Exercise-3 (FIFO, LIFO and average cost method in periodic inventory system)

Posted in: Inventory costing methods (exercises)

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Delta Company uses a periodic inventory system. The beginning balance of inventory and purchases made by the company during the month of July, 2016 are given below:

- July 01: Beginning inventory, 500 units @ $20 per unit.
- July 18: Inventory purchased, 800 units @ $24 per unit.
- July 25: Inventory purchased, 700 units @ $26 per unit.

Delta Company sold 1,400 units during the month of July.

Required: Compute inventory on July 31, 2016 and cost of goods sold for the month of July using following inventory costing methods:

1. First in, first out (FIFO) method
2. Last in, first out (LIFO) method
3. Average cost method

Solution:

Number of units in ending inventory:

Ending inventory = Beginning inventory + Purchases made during the month – Units sold during the month

= 500 units + *1,500 units – 1,400 units

= 600 units

*800 units + 700 units = 1,500

(1) First in, first out (FIFO) method:

a. Computation of inventory on July 31, 2016 (i, e., ending inventory) under FIFO:

Most recent cost; July 25, 2016:	
600 units @ $26.00 per unit	$ 15,600

b. Computation of cost of goods sold (COGS) for July 31, 2016 under FIFO:

Cost of units on July 1, 2016 (beginning inventory):		
500 units @ $20 per unit		$ 10,000
Add cost of units purchased during the month:		
800 units purchased @ $24 per unit	$ 19,200	
700 units purchased @ $26 per unit	$ 18,200	37,400
Total cost of units available for sale		$ 47,400
Less cost of units in ending inventory (see part a)		15,600
Total cost of 1,400 units sold during July (i.e., cost of goods sold for July, 2016)		$ 31,800

Alternatively, we can compute cost of goods sold (COGS) using earliest cost method as follows:

Earliest cost; July 01, 2016:	
500 units @ $20.00 per unit	$ 10,000
Next earliest cost; July 18, 2016:	
800 units @ $24.00 per unit	19,200
Next earliest cost; July 25, 2016:	
100 units @ $26.00 per unit	2,600
Total cost of 1,400 units sold during July (i.e., cost of goods sold for July, 2016)	$ 31,800

(2) Last in, first out (LIFO) method:

a. Computation of inventory on July 31, 2016 (i, e., ending inventory) under LIFO:

Earliest cost; July 1, 2016 (beginning inventory):	
500 units @ $20 per unit	$ 10,000
Next earliest cost; July 18, 2016:	
100 units @ $24 per unit	2,400
Total cost of 600 units in inventory on July 31, 2016 (i.e., ending inventory)	$ 12,400

b. Computation of cost of goods sold (COGS) for July 31, 2016 under LIFO:

Cost of units on July 1, 2016 (beginning inventory):		
500 units @ $20 per unit		$ 10,000
Add cost of units purchased during month:		
800 unit purchased @ $24 per unit	$ 19,200	
700 unit purchased @ $26 per unit	$ 18,200	37,400
Total cost of units available for sale		$ 47,400
Less cost of units in ending inventory		12,400
Total cost of 1,400 units sold during July (i.e., cost of goods sold for July, 2016)		$ 35,000

Alternatively, we can compute cost of goods sold (COGS) using most recent cost method as follows:

Most recent cost; July 25, 2016:	
700 units @ $26 per unit	$ 18,200
Next most recent cost; July 18, 2016:	
700 units @ $24 per unit	16,800
Total cost of 1,400 units sold during July (i.e., cost of goods sold for July, 2016)	$ 35,000

(3) If average cost method is used:

$$[(500 \text{ units} \times \$20) + (800 \text{ units} \times \$24) + (700 \text{ units} \times \$26)]/500 \text{ units} + 800 \text{ units} + 700 \text{ units}$$
$$= \$47,400/2,000 \text{ units}$$
$$= \$23.70$$

a. Computation of inventory on July 31, 2016 (i, e., ending inventory) under average cost method:

$$\text{Ending inventory} = 600 \text{ units} \times \$23.70$$
$$= \$14,220$$

b. Computation of cost of goods sold (COGS) for July 31, 2016 under average cost method:

$$\text{Cost of goods sold (COGS)} = 1,400 \times \$23.70$$
$$= \$33,180$$

Alternatively, we can compute cost of goods sold (COGS) by deducting ending inventory from the cost of goods available for sale:

Cost of goods sold (COGS) = Cost of goods available for sale – Ending inventory

$$\text{Cost of goods sold (COGS)} = [\{(500 \text{ units} \times \$20) + (800 \text{ units} \times \$24) + (700 \text{ units} \times \$26)\} – \$14,220^*]$$
$$= \$47,400 – \$14,220$$
$$= \$33,180$$

*See part a

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