**$**	**4.46**
		units	per unit	

DIF: Easy OBJ: 6-2,6-4

103. Refer to Talmidge Company. Assume that the FIFO EUP cost for material and conversion are $1.50 and $4.75, respectively. Using FIFO what is the total cost assigned to the units transferred out?
a. $414,194
b. $339,094
c. $445,444
d. $396,975

ANS: A

Transferred Out Units: FIFO			**Equiv Units**	**Cost per Equiv Unit**	**Total**
Beginning Work in Process					75,100
+ Completion of Beginning Inventory		(14,500 * 25%)	3,625	4.75	17,219
+Units Started and Completed			51,500	6.25	321,875
Equivalent Units of Production					**414,194**

DIF: Difficult OBJ: 6-2,6-4

Bowman Company

Bowman Company has the following information for July:

Units started	100,000	units
Beginning Work in Process: (35% complete)	20,000	units
Normal spoilage (discrete)	3,500	units
Abnormal spoilage	5,000	units
Ending Work in Process: (70% complete)	14,500	units
Transferred out	97,000	units
Beginning Work in Process Costs:		
Material	$15,000	
Conversion	10,000	

All materials are added at the start of the production process. Bowman Company inspects goods at 75 percent completion as to conversion.

104. Refer to Bowman Company. What are equivalent units of production for material, assuming FIFO?
a. 100,000
b. 96,500
c. 95,000
d. 120,000

ANS: A

Materials: FIFO			
Beginning Work in Process	-	0%	-
+ Units Started and Completed	77,000	100%	77,000
+ Normal Spoilage--Discrete	3,500	100%	3,500
+ Abnormal Spoilage	5,000	100%	5,000
+ Ending Work in Process	14,500	100%	14,500
Equivalent Units of Production			**100,000**

DIF: Moderate OBJ: 6-2,6-4,6-8

105. Refer to Bowman Company. What are equivalent units of production for conversion costs, assuming FIFO?
a. 108,900
b. 103,900
c. 108,650
d. 106,525

ANS: D

Conversion: FIFO			
Beginning Work in Process	20,000	65%	13,000
+ Units Started and Completed	77,000	100%	77,000
+Normal Spoilage--Discrete	3,500	75%	2,625
+ Abnormal Spoilage	5,000	75%	3,750
+ Ending Work in Process	14,500	70%	10,150
Equivalent Units of Production			**106,525**

DIF: Moderate OBJ: 6-2,6-4,6-8

106. Refer to Bowman Company. Assume that the costs per EUP for material and conversion are $1.00 and $1.50, respectively. What is the amount of the period cost for July using FIFO?
a. $0
b. $9,375
c. $10,625
d. $12,500

ANS: C

Abnormal spoilage is a period cost.		
Materials	5,000 * $1.00/unit	$5,000
Conversion Costs	3,750 * $1.50/unit	5,625
Total Abnormal Spoilage		$10,625

DIF: Moderate OBJ: 6-2,6-8

107. Refer to Bowman Company. Assume that the costs per EUP for material and conversion are $1.00 and $1.50, respectively. Using FIFO, what is the total cost assigned to the transferred-out units (rounded to the nearest dollar)?
a. $245,750
b. $244,438
c. $237,000
d. $224,938

ANS: B

Transferred Out Units: FIFO				
Beginning Work in Process				25,000
+ Completion of Beginning Inventory	(20,000 * 65%)	13,000	1.50	19,500
+ Units Started and Completed		77,000	2.50	192,500
+Normal Spoilage--Discrete-Materials		3,500	1.00	3,500
+Normal Spoilage--Discrete-Conversion		2,625	1.50	3,938
Equivalent Units of Production				**244,438**

DIF: Difficult OBJ: 6-2,6-4,6-8

108. Refer to Bowman Company. What are equivalent units of production for material assuming weighted average is used?
a. 107,000
b. 116,500
c. 120,000
d. 115,000

ANS: C

Materials: Weighted Average			
Beginning Work in Process	20,000	100%	20,000
+ Units Started and Completed	77,000	100%	77,000
+ Normal Spoilage--Discrete	3,500	100%	3,500
+ Abnormal Spoilage	5,000	100%	5,000
+ Ending Work in Process	14,500	100%	14,500
Equivalent Units of Production			**120,000**

DIF: Easy OBJ: 6-2,6-3,6-8

109. Refer to Bowman Company. What are equivalent units of production for conversion costs assuming weighted average is used?
a. 113,525
b. 114,400
c. 114,775
d. 115,650

ANS: A

Conversion: Weighted Average			
Beginning Work in Process	20,000	100%	20,000
+ Units Started and Completed	77,000	100%	77,000
+Normal Spoilage--Discrete	3,500	75%	2,625
+ Abnormal Spoilage	5,000	75%	3,750
+ Ending Work in Process	14,500	70%	10,150
Equivalent Units of Production			**113,525**

DIF: Easy OBJ: 6-2,6-3,6-8

110. Refer to Bowman Company. Assume that the costs per EUP for material and conversion are $1.00 and $1.50, respectively. What is the cost assigned to normal spoilage, using weighted average, and where is it assigned?

