ACCOUNTING FOR PERPETUAL AND PERIODIC INVENTORY METHODS

Key Terms and Concepts to Know

Merchandise Inventory:
- Merchandise Inventory (Inventory or MI) refers to the goods the company has purchased and intends to sell to others.
- Inventory is a current asset since the company intends to sell it within one year.

Cost of Goods Sold:
- Inventory that has been sold becomes an expense, Cost of Goods Sold, in the period of sale.

Perpetual Inventory System:
- Records all inventory transactions as they occur in the Merchandise Inventory account.
- Inventory account balance always shows the value of inventory on hand.

Periodic Inventory System:
- Records all purchase-related inventory transactions as they occur in separate accounts for each transaction type except for cost of goods sold.
- Cost of goods sold is recorded only at the end of the period based on a physical inventory.

Physical Inventory
- All merchandise inventory must be counted and valued at least once every fiscal year.
- Differences between the results of the physical inventory and the general ledger balance in the merchandise inventory account are called Shrinkage.

Key Topics to Know

Perpetual Inventory vs. Periodic Inventory Transactions

As noted above, perpetual and periodic inventory methods use different accounts to record inventory transactions.

Example #1

W Company had the following transactions during August. On August 1, the balance in merchandise inventory was $900, which was the same as the physical inventory.

- August 3 – purchased $500, f.o.b. shipping point
- August 4 – paid $25 for transportation on the August 3 purchase
- August 7 – sold $200 of merchandise, f.o.b. destination
- August 8 – paid $20 for transportation on the August 7 sale
- August 12 - granted a $37 price reduction on the August 7 sale as the merchandise shipped was the wrong color
- August 15 – purchased $800, f.o.b. destination
- August 19 – returned $30 from the August 3 purchase
- August 20 – received a $15 allowance on the inventory remaining from the August 15 purchase due to poor quality
- August 22 – sold $450 of merchandise, f.o.b. shipping point
- August 28 – received $60 of merchandise returned by the seller from the August 22 transaction

Required:
a) Using the perpetual inventory system, prepare the journal entries to record the transactions.
b) Using the periodic inventory system, prepare the journal entries to record the transactions.

Solution #1

Date	a) Perpetual Inventory	Debit	Credit	b) Periodic Inventory	Debit	Credit
Aug 3	Merch. Inventory	$500		Purchases	$500	
	Accounts payable		$500	Accounts payable		$500
Aug 4	Merch. Inventory	25		Transportation in	25	
	Cash		25	Cash		25
Aug 7	Cost of goods sold	200				
	Merch. Inventory		200			
Aug 8	Transportation out	20		Transportation out	20	
	Cash		20	Cash		20
Aug 12	Required entry does not affect inventory			Required entry does not affect inventory		
Aug 15	Merch. Inventory	800		Purchases	800	
	Accounts payable		800	Accounts payable		800
Aug 19	Accounts payable	30		Accounts payable	30	
	Merch. Inventory		30	Purchase returns and allowances		30
Aug 20	Accounts payable	15		Accounts payable	15	
	Merch. Inventory		15	Purchase returns and allowances		15
Aug 22	Cost of goods sold	450				
	Merch. Inventory		450			
Aug 28	Merch. Inventory	60				
	Cost of goods sold		60			

Entries not required under periodic inventory are highlighted with a box around the date. Entries using different accounts under periodic inventory are highlighted with a shaded date.

Perpetual Inventory vs. Periodic Inventory
Ending Inventory and Cost of Goods Sold

- The balance in the merchandise inventory account at the time of the physical inventory is determined below:

		Perpetual Inventory	Periodic Inventory
Aug 1	Beginning balance	$900	$900
Aug 3	Merch. Inventory	500	
Aug 4	Merch. Inventory	25	
Aug 7	Merch. Inventory	(200)	
Aug 15	Merch. Inventory	800	
Aug 19	Merch. Inventory	(30)	
Aug 20	Merch. Inventory	(15)	
Aug 22	Merch. Inventory	(450)	
Aug 28	Merch. Inventory	60	
Aug 31		$1,590	$900

