CHAPTER 19

Inventories

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Problem 19.1 Lower of cost and market

The following information applies to the inventory of Phil's Photographics as at 30 June 2003:

Model number	Quantity	Unit price	
		Actual cost	Net realisable value
Cameras:			
A-4	15	$ 40	$ 35
C-7	23	100	115
G-1	12	65	62
Z-8	5	20	25
Video equipment:			
BD-5	14	175	165
FY-9	8	230	240

Required:

A. Calculate the ending inventory value as at 30 June 2003, applying the lower of cost and market rule to:
   1. individual inventory items
   2. major categories of cameras and video equipment
   3. total inventory.

B. What effect does application of the lower of cost and market rule have on the financial statements of the business?

C. Assume that at the end of the next financial year, 12 units of model A-4 are still on hand and the net realisable value is $38 per unit. How would this increase in net realisable value affect the inventory value of the 12 units?

D. How would the increase in net realisable value in requirement C be treated in the accounting records?

Solution

A.

PHIL'S PHOTOGRAPHICS

Item	Quantity	Unit price Cost	Unit price Market	Inventory amounts Cost	Inventory amounts Market	LCM (by item)
Cameras						
Model A-4	15	$40	$35	$600	$525	$525
Model C-7	23	100	115	2300	2645	2300
Model G-1	12	65	62	780	744	744
Model Z-8	5	20	25	100	125	100
Total - cameras				$3780	$4039	$3669
Video equipment						
Model BD-5	14	175	165	$2450	$2310	$2310
Model FY-9	8	230	240	1840	1920	1840
Total – video equip.				$4290	$4230	4150
Total				$8070	$8269	$7819

1. As shown in the above schedule, applying the lower cost and market rule to each item of the inventory results in an ending inventory of $7 819.
2. Applying the lower of cost and market rule to each major category of the inventory results in an ending inventory amount of $8 010, calculated as follows:

cameras	$3 780
video equip.	4 230
	$8 010

3. As shown in the above schedule, applying the lower of cost and market rule to the total inventory results in an ending inventory amount of $8 070.

B.

The LCM procedure that results in the lowest ending inventory amount at 30 June 2002 this will also result in the lowest net profit for the year (the lower the ending amount, the higher will be the cost of goods sold). Applying the lower of cost and market rule to each item of the inventory will result in the lowest net profit for the year.

C.

If the 12 units of Camera A-4 were still on hand at the end of the next financial year at a unit cost of $38 per unit there would be no change to the inventory valuation. The inventory would be still valued at $35 per unit being the LCM from the previous year.

D.

The increase in the net realisable value would be recorded on the appropriate stock cards. Once inventory is valued down it will not be revalued upwards.

Problem 19.2 Inventory cost flow methods – periodic and perpetual – and sales returns

The purchases and sales of Gro-well Gardening Pty Ltd of one brand of lawn fertiliser for the year ended 31 December 2003 are contained in the following schedule:

	Purchases			Sales			Balance		
Date	Units	Unit cost	Total	Units	Unit cost	Total	Units	Unit cost	Total
Jan. 1							60	$5.00	$300
Jan. 7				40					
Jan. 30	50	$5.10	$ 255						
Feb. 2				27					
Feb. 20	60	5.20	260						
Feb. 28				50					
Mar. 16	25	5.20	130						
Mar. 24	30	5.30	159						
Mar. 27				20					
Apr. 7				23					
Apr. 15	40	5.35	214						
Apr. 18				50					
May 4	30	5.30	159						
June 2	20	5.40	108						
June 26				40					
July 27	30	5.40	162						
Aug. 6				50					
Aug. 31	60	5.50	330						
Sept. 11				20					
Sept. 26	40	5.50	220						
Oct. 9				60					
Nov. 4	40	5.60	224						
Nov. 30				30					
Dec. 11	20	5.65	113						
Dec. 27				10					

The selling price up to 30 June was $10 per unit but was raised to $11 for the rest of the year.