	Value	Assigned To
a.	$7,437.50	Units transferred out and Ending Inventory
b.	$7,437.50	Units transferred out
c.	$8,750.00	Units transferred out and Ending Inventory
d.	$8,750.00	Units transferred out

ANS: B

Equivalent Units	Cost per Equivalent Unit	Total
3,500	$1.00	$3,500.00
2,625	$1.50	3,937.50
		$7,437.50

This amount is transferred out.

DIF: Easy OBJ: 6-2,6-3,6-8

111. Refer to Bowman Company. Assume that the costs per EUP for material and conversion are $1.00 and $1.50, respectively. Assuming that weighted average is used, what is the cost assigned to ending inventory?

a. $29,725.00
b. $37,162.50
c. $38,475.00
d. $36,250.00

ANS: A

Ending Inventory: Weighted Average			
Materials	14,500	$1.00	$ 14,500.00
Conversion (14,500 * 70%)	10,150	1.50	15,225.00
Total			**$ 29,725.00**

DIF: Easy OBJ: 6-2,6-3

Jones Company

The following information is available for Jones Company for April:

Started this month	80,000	units
Beginning WIP		
(40% complete)	7,500	units
Normal spoilage (discrete)	1,100	units
Abnormal spoilage	900	units
Ending WIP		
(70% complete)	13,000	units
Transferred out	72,500	units
Beginning Work in Process Costs:		
Material	$10,400	
Conversion	13,800	
Current Costs:		
Material	$120,000	
Conversion	350,000	

All materials are added at the start of production and the inspection point is at the end of the process.

112. Refer to Jones Company. What are equivalent units of production for material using FIFO?
a. 80,000
b. 79,100
c. 78,900
d. 87,500

ANS: A

Materials: FIFO					
Beginning Work in Process			-	0%	-
+ Units Started and Completed			65,000	100%	65,000
+ Ending Work in Process			13,000	100%	13,000
+ Normal Spoilage (discrete)			1,100	100%	1,100
+ Abnormal Spoilage			900	100%	900
Equivalent Units of Production					**80,000**

DIF: Moderate OBJ: 6-2,6-4,6-8

113. Refer to Jones Company. What are equivalent units of production for conversion costs using FIFO?
a. 79,700
b. 79,500
c. 81,100
d. 80,600

ANS: D

Conversion: FIFO			**Units**	**% Complete**	**EUP**
Beginning Work in Process			7,500	60%	4,500
+ Units Started and Completed			65,000	100%	65,000
+ Ending Work in Process			13,000	70%	9,100
+ Normal Spoilage (discrete)			1,100	100%	1,100
+ Abnormal Spoilage			900	100%	900
Equivalent Units of Production					**80,600**

DIF: Moderate OBJ: 6-2,6-4,6-8

114. Refer to Jones Company. What are equivalent units of production for material using weighted average?
a. 86,600
b. 87,500
c. 86,400
d. 85,500

ANS: B

Materials: Weighted Average			**Units**	**% Complete**	**EUP**
Beginning Work in Process			7,500	100%	7,500
+ Units Started and Completed			65,000	100%	65,000
+ Ending Work in Process			13,000	100%	13,000
+ Normal Spoilage (discrete)			1,100	100%	1,100
+ Abnormal Spoilage			900	100%	900
Equivalent Units of Production					**87,500**

DIF: Easy OBJ: 6-2,6-3,6-8

115. Refer to Jones Company. What are equivalent units of production for conversion costs using weighted average?
a. 83,600
b. 82,700
c. 82,500
d. 81,600
ANS: A

Conversion: FIFO			**Units**	**% Complete**	**EUP**
Beginning Work in Process			7,500	100%	7,500
+ Units Started and Completed			65,000	100%	65,000
+ Ending Work in Process			13,000	70%	9,100
+ Normal Spoilage (discrete)			1,100	100%	1,100
+ Abnormal Spoilage			900	100%	900
Equivalent Units of Production					**83,600**

DIF: Easy OBJ: 6-2,6-3,6-8

116. Refer to Jones Company. What is cost per equivalent unit for material using FIFO?
a. $1.63
b. $1.37
c. $1.50
d. $1.56

ANS: C

FIFO: Materials					
		Current Period	$ 120,000		
			120,000	÷ 80,000 =	**$ 1.50**
				units	per unit

DIF: Easy OBJ: 6-2,6-4

117. Refer to Jones Company. What is cost per equivalent unit for conversion costs using FIFO?
a. $4.00
b. $4.19
c. $4.34
d. $4.38

ANS: C

FIFO: Conversion					
		Current Period	$ 350,000		
			350,000	÷ 80,600 =	**$ 4.34**
				units	per unit

DIF: Easy OBJ: 6-2,6-4

118. Refer to Jones Company. What is cost per equivalent unit for material using weighted average?
a. $1.49
b. $1.63
c. $1.56
d. $1.44

ANS: A

Weighted Average: Materials					
		Beginning	$ 10,400		
		Current Period	120,000		
			130,400	÷ 87,500 =	**$ 1.49**
				units	per unit

DIF: Easy OBJ: 6-2,6-3

119. Refer to Jones Company. What is cost per equivalent unit for conversion costs using weighted average?
a. $4.19
b. $4.41
c. $4.55
d. $4.35

ANS: D

Weighted Average: Conversion					
		Beginning	$ 13,800		
		Current Period	350,000		
			363,800	÷ 83,600 =	**$ 4.35**
				units	per unit