- Remember that periodic inventory uses separate accounts such as purchases and purchase returns instead of merchandise inventory. The balance in the merchandise inventory account does not change until the end of the period when purchases, purchase returns and purchase discounts and cost of goods sold are closed into merchandise inventory. At the end of the period, a physical inventory is taken and cost of goods sold is calculated:

Beginning Inventory
+ Purchases
+ Transportation In
+ Returns from customers
- Purchase Returns and Allowances
- Purchase Discounts

= Cost of Goods Available for Sales
- Ending Inventory

= Cost of Goods Sold

Example #2

W Company took a physical inventory on August 31 and determined that $1,590 of inventory was on hand.

Required:
a) Using the perpetual inventory system, determine cost of goods sold and the value of ending inventory.
b) Using the periodic inventory system, determine cost of goods sold and the value of ending inventory.

Solution #2

Perpetual Inventory

Aug 7	Merch. Inventory	200
Aug 22	Merch. Inventory	450
	Cost of Goods Sold	$650
	Ending Inventory per physical	$1,590

Perpetual Inventory

Beginning Inventory	$900
+ Purchases ($500 + 800)	1,300
+ Transportation In	25
+ Returns from customers	60
- Purchase Returns and Allowances	(45)
- Purchase Discounts	
= Cost of Goods Available for Sales	2,240
- Ending Inventory per physical	1,590
= Cost of Goods Sold	650

Practice Problems

Practice Problem #1

N Company purchased $8,500 of merchandise f.o.b shipping point on March 25 with credit terms of 2/10, n/30. N Company returned $800 of merchandise on March 28. On April 1, N Company received an invoice from UPS for $85 for shipping the March 25 purchase.

Required:
a) Using the perpetual inventory system, prepare the journal entries to record the transactions.
b) Using the periodic inventory system, prepare the journal entries to record the transactions.

Practice Problem #2

T Company had the following transactions during January:

January 8	Purchased $4,000 of inventory. The seller's credit terms are 2/10, n/30.
January 8	Returned $200 worth of defective units and received full credit.
January 25	Paid the amount due, less the returned items.

Required:
a) Using the perpetual inventory system, prepare the journal entries to record the transactions.
b) Using the periodic inventory system, prepare the journal entries to record the transactions.

Practice Problem #3

H Company purchased $5,000 of merchandise FOB shipping point on account on May 4. Five days later, H Company returned $80 of merchandise for credit. H Company also requested and received a $150 allowance on May 10 for the merchandise it did not return. The freight bill of $60 for the purchase was paid on May 20. The May 1 balance in merchandise inventory was $1,700. $3,100 of inventory was sold in May.

Required:

a) Using the perpetual inventory system, prepare the journal entries to record the transactions.
b) Using the perpetual inventory system, determine the balance in merchandise inventory on May 31.
c) Using the periodic inventory system, prepare the journal entries to record the transactions.
d) Using the periodic inventory system, determine the balance in merchandise inventory on May 31, assuming that the inventory accounts were not closed.

True / False Questions

1. Inventory is usually reported as a long-term asset in the balance sheet.
   True False

2. Merchandising companies purchase inventories that are primarily in finished form for resale to customers.
   True False

3. Under a periodic inventory system, purchases, purchases returns and allowances, purchase discounts, and transportation in transactions are recorded in the Merchandise Inventory account.
   True False

4. The periodic inventory system requires updating the inventory account only at the end of the period to reflect the quantity and cost of goods available for sale and the cost of goods sold.
   True False

5. Under both the periodic and perpetual inventory systems, the temporary account Purchases Returns and Allowances is used to accumulate the cost of all returns and allowances for a period.
   True False

6. A merchandising company's operating cycle begins with the purchase of merchandise and ends with the collection of cash from the sale.
   True False

7. In a periodic inventory system, cost of goods sold is recorded as each sale occurs.
   True False

8. A periodic inventory system requires updating of the inventory account only at the beginning of an accounting period.
   True False