Required:

A. Prepare the statement of financial performance up to the gross profit stage under the following cost flow assumptions:
   1. periodic inventory
      (a) FIFO
      (b) weighted average
   2. perpetual inventory
      (a) FIFO
      (b) moving average.

B. If 10 of the units sold on 9 October were returned and placed back into inventory, how would this affect profits calculated under 2(a) and 2(b) above?

Solution

GRO-WELL PTY LTD

1. *Periodic inventory*

(a) **FIFO**

	Units		
Sales (250 × $10) + (170 × $11)	420		$ 4370.00
Less: Cost of goods sold:			
Beginning inventory	60	$ 300.00	
Purchases	445	2334.00	
Available for sale	505	2634.00	
Ending inventory	85	474.50	2159.50
Gross profit			$2210.50

(1) Ending inventory
(20 @ $5.65) + (40 @ $5.60) + (25 @ $5.50) = $474.50

(b) **Weighted Average**

Sales	420		$ 4370.00
Cost of goods sold:			
Available for sale as in 1(a)	505	$2634.00	
Ending inventory	85	443.70	2190.30
Gross profit		11,852.50	
Gross profit			$2179.70

(2) Ending inventory
($2 634.00/ 505) × 85 units on hand = $443.70

2. *Perpetual inventory*

(a) **FIFO**
There will be no difference in the gross profit when the perpetual inventory system is utilised compared with the periodic inventory system under the FIFO cost flow assumption.

(b) **Moving average**
See stock card.

Sales	$4370.00
Less: Cost of goods sold	2215.79
Gross profit	$2154.21

B.
If 10 units sold on 9 October were returned back into inventory, the effect would be as follows:
Sales would decrease by $110, and cost of goods sold would decrease by $55 under FIFO and $54.50 under moving average.

(*continued*)

(b) Moving average method

Date	Explanation	Purchases			Sales			Balance		
		Units	Unit cost	Total cost	Units	Unit cost	Total cost	Unit	Unit cost	Total cost
1/1								60	$5.00	$300
7/1	Sales				40	$5.00	$200.00	20	5.00	100
30/1	Purchases	50	$5.10	$255				70	5.07	355
2/2	Sales				27	5.07	136.89	43	5.07	218.01
20/2	Purchases	60	5.20	312				103	5.15	530.01
28/2	Sales				50	5.15	257.50	53	5.15	272.95
16/3	Purchases	25	5.20	130				78	5.17	402.95
24/3	Purchases	30	5.30	159				108	5.20	561.95
27/3	Sales				20	5.20	104.00	88	5.20	457.60
7/4	Sales				23	5.20	119.60	65	5.20	338.00
15/4	Purchases	40	5.35	214				105	5.26	552.00
18/4	Sales				50	5.26	263.00	55	5.26	289.30
4/5	Purchases	30	5.30	159				85	5.27	448.30
2/6	Purchases	20	5.40	108				105	5.30	556.30
26/6	Sales				40	5.30	212.00	65	5.30	344.50
27/7	Purchases	30	5.40	162				95	5.33	506.50
6/8	Sales				50	5.33	266.50	45	5.33	239.85
31/8	Purchases	60	5.50	330				105	5.43	569.85
11/9	Sales				20	5.43	108.60	85	5.43	461.55
26/9	Purchases	40	5.50	220				125	5.45	681.55
9/10	Sales				60	5.45	327.00	65	5.45	354.25
4/11	Purchases	40	5.60	224				105	5.51	578.25
30/11	Sales				30	5.51	165.30	75	5.51	413.25
11/12	Purchases	20	5.65	113				95	5.54	526.25
27/12	Purchases				10	5.54	55.40	85	5.54	470.90
							$2215.79			

Problem 19.3 FIFO method – perpetual inventory system

The beginning inventory of Product QV1234 and information about purchases and sales made during April are shown below:

April	1	Inventory	4000 units @ $2.00
	4	Purchases	4500 units @ 2.25
	9	Sales	3000 units
	12	Purchases	5000 units @ 2.30
	21	Sales	3000 units
	24	Sales	2500 units
	26	Purchases	3000 units @ 2.35
	30	Sales	2000 units

The company uses the perpetual inventory system, and all purchases and sales are on credit. Selling price is $5 per unit.