DIF: Easy OBJ: 6-2,6-3

120. Refer to Jones Company. What is the cost assigned to ending inventory using FIFO?
a. $75,920
b. $58,994
c. $56,420
d. $53,144

ANS: B

Ending Inventory: FIFO					
Materials			13,000	$ 1.50	$ 19,500.00
Conversion (13,000 * 70%)			9,100	4.34	39,494.00
Total					**$ 58,994.00**

DIF: Moderate OBJ: 6-2,6-4

121. Refer to Jones Company. What is the cost assigned to abnormal spoilage using FIFO?
a. $1,350
b. $3,906
c. $5,256
d. $6,424

ANS: C

Abnormal Spoiled Units	Price per Equivalent Unit	Total
900	$5.84	$5,256

DIF: Moderate OBJ: 6-2,6-4,6-8

122. Refer to Jones Company. What is the cost assigned to normal spoilage and how is it classified using weighted average?
a. $6,193 allocated between WIP and Transferred Out
b. $6,424 allocated between WIP and Transferred Out
c. $6,193 assigned to loss account
d. $6,424 assigned to units Transferred Out

ANS: D

Normal Spoiled Units	Price per Equivalent Unit	Total
1,100	$5.84	$6,424
		Transferred Out

DIF: Moderate OBJ: 6-2,6-4,6-8

123. Refer to Jones Company. What is the total cost assigned to goods transferred out using weighted average?
a. $435,080
b. $429,824
c. $428,656
d. $423,400

ANS: B

Goods Transferred Out	Price per Equivalent Unit	Total
73,600	$5.84	$429,824

DIF: Difficult OBJ: 6-2,6-3

SHORT ANSWER

1. Discuss how spoilage is treated in EUP computations.

   ANS:
   If spoilage is normal and continuous, the calculations for EUP do not include this spoilage (method of neglect), and the good units simply absorb the cost of such spoilage. If spoilage is normal and discrete, the equivalent units are used in the EUP calculations, and the spoilage cost is assigned to all units that passed through the inspection point during the current period. If the spoilage is abnormal and either discrete or continuous, the equivalent units are used in EUP calculations and costed at the cost per EUP; the total cost is then assigned to a loss account.

   DIF: Moderate OBJ: 6-8

2. Discuss the assignment of costs to transferred-out inventories in both process costing methods.

   ANS:
   The assignment of costs in a process costing system first involves determining total production costs. These costs are then assigned to units completed and transferred out during the period and to the units in Work in Process Inventory at the end of the period. To assign costs, the cost per equivalent unit must be established using either the FIFO or weighted average method. The cost per EUP is then multiplied by the number of equivalent units in the component being costed. Transferred-out costs using the weighted average method are computed as the number of units transferred times the total price per equivalent unit. When using FIFO, transferred-out units are computed as follows: the costs in beginning WIP are added to the current period costs to complete the units which sums to the total cost of beginning WIP; the units started and completed are priced at current period costs; the total of the costs of beginning inventory and units started and completed are then transferred out.

   DIF: Moderate OBJ: 6-3,6-4

3. Discuss process costing in a multi-department atmosphere.

   ANS:
   When a business has more than one department in its production process, products are transferred from Department A to Department B and so on. As the products are transferred from department to department so, too, must the costs be transferred. When products are transferred, the units and costs are treated as input material in the next department. The new department may add additional material or may simply add conversion costs and finish the products. The total cost of the products is a cumulative total from all departments within the process.

   DIF: Moderate OBJ: 6-3

4. Discuss standard costing as used in conjunction with process costing.

   ANS:
   When standard costing is used in conjunction with process costing, the costing procedure is simplified. Standard costing eliminates the calculation in each new period of a new production cost because the standards are established as on going norms for (at least) a one-year period of time. Standard costing in a process costing system is essentially a FIFO system that permits variances to be recognized during the period.

   DIF: Moderate OBJ: 6-5

5. What are two alternative calculations that can be used to either check an equivalent units answer or to obtain the answer initially?

   ANS:
   One alternative method of calculating equivalent units for weighted average is to determine units transferred out and add to that the equivalent units of ending work in process. Another alternative method of calculating equivalent units for FIFO is to determine equivalent units of production under weighted average and subtract the beginning work in process equivalent units that were completed in the last period. Both of these methods may be used to "check" original answers.

   DIF: Moderate OBJ: 6-7

6. Discuss how spoilage is treated in EUP computations.

   ANS:
   If spoilage is normal and continuous, the calculations for EUP do not include this spoilage (method of neglect), and the good units simply absorb the cost of such spoilage. If spoilage is normal and discrete, the equivalent units are used in the EUP calculations, and the spoilage cost is assigned to all units that passed through the inspection point during the current period. If the spoilage is abnormal and either discrete or continuous, the equivalent units are used in EUP calculations and costed at the cost per EUP; the total cost is then assigned to a loss account.

   DIF: Moderate OBJ: 6-8

7. Discuss why units are lost during production.

   ANS:
   In most production processes, losses are anticipated to a certain degree. Losses may be classified as normal and abnormal depending on management's expectations. A normal loss is one that is expected, while an abnormal loss is one that exceeds the normal loss. The losses may result in spoiled or defective units. Spoiled units cannot be economically reworked; defective units can be. Losses can occur on a continuous or a discrete basis. Quality control points are established at the end of and/or within the process to inspect goods and remove from further processing those units that are either spoiled or defective.