9. A perpetual inventory system continually updates accounting records for merchandising transactions.
   True False

10. Beginning inventory plus net purchases equals merchandise available for sale.
    True False

11. The Merchandise Inventory account balance at the beginning of the current period is equal to the amount of ending Merchandise Inventory from the previous period.
    True False

12. In a perpetual inventory system, the Merchandise Inventory account must be closed at the end of the accounting period.
    True False

13. Purchase allowances refer to merchandise a buyer acquires but then returns to the seller.
    True False

14. A buyer using a perpetual inventory system records the costs of shipping merchandise its purchases in a Delivery Expense account.
    True False

15. In a periodic inventory system, Inventory and Cost of Goods Sold accounts are kept up-to-date throughout the accounting period.
    True False

Multiple Choice Questions

1. In a perpetual inventory system, what accounts are credited when the customer returns merchandise is returned to the seller?
   a) Sales Returns and Allowances and Accounts Receivable
   b) Accounts Receivable and Sales
   c) Merchandise Inventory and Cost of Merchandise Sold
   d) Sales Returns and Allowances and Merchandise Inventory

2. Which of the following accounts is used in the periodic inventory system but not used in the perpetual inventory system?
   a) Merchandise Inventory
   b) Allowance expense
   c) Accounts Payable
   d) Purchases

Use the following information to answer the next two questions:
J Company Restaurant uses a *periodic* inventory system. Prepare general journal entries to record the following transactions for J Company:

Aug 10	J Company purchased merchandise on credit from Foster Foods for $9,000, terms 2/10, n/30, FOB destination. Foster paid transportation costs of $350.
Aug 12	J Company returned $600 of merchandise from the June 10 purchase.

3. What entry would J Company Restaurant make on August 10?
   a) Dr Purchases Cr Accounts Payable
   b) Dr Merchandise Inventory Cr Accounts Payable
   c) Dr Accounts Payable Cr Purchases
   d) Dr Accounts Payable Cr Merchandise Inventory

4. What entry would J Company Restaurant make on August 12?
   a) Dr Merchandise Inventory Cr Accounts Payable
   b) Dr Accounts Payable Cr Merchandise Inventory
   c) Dr Purchase Returns Cr Accounts Payable
   d) Dr Accounts Payable Cr Purchase Returns

The next 2 questions refer to the following information.
J Company uses a *perpetual* inventory system. Prepare general journal entries to record the following transactions for J Company:

Aug 10	J Company purchased merchandise on credit from Foster Foods for $9,000, terms 2/10, n/30, FOB destination. Foster paid transportation costs of $350.
Aug 12	J Company returned $600 of merchandise from the June 10 purchase.

5. What entry would J Company make on August 10?
   a) Dr Purchases Cr Accounts Payable
   b) Dr Merchandise Inventory Cr Accounts Payable
   c) Dr Accounts Payable Cr Purchases
   d) Dr Accounts Payable Cr Merchandise Inventory

6. What entry would J Company make on August 12?
   a) Dr Merchandise Inventory Cr Accounts Payable
   b) Dr Purchase Returns Cr Accounts Payable
   c) Dr Accounts Payable Cr Merchandise Inventory
   d) Dr Accounts Payable Cr Purchase Returns

7. The amount recorded for merchandise inventory includes all of the following *except*:
   a) Purchase discounts.
   b) Returns and allowances.
   c) Freight costs paid by the buyer.
   d) Freight costs paid by the seller.

8. Transportation In is an account used:
   a) By a Seller using the periodic inventory method
   b) By a Buyer using the perpetual inventory method
   c) By a Buyer using the periodic inventory method
   d) By a Seller using the perpetual inventory method

9. When a company is using the periodic inventory method, cost of goods sold is determined:
   a) Every time a sale is recorded
   b) As a percentage of sales
   c) As beginning inventory – purchases + purchase returns - ending inventory
   d) Based on the physical inventory

10. The operating cycle for a merchandiser that sells only for cash moves from:
    a) Purchases of merchandise to inventory to cash sales.
    b) Inventory to purchases of merchandise to cash sales.
    c) Accounts receivable to purchases of merchandise to inventory to cash sales.
    d) Accounts receivable to inventory to cash sales.