Required:

A. Using the FIFO method, prepare appropriate purchases and sales journals to record these events.
B. Prepare an appropriate inventory record for Product QV1234 for April, and post the journals prepared in requirement A above to the appropriate general ledger accounts (assuming that product QV1234 is the only product bought and sold by the business entity).
C. Prepare a statement of financial performance for the business entity for April.
D. Assume now that, on 15 April, 1000 of the units purchased on 12 April were returned to the supplier because of a technical fault, and that 50 of the units sold on 24 April had been returned on 27 April by a customer as being in excess of needs. How will this affect the profits of the business for April?

Solution

A. & B.

Product QV1234		FIFO method								
		Purchases			Sales			Balance		
Date	Explanation	Units	Unit cost	Total cost	Units	Unit cost	Total cost	Units	Unit cost	Total cost
1/4	Balance							4000	$2.00	$8000
4/4	Purchases	4500	$2.25	$10125				4000	2.00	8000
								4500	2.25	10125
9/4	Sales				3000	$2.00	$6000	1000	2.00	2000
								4500	2.25	10125
12/4	Purchases	5000	2.30	11500				1000	2.00	2000
								4500	2.25	10125
								5000	2.30	11500
21/4	Sales				1000	2.00	2000	2500	2.25	5625
					2000	2.25	4500	5000	2.30	11500
24/4	Sales				2500	2.25	5625	5000	2.30	11500
26/4	Purchases	3000	2.35	7050				5000	2.30	11500
								3000	2.35	7050
30/4	Sales				2000	2.30	4600	3000	2.30	6900
								3000	2.35	7050
							22725			

(*continued*)

Sales Journal p.1

Date	Invoice	Account	Post Ref	Amount
9/4	3000 units @ $5		√	$15 000
21/4	3000 units @ $5		√	15 000
24/4	2500 units @ $5		√	12 500
30/4	2000 units @ $5		√	10 000
				$52 500

Purchases Journal p.1

Date	Account	Terms	Post Ref	Amount
4/4			√	$10 125
12/4			√	11 500
26/4			√	7 050
				$28 675

Sales No. 400

Date	Explanation	Post Ref.	Debit	Credit	Balance
April 30	Balance				
		SJ		52 500	52 500

Purchases No. 500

Date	Explanation	Post Ref.	Debit	Credit	Balance
April 30	Balance				
		PJ	28 675		28 675

C.

Statement of Financial Performance
For the month ended 30 April

OPERATING REVENUE	
Sales	$ 52 500
Less: Sales returns and allowances	nil
Net Sales	52 500
Less: Cost of goods sold	22 725
GROSS PROFIT	29 775
LESS: EXPENSES	nil
NET PROFIT	$29 775

D.

A purchase return on the 15 April will decrease purchases and subsequently cost of goods sold. This will in turn increase gross profit because cost of goods sold is reduced. A sales return will reduce sales revenue and will subsequently decrease gross profit. Further a sales return will also decrease cost of goods sold which will also increase gross profit. Therefore a sales return will have a total zero effect on gross profit.

Problem 19.4 Effects of inventory errors

Two consecutive annual statements of financial performance for the years ended 30 June of Alpha Ltd are shown below:

	2001	2002
Sales revenue	$286 000	$279 000
Cost of goods sold		
Beginning inventory	55 000	68 000
Purchases	160 750	149 300
Goods available for sale	215 750	217 300
Ending inventory	68 000	74 000
Cost of goods sold	147 750	143 300
Gross profit	138 250	135 700
Operating expenses	65 400	71 700
Net profit	$ 72 850	$ 64 000

The following information concerning the year ended 30 June 2001 has been discovered.