   DIF: Moderate OBJ: 6-8

PROBLEM

Landers Company

Landers Company has the following information available for May:

Beginning Work in Process Inventory (25% complete as to conversion)	10,000	units
Started	120,000	units
Ending Work in Process Inventory (30% complete as to conversion)	30,000	units

Beginning Work in Process Inventory Costs:	
Material	$ 2,100
Conversion	2,030
Current Period Costs:	
Material	$ 33,000
Conversion	109,695

All material is added at the start of production and all products completed are transferred out.

1. Refer to Landers Company. Prepare an equivalent units schedule using the (a) FIFO and (b) weighted average method.

ANS:

Landers Company
Schedule of Equivalent Units for
Fifo and Weighted Average
May 31, 20X5

	FIFO		**Weighted Average**
Beginning Work In Process	10,000	Beginning Work In Process	10,000
Units Started	120,000	Units Started	120,000
Units to Acct. For	130,000	Units to Acct. For	130,000
Beginning Work In Process	10,000	Transferred Out	100,000
Started & Completed	90,000	Ending Work in Process	30,000
Ending Work in Process	30,000	Units Accounted For	130,000
Units Accounted For	130,000		

(a) **FIFO**

	Mat.	CC
BWIP	0	7,500
S & C	90,000	90,000
EWIP	30,000	9,000
EUP	120,000	106,500

(b) **Weighted Average**

	Mat.	CC
TO	100,000	100,000
EI	30,000	9,000
EUP	130,000	109,000

DIF: Moderate OBJ: 6-3,6-4

2. Refer to Landers Company. Prepare a schedule showing the computation for cost per equivalent unit assuming the (a) FIFO and (b) weighted average method.

ANS:

Landers Company
Schedule of Average Cost Per Unit
FIFO and Weighted Average
May 31, 20X5

(a) **FIFO**			(b) **Weighted Average**	
	Mat.	CC	Mat.	CC
Costs	$33,000	$109,695	$ 35,100	$111,725
Eq Units	120,000	106,500	130,000	109,000
	$.275/eq unit	$ 1.03/eq unit	$ .27/eq unit	$ 1.025/eq unit
Total cost/eq. unit		**$ 1.305/eq unit**		**$ 1.295/eq unit**

DIF: Moderate OBJ: 6-3,6-4

3. Refer to Landers Company. Prepare a schedule showing the assignment of costs assuming the (a) FIFO and (b) weighted average method.

ANS:

Landers Company
Schedule of Assigned Costs
FIFO and Weighted Average
May 31, 20X5

(a) FIFO	
Beginning Work in Process	$ 4,130
To complete (7,500 x $1.03) =	7,725
	$ 11,855
Started and Completed	
90,000 x $1.305 =	117,450
Total costs transferred out	$129,305
Ending Work in Process	
30,000 x $ .275 =	$ 8,250
9,000 x $1.03 =	9,270
	$ 17,520
Total costs accounted for	$146,825
(b) Weighted Average	
Completed	
100,000 x $1.295 =	$129,500
Ending Work in Process	
30,000 x $ .27 =	$ 8,100
9,000 x $1.025 =	9,225
	$ 17,325
Total costs accounted for	$146,825

DIF: Difficult OBJ: 6-3,6-4

4. The Sweet Temptations Company has two processing departments, Cooking and Packaging. Ingredients are placed into production at the beginning of the process in Cooking, where they are formed into various shapes. When finished, they are transferred into Packaging, where the candy is placed into heart and tuxedo boxes and covered with foil. All material added in Packaging is considered as one material for convenience. Since the boxes contain a variety of candies, they are considered partially complete until filled with the appropriate assortment. The following information relates to the two departments for February 20X7:

Cooking Department:		
Beginning WIP (30% complete as to conversion)	4,500	units
Units started this period	15,000	units
Ending WIP (60% complete as to conversion)	2,400	units
Packaging Department:		
Beginning WIP (90% complete as to material, 80% complete as to conversion)	1,000	units
Units started during period	?	
Ending WIP (80% complete as to material and 80% complete as to conversion)	500	units

a. Determine equivalent units of production for both departments using the weighted average method.
b. Determine equivalent units of production for both departments using the FIFO method.

ANS:

a. **Cooking Department**

	Materials	Conversion Costs
Transferred Out	17,100	17,100
Ending Work in Process	2,400	1,440
TOTAL EUP	19,500	18,540

Packaging Department

	Transferred In	Materials.	Conversion Costs
Transferred Out	17,600	17,600	17,600
Ending Work in Process	500	400	400
TOTAL EUP	18,100	18,000	18,000

b. **Cooking Department**

	Materials	Conversion Costs
Beginning Work in Process	0	3,150
Transferred from Cooking	12,600	12,600
Ending Work in Process	2,400	1,440
TOTAL EUP	15,000	17,190

Packaging Department

	Transferred In	Materials	Conversion Costs
Beginning Work in Process	0	100	200
Transferred from Cooking	16,600	16,600	16,600
Ending Work in Process	500	400	400
TOTAL EUP	17,100	17,100	17,200

DIF: Difficult OBJ: 6-3,6-4

5. The following costs were accumulated by Department 2 of Hughes Company during April:

	Cost Transferred from Dept. 1	Material	Conversion Costs	Total
Beginning Inventory	$ 17,050		$ 5,450	$ 22,500
Current Period Cost	184,000	$ 34,000	104,000	322,000
	$ 201,050	$ 34,000	$ 109,450	$344,500

Production for April in Department 2 (in units):

WIP-April 1	2,000	60% complete
Complete period transferred	20,000	
WIP-April 30	5,000	40% complete

Materials are not added in Department 2 until the very end of processing Department 2.