11. In a periodic inventory system, the purchase of inventory is debited to:
    a) Purchases.
    b) Cost of goods sold.
    c) Inventory.
    d) Accounts payable.

12. In a periodic inventory system, at the time of a sale the cost of inventory sold is:
    a) Debited to Accounts Receivable.
    b) Credited to Cost of Goods Sold
    c) Not recorded at this time.
    d) Debited to Cost of Goods Sold.

13. The primary difference between the periodic and perpetual inventory systems is:
    a) The reported amount of ending inventory is higher under the periodic system.
    b) The perpetual system maintains a continual record of inventory transactions, whereas the periodic system records these transactions only at the end of the period.
    c) The reported amount of sales revenue is higher under the periodic inventory system.
    d) The reported amount of cost of goods sold is higher under the perpetual inventory system.

14. N Company started the year with $94,000 of merchandise inventory on hand. During the year, $400,000 in merchandise was purchased on account with credit terms of 1/15, n/45. All discounts were taken. N Company paid freight-in charges of $7,500. Merchandise with an invoice amount of $5,000 was returned for credit. Cost of goods sold for the year was $380,000. What is ending inventory?
    a) $112,490.
    b) $112,550.
    c) $116,500.
    d) $120,300

15. Transportation Out is an account used:
    a) By a Seller using the periodic inventory method
    b) By a Buyer using the perpetual inventory method
    c) By a Buyer using the periodic inventory method
    d) Not used by a merchandising company

Solutions to Practice Problems

Practice Problem #1

a)

March 25	Merchandise Inventory	8,500	
	Accounts Payable		8,500
March 28	Accounts Payable	800	
	Merchandise Inventory		800
April 1	Merchandise Inventory	85	
	Accounts Payable		85

b)

March 25	Purchases	8,500	
	Accounts Payable	8,500	
March 28	Accounts Payable	800	
	Purchase returns		800
April 1	Transportation In	85	
	Accounts Payable		85

Practice Problem #2

a)

January 6:	Merchandise Inventory	4,000	
	Accounts Payable		4,000
January 8:	Accounts Payable	200	
	Merchandise Inventory		200
January 25:	Accounts Payable	3,800	
	Cash		3,724

b)

January 6:	Merchandise Inventory	4,000	
	Accounts Payable		4,000
January 8:	Accounts Payable	200	
	Merchandise Inventory		200
January 25:	Accounts Payable	3,800	
	Cash		3,800

Practice Problem #3

a)

May 4	Merchandise Inventory	5,000	
	Accounts Payable		5,000
May 9	Accounts Payable	80	
	Merchandise Inventory		80
May 10	Accounts Payable	150	
	Merchandise Inventory		150
May 20	Merchandise Inventory	60	
	Cash		60
May 31	Cost of goods sold	3,100	
	Merchandise Inventory		3,100

b) Ending balance = $1,700 + 5,000 – 80 – 150 + 60 - 3,100 = $3,430

c)

May 4	Purchases	5,000	
	Accounts Payable		5,000
May 9	Accounts Payable	80	
	Purchase returns & allowances		80
May 10	Accounts Payable	150	
	Purchase returns & allowances		150
May 20	Transportation In	60	
	Cash		60

d) Ending balance = $1,700 as the inventory accounts have not been closed

Solutions to True / False Problems

1. False - inventory is typically reported as a current asset because companies expect to convert it to cash in the near term.
2. True
3. False – periodic inventory utilizes a separate account for each of these transaction types
4. True
5. False – this account is used only for periodic inventory
6. True
7. False – cost of goods sold is recorded only at the end of the period
8. False – Inventory is updated only at the end of the period
9. True
10. True
11. True
12. False – inventory is a permanent account and is never closed
13. False – allowances are purchase price reductions for the buyer due to a defect in the inventory
14. False – the buyer using a perpetual inventory system records the cost of shipping its purchases in merchandise inventory
15. False- Inventory and Cost of Goods Sold is updated only at end of period.

Solutions to Multiple Choice Questions

1.	C
2.	D
3.	A
4.	D
5.	B
6.	C
7.	D
8.	C
9.	D
10.	A