1. Alpha Ltd sells goods of Omega Ltd on consignment. Consigned goods on hand at 30 June were included in the inventory at a cost of $1100.
2. On 27 June 2001, Alpha sold goods costing $450 for $940. The terms were FOB destination, and the goods reached the buyer on 6 July. Alpha recorded the sale in the financial year ended 30 June 2001 and the goods were excluded from the ending inventory.
3. On 19 June 2001, Alpha made and recorded a purchase of goods worth $1500. The terms were FOB shipping point, and Alpha received notice that the goods were delivered to the transport company on 23 June. Since the goods had not arrived by the end of the year, they were not included in inventory.
4. On 30 June 2001, a potential customer had goods costing $205 out on trial. These goods were excluded from ending inventory.
5. On 26 June 2001, Alpha purchased goods for $870. The terms were FOB destination. Since the goods arrived in July, they were excluded from the ending inventory. The purchase was recorded in June 2001.

Required:

A. Determine the correct ending inventory figure at 30 June 2001.
B. Prepare revised statements of financial performance for financial years ending in 2001 and 2002.
C. Determine the total net profit for the 2-year period ending 30 June 2002 both before and after the revisions. Explain why the figures are similar or different.

Solution

A.

ALPHA LTD

Ending inventory as reported 2001	$68 000
Add: Sold goods in transit - FOB destination	450
Purchased goods in transit - FOB shipping point	1 500
Goods out on trial	205
	70 155
Less: Goods held on consignment	1 100
Correct ending inventory	$69 055

B.

ALPHA LTD
Statement of Financial Performance
for the years ending 30 June 2001 and 2002

		2001	2002
OPERATING REVENUE			
Sales revenue	($286 000 − $940)	$285060	
	($279000 + $940)		$279940
Cost of goods sold:			
Beginning inventory		55000	69 055
Purchases	($160750 − $870)	159880	
	($149300 + $870)		150170
Goods available for sale		214880	219225
Ending inventory		69055	74000
Cost of goods sold		145825	145225
GROSS PROFIT		139235	134715
OPERATING EXPENSES		65400	71700
NET PROFIT		$73835	$63015

C.

As reported: $72 850 + $64 000 = $136 850
As corrected: $73 835 + $63 015 = $136 850
The two figures are the same because inventory errors offset over two consecutive periods.

Problem 19.5 Gross profit method

An explosion occurred at Allstate Chemicals on the night of 11 April and destroyed the entire inventory. The accounting records, which survived the explosion, contained the following information about the period 1 January to 11 April:

Sales	$330 700
Sales returns and allowances	4 200
Purchases	282 500
Purchases returns and allowances	3 150
Freight inwards	2 400
Inventory balance, 1 January	59 300

The gross profit margin has averaged 42% over the last 3 years.

Required:
Estimate the cost of the inventory that was destroyed.

Solution

The estimated ending inventory can be disclosed by preparing a statement of financial performance, and deducing the ending inventory by applying the profit (and hence cost) rates.

ALLSTATE CHEMICALS
Statement of Financial Performance
for the period 1 January to 11 April

OPERATING REVENUE			
Sales revenue		$330 700	
Less: Sales returns and allowances		(4 200)	
Net sales revenue		326 500	100%
COST OF GOODS SOLD:			
Beginning inventory		59 300	
Purchases	$282 500		
Less: Purchases ret.& allow.	(3 150)		
Add: Freight inwards	2 400		
Net purchases		281 750	
Goods available for sale		341 050	
LESS: ESTIMATED ENDING INVENTORY		15 315	
Estimated cost of goods sold		189 370	58%
Estimated gross profit		$137 130	42%