Required: Compute the cost of units completed and the value of ending WIP for:

a. Weighted average inventory assumption

b. FIFO inventory assumption

ANS:

a. Weighted average inventory assumption

	Dept 1	MAT	CC
Complete	20,000	20,000	20,000
Eq-End WIP	5,000	0	2,000
EP-WA	25,000	20,000	22,000

Unit Cost	$201,050 / 25,000 = $8.042	$34,000 / 20,000 = $1.70	$109,450 / 22,000 = $4.975	= $14.717

End WIP
Dept 1 = 5,000 x $8.042 = $40,210
CC = 2,000 units x $4.975 = 9,950
$50,160

COGM = $344,500 - $50,160 = $294,340

b. FIFO inventory assumption

	Dept 1	MAT	CC
Complete	20,000	20,000	20,000
Eq-End WIP	5,000	0	2,000
- Eq-Begin	(2,000)	0	(1,200)
EP-WA	23,000	20,000	20,800

Unit Cost	$184,000 / 23,000 = $8.00	$34,000 / 20,000 = $1.70	$104,000 / 20,800 = $5.00	= $14.70

End WIP	Dept 1 = 5,000 units x $8.00	= $40,000
	CC = 2,000 units x $5.00	= 10,000
		$50,000

COGM = $344,500 - $50,000 = $294,500

DIF: Moderate OBJ: 6-3,6-4

6. The formula for a chemical compound requires one pound of Chemical X and one pound of Chemical Y. In the simplest sense, one pound of Chemical X is processed in Department A and transferred to Department B for further processing where one pound of Chemical Y is added when the process is 50 percent complete. When the processing is complete in Department B, the finished compound is transferred to finished goods. The process is continuous, operating 24 hours a day.

   Normal spoilage occurs in Department A. Five percent of material is lost in the first few seconds of processing. No spoilage occurs in Department B.

   The following data are available for the month of August 20X6:

	Dept. A	Dept. B
Units in process, August 1	8,000	10,000
Stage of completion of beginning inventory	3/4	3/10
Units started or transferred in	50,000	?
Units transferred out	46,500	?
Units in process, August 31	?	?
Stage of completion of ending inventory	1/3	1/5
Units of Chemical Y added in Department B		44,500

   Required:

   a. Prepare a schedule showing finished equivalents for Chemical X and for conversion cost for Department A using the FIFO method.
   b. Determine for Department B the number of units of good product completed during August and the number of units in process on August 31.
   c. Prepare a schedule for Department B showing finished equivalents for preceding department cost, cost of Chemical Y, and conversion cost using the FIFO method.

ANS:

a.

Materials	Conversion Costs
46,500	46,500
9,000	3,000
(8,000)	(6,000)
47,500	43,500

c.

PD	Mat	CC
44,500	44,500	44,500
12,000	0	2,400
(10,000)	0	(3,000)
46,500	44,500	43,900

b. Since the material in the second department goes in at the 50 percent point and the ending WIP inventory is only at the 20 percent point, units complete is the same as the equivalents of material 44,500, given that units started plus units in beginning WIP are equal to units complete plus ending WIP 10,000 + 46,500 - 44,500 = 12,000 units in ending WIP.

DIF: Moderate OBJ: 6-3,6-4

7. Quigley Company manufactures a specialized product. Department 2 adds new material to the units received from Department 1 at the end of process. A normal loss occurs early in processing. Production and cost data for Department 2 for the month of September are as follows:

Production record (in units):	
In process, September 1-75% complete for processing cost	4,000
Received from Department 1	20,000
Completed and transferred to finished goods	16,000
Lost in processing (normal)	2,000
In process, September 30-2/3 complete for process cost	6,000

Cost Record:		
Work in process inventory, September 1:		
Preceding department cost	$ 620	
Processing cost	2,000	$2,620
Cost from preceding department in September		1,800
Material cost for September		4,800
Processing cost for September		10,200

Required: Determine the following for Department 2 under (a) weighted average the method of costing and (b) the FIFO method of costing: (1) unit costs for each cost component, (2) cost of production transferred to finished goods, (3) cost of work in process inventory of September 30.

ANS:

Equivalent production	TI	Material	Conv. cost
Units complete	16,000	16,000	16,000
+ Equiv. ending WIP	6,000	0	4,000
= Equiv. prod. average	22,000	16,000	20,000
- Equiv. begin. WIP	(4,000)	0	(3,000)
= Equiv. prod. FIFO	18,000	16,000	17,000

Unit Cost Average	Unit Cost FIFO
TI = $620 + 1,800	TI = $1,800

22,000 = $0.11 18,000 = $0.10

Mat = $4,800 / 16,000 = $0.30 Mat = $4,800 / 16,000 = $0.30

CC = ($2,000 + 10,200) / 20,000 = $0.61 CC = $10,200 / 17,000 = $0.60

End. WIP-WA			End. WIP-FIFO	
PD	6,000 x $0.11 =	$ 660.00	6,000 x $0.10 =	$ 600.00
CC	4,000 x $0.61 =	2,440.00	4,000 x $0.60 =	2,400.00
		$3,100.00		$3,000.00

Cost of Goods Complete

WA	FIFO
$19,420 - 3,100 = $16,320.00	$19,420 - 3,000 = $16,420.00

DIF: Moderate OBJ: 6-3,6-4 MSC: 15-20 min

8. Copperfield Manufacturing employs a weighted average process costing system for its products. One product passes through three departments (Molding, Assembly, and Finishing) during production. The following activity took place in the Finishing Department during April 20x6.

Units in beginning inventory	4,200
Units transferred in from Assembly	42,000
Units spoiled	2,100
Good units transferred out	33,600

The costs per equivalent unit of production for each cost failure area as follows:

Cost of prior departments	$5.00
Raw material	1.00
Conversion	3.00
Total cost per EUP	$9.00

Raw material is added at the beginning of the Finishing process without changing the number of units being processed. Work in process inventory was 40 percent complete as to conversion on April 30. All spoilage was discovered at final inspection. Of the total units spoiled, 1,680 were within normal limits.

Required:
a. Calculate the equivalent units of production
b. Determine the cost of units transferred out of Finishing
c. Determine the cost of ending Work in Process Inventory
d. The portion of the total transferred in cost associated with beginning Work in Process Inventory amounted to $18,900. What is the current period cost that was transferred in from Assembly to Finishing?
e. Determine the cost associated with abnormal spoilage for the month.

ANS:
a.

	TI	Mat	CC
Complete	33,600	33,600	33,600
+ Equiv WIP	10,500	10,500	4,200
+ Normal Sp	1,680	1,680	1,680
+ Abnor Sp	420	420	420
	46,200	46,200	39,900

b. 33,600 x $9	$302,400	TC = 46,200 x $5	$231,000
1,680 x $9	15,120	46,200 x $1	46,200
	$317,520	39,900 x $3	119,700
			$396,900

c. 10,500 x $5	$52,500
10,500 x $1	10,500
4,200 x $3	12,600
	$75,600

COGM = $396,900 - 75,600 - 3,780 = $317,520

d. $5 = $18,900 + X
46,200

X = $231,000 - 18,900 = $212,100

e. ABN = 420 x $9 = $3,780
420 x $9 = $3,780

DIF: Moderate OBJ: 6-3,6-8

9. Ashcroft Industries manufactures wood furniture. In the Lamination Department, varnish is added when the goods are 60 percent complete as to overhead. The units that are spoiled during processing are found upon inspection at the end of production. Spoilage is considered discrete.

Production Data for May 20X8

Beginning inventory (80% complete as to labor, 70% complete as to overhead)	1,000	units
Transferred in during month	7,450	units
Ending inventory (40% complete as to labor, 20% complete as to overhead)	1,500	units
Normal spoilage (found during final quality inspection)	100	units
Abnormal spoilage-found at 30% completion of direct labor and 15% of conversion; the sanding machine was misaligned and scarred the chairs	200	units

All other units were transferred to finished goods

Cost Data for May 20X8

Beginning work in process inventory:		
Prior department costs	$7,510	
Varnish	950	
Direct labor	2,194	
Overhead	5,522	$ 16,176
Current period costs:		
Prior department costs	$68,540	
Varnish	7,015	
Direct labor	23,000	
Overhead	56,782	155,337
Total costs to account for		$171,513

Required: Determine the proper disposition of the May 20X8 costs for the Laminating Department using the weighted average method.

ANS:

	TI	MAT	DL	MOH
Complete	6,650	6,650	6,650	6,650
+ end	1,500	0	600	300
+ normal	100	100	100	100
+ abnormal	200	0	60	30
	8,450	6,750	7,410	7,080
Unit Cost	$\frac{\$76,050}{8,450} = \$9$	$\frac{\$7,965}{6,750} = \$1.18$	$\frac{\$25,194}{7,410} = \$3.40$	$\frac{\$62,304}{7,080} = \$8.80$

End WIP

DL	600 x $3.40	=	$ 2,040
MOH	300 x $8.80	=	2,640
TI	1,500 x $9.00	=	13,500
			$18,180

Abnormal Loss	60 x $3.40	=	$ 204
DL	30 x $8.80	=	264
MOH	200 x $9.00	=	1,800
TI			$ 2,268

COGM = $171,513 - 18,180 - 2,268 = $151,065

DIF: Moderate OBJ: 6-3,6-8

10. Consider the following data for a cooking department for the month of January:

	Physical Units
Work in process, beginning inventory*	11,000
Started during current period	74,000
To account for	85,000
Good units completed and transferred out during current period:	
From beginning work in process	11,000
Started and completed	50,000
Good units completed	61,000
Spoiled units	8,000
Work in process, ending inventory~	16,000
Accounted for	85,000

*Direct material, 100% complete; conversion costs, 25% complete
~Direct material, 100% complete; conversion costs, 75% complete
Inspection occurs when production is 100 percent completed. Normal spoilage is 11 percent of good units completed and transferred out during the current period.

The following cost data are available:

Work in process, beginning inventory:		
Direct material	$220,000	
Conversion costs	30,000	$ 250,000
Costs added during current period:		
Direct material		1,480,000
Conversion costs		942,000
Costs to account for		$2,672,000

Required: Prepare a detailed cost of production report. Use the FIFO method. Distinguish between normal and abnormal spoilage.

ANS:

Normal Sp = 11% x 61,000 = 6,710 units FIFO

Abnormal Sp = 8,000 - 6,710 = 1,290 units

	Mat	CC
Complete	61,000	61,000
+ End	16,000	12,000
+ Ab Sp	1,290	1,290
- Ave	78,290	74,290
- Beg	(11,000)	(2,750)
FIFO	67,290	71,540

Mat = $\frac{\$1,480,000}{67,290}$ = $22.00

CC = $\frac{\$942,000}{71,540}$ = 13.17

$35.17

WIP

Material	16,000 x $22.00	$352,000
CC	12,000 x $13.17	158,040
		$510,040
Loss = 1,290 x $35.17		45,369

COGM = $2,672,000 - 510,040 - 45,369 = $2,116,591

DIF: Moderate OBJ: 6-3,6-8

11. Lumberton Industries has two departments. Department 1 uses FIFO costing and Department 2 uses weighted average.

Units are introduced into the process in Department 1 (this is the only material added in Department 1). Spoilage occurs continuously through the department and normal spoilage should not exceed 10 percent of the units started.

Department 2 adds material (packaging) at the 75 percent completion point; this material does not cause an increase in the number of units being processed. A quality control inspection takes place when the goods are 80 percent complete. Spoilage should not exceed 5 percent of the units transferred in from Department 1.

The following production cost data are applicable for operations for August 20X7:

Department 1 Production Data			
Beginning inventory (65% complete)		1,000	
Units started		25,000	
Units completed		22,000	
Units in ending inventory (40% complete)		2,800	
Department 1 Cost Data			
Beginning inventory:			
Material	$ 1,550		
Conversion	2,300		$ 3,850
Current period:			
Material	$38,080		
Conversion	78,645		116,725
Total costs to account for			$120,575
Department 2 Production Data			
Beginning inventory (90% complete)		8,000	
Units transferred in		22,000	
Units completed		24,000	
Units in ending inventory (20% complete)		4,500	
Department 2 Cost Data			
Beginning inventory:			
Transferred in	$40,800		
Material	24,000		
Conversion	4,320		$ 69,120*
Current period:			
Transferred in	$113,700		
Material`	53,775		
Conversion	11,079		178,554
Total costs to account for			$247,674

*This may not be the same amount determined for Department 1; ignore any difference and use this figure.

Required:

a. Compute the equivalent units of production in each department.
b. Determine the cost per equivalent unit in each department and compute the cost transferred out, the cost in ending inventory, and the cost of spoilage (if necessary).

ANS:

a.
1

	Mat	CC		Mat =	$38,080 / 23,800	=	$ 1.60
Complete	22,000	22,000					
+ End WIP	2,800	1,120	(2,800 x 4)	CC =	$78,645 / 22,470	=	$ 3.50
	24,800	23,120					
- Beg WIP	(1,000)	(650)	(1,000 x .65)	End WIP =	2,800 x $1.60 1,120 x $3.50	=	$ 4,480 3.920
	23,800	22,470					$ 8,400
				COGM = $120,575 - 8,400			$112,175

b.
2

	TI	Mat	CC	Mat =	$ 77,775 / 25,500	=	$ $3.05
Complete	24,000	24,000	24,000				
+ End WIP	4,500	0	900	CC =	$ 15,399 / 26,100	=	$ $0.59
+ Normal	1,100	1,120	880				
+ Abnormal	400	400	320				
	30,000	25,500	26,100	TI =	$154,500 / 30,000	=	$ 5.15

End WIP		Abn Loss	
4,500 x $5.15	$23,175	400 x $3.05	$1,220
900 x $0.59	531	320 x $0.59	189
	$23,706	400 x $5.15	2,060
			$3,469

COGM = $247,674 - 23,706 - 3,469 = $220,499

DIF: Moderate OBJ: 6-3, 6-8

12. Orange Company manufactures a single product. All material is added at the beginning of the process.

Costs	Material	Conversion	Total
Beginning inventory	$ 30,000	$ 3,600	$ 33,600
Current period	885,120	335,088	1,220,208
Total costs	$915,120	$338,688	$1,253,808

UNITS		
Beginning inventory (30% complete-conversion)	6,000	units
Started	180,000	units
Completed	152,000	units
Ending inventory (70% complete-conversion)	20,000	units
Normal spoilage	4,800	units

Required: Find ending WIP inventory, abnormal loss, and COGM. Assume that, for conversion costs, abnormal shrinkage is 60 percent.

ANS:

	Mat	CC	
Units Complete	152,000	152,000	
+ Equivalents Ending WIP	20,000	14,000	
+ Abnormal Loss	9,200	5,520	(9,200 x .6)
= Equivalent Production-WA	181,200	171,520	
= Equivalent Begin WIP	(6,000)	(1,800)	
= Equivalent Production-FIFO	175,200	169,720	

Unit Costs:

WA		FIFO		
Mat	$915,120 / 181,200 = $5.05	Mat	$885,120 / 175,200	= $5.05
CC	$338,688 / 171,520 = $1.97	CC	$335,088 / 169,720	= $1.97

Ending WIP

Material	20,000 x $5.05	$101,000
CC	14,000 x $1.97	27,580
		$128,580

Abnormal Spoilage

Material	9,200 x $5.05	$ 46,460
CC	5,520 x $1.97	10,874
		$ 57,334

Cost of Good Transferred

1,253,808 - 128,580 - 57,334 = $1,067,894

DIF: Moderate OBJ: 6-3,6-8

13. Delightful Yogurt Company produces yogurt in two departments-Mixing and Finishing. In Mixing, all ingredients except fruit are added at the start of production. In Finishing, fruit is added and then the mixture is placed into containers. Adding the fruit to the basic yogurt mixture increases the volume transferred in by the number of gallons of fruit added. Any spoilage that occurs is in the Finishing Department. Spoilage is detected just before the yogurt is placed into containers or at the 98 percent completion point. All spoilage is abnormal.

Finishing Department

BWIP (100% fruit, 0% container, 30% CC)	5,000	gallons
Gallons transferred in	5,500	
Gallons of fruit added	1,200	
EWIP (100% fruit, 0% container, 60% CC)	1,700	gallons
Gallons transferred out	9,000	
Abnormal spoilage	1,000	

BWIP Costs:

Transferred In	$ 9,700
Fruit	10,500
CC	15,000

Current Costs:

Transferred In	12,400
Fruit	54,000
Containers	11,000
CC	98,000
Total Costs	$ 210,600

Prepare a cost of production report for October 20X5. The company uses weighted average.

ANS:

Delightful Yogurt Company
Cost Report
October 31, 20X5

BWIP	5,000			
Trans. In	5,500			
Fruit	1,200			
Acctble. For	11,700			
	TI	Fruit	Container	CC
Transferred Out	9,000	9,000	9,000	9,000
EWIP	1,700	1,700	0	1,020
Abnormal Spoilage	1,000	1,000	0	980
	11,700	11,700	9,000	11,000

Costs:

	TI	Fruit	Container	CC
BWIP	$ 9,700	$10,500	$ 0	$ 15,000
Current	12,400	54,000	11,000	98,000
	$22,100	$64,500	$11,000	$113,000
EUP	11,700	11,700	9,000	11,000
Per unit	$1.89	$5.51	$1.22	$10.27

Cost Assignment:

EWIP		
1,700 x $1.89 =	$ 3,213	
1,700 x $5.51 =	9,367	
1,020 x $10.27 =	10,475	$ 23,055
Spoilage		
1,000 x $1.89 =	$ 1,890	
1,000 x $5.51 =	5,510	
980 x $10.27 =	10,065	17,465
Transferred Out		
$210,600 - 23,055 - 17,465 =	170,080	
Total accounted for		$210,600

DIF: Moderate OBJ: 6-3,6-8

Hocking Company

The following information is available for Hocking Company for March 20X8. All materials are added at the start of production.

Beginning Work in Process: (80% complete)	8,000	units
Started	35,000	units
Normal spoilage (continuous)	6,000	units
Abnormal spoilage	2,500	units
Ending Work in Process: (55% complete)	15,000	units
Transferred out	19,500	units

Beginning Work in Process Costs:	
Material	$ 14,000
Conversion	45,000
Current Costs:	
Material	50,000
Conversion	175,000
Total Costs	$ 284,000

14. Refer to Hocking Company. Prepare a cost of production report for March using FIFO.

ANS:
BI 8,000 + Started 35,000 = Accountable for 43,000

Hocking Company
Cost Report
March 31, 20X8

		Material	CC
BWIP	8,000	0	1,600
S & C	11,500	11,500	11,500
EWIP	15,000	15,000	8,250
Norm	6,000	0	0
Abnorm.	2,500	2,500	
Acctd. For	43,000	29,000	23,850

Material: $50,000/29,000 = $1.72
Conversion Costs: $175,000/23,850 = $7.34

Cost Assignment:

Ending Work in Process		
15,000 x $1.72 =	$ 25,800	
8,250 x $7.34 =	60,555	$ 86,355
Abnormal Spoilage		
2,500 x $9.06 =		22,650
Cost Transferred Out		
$284,000 - 86,355 - 22,650 =		174,995
Total costs accounted for		$ 284,000

DIF: Moderate OBJ: 6-4,6-8

15. Refer to Hocking Company. Prepare the cost of production report assuming the weighted average method.

ANS:
BI 8,000 + Started 35,000 = Accountable for 43,000

Hocking Company
Cost Report
March 31, 20X8

		Material	CC
Transferred Out	19,500	19,500	19,500
Ending Work In Process	15,000	15,000	8,250
Normal Spoilage	6,000	0	0
Abnormal Spoilage 2,500	2,500	2,500	
Accounted For	43,000	37,000	30,250

Material: $64,000/37,000 = $1.73
Conversion Costs: $220,000/30,250 = $ 7.27

Cost Assignment:

Ending Work in Process		
15,000 x $1.73 =	$25,950	
8,250 x $7.27 =	59,978	$ 85,928
Abnormal Spoilage		
2,500 x $9.00 =		22,500
Transferred Out		
$284,000 - 85,928 - 22,500 =		175,572
Total costs accounted for		$ 284,000

DIF: Moderate OBJ: 6-3,6-8