
Written Exam for the B.Sc. or M.Sc. in Economics summer 2019

Managerial Accounting

Guiding Solutions

29th May 2019

(3-hour closed book exam)

Exercise 1

Question 1 a a and b

	Absorption Costing		Variable Costing	
	Year 1	Year 2	Year 1	Year 2
Variable production costs	16	16	16	16
Fixed manufacturing overhead costs:				
600,000 ÷ 20,000 units	30		—	
600,000 ÷ 25,000 units		24		—
Unit product cost	46	40	16	16

Question 2

	Year 1		Year 2	
Sales		1,400,000		1,400,000
Less variable expenses:				
Variable cost of goods sold:				
Beginning inventory	0		0	
Add variable manufacturing costs	320,000		400,000	
Goods available for sale	320,000		400,000	
Less ending inventory	0		80,000	
Variable cost of goods sold	320,000		320,000	
Variable selling expense and administrative expenses (20,000 units x 2)	40,000	360,000	40,000	360,000
Contribution margin		1,040,000		1,040,000
Less fixed expenses:				
Fixed manufacturing overhead	600,000		600,000	
Fixed selling and administrative expenses	360,000	960,000	360,000	960,000
Operating profit		80,000		80,000

Question 3

	Year 1	Year 2
Variable costing operating profit	80,000	80,000
Add: Fixed manufacturing overhead cost deferred in inventory under absorption costing (5,000 units × 24)	—	120,000
Absorption costing operating profit	80,000	200,000

Question 4

The increase in production in Year 2, compared with the level sales, caused a buildup of inventory and a deferral of a portion of Year 2's fixed manufacturing overhead costs to the next year. This deferral of cost relieved Year 2 of 120,000 (5,000 units × 24) of fixed manufacturing overhead cost that it otherwise would have borne. Thus, its operating profit was 120,000 higher than the operating profit of Year 1, even though the same number of units was sold each year. In sum, by increasing production and thereby building up inventory, the company was able to increase operating profits without increasing sales. This is a major criticism of the absorption costing approach.

Exercise 2

Question 1

	East Store Kept Open	East Store Closed	Difference: Operating Profit Increase or (Decrease)
Sales	2,160,000	—	(2,160,000)
Less cost of goods sold	1,209,600	—	1,209,600
Gross margin	950,400	—	(950,400)
Operating expenses:			
Selling expenses:			
Sales salaries	210,000	—	210,000
Direct advertising	152,000	—	152,000
General advertising	32,400	32,400	—
Store rent	255,000	—	255,000
Depreciation of store fixtures	13,800	13,800	—
Delivery salaries	21,000	9,000	12,000
Depreciation of delivery equipment	9,000	9,000	—
Total selling expenses	694,200	64,200	630,000
Administrative expenses:			
Store management salaries	63,000	36,000	27,000
Salary of new manager	33,000	—	33,000
General office salaries	36,000	18,000	18,000
Insurance on fixtures and inventories	22,500	7,500	15,000
Utilities	93,000	—	93,000
Employment taxes	54,450	9,450	45,000
General office—other	54,000	54,000	—
Total administrative expenses	355,950	124,950	231,000
Total expenses	1,050,150	189,150	861,000
Operating profit (loss)	(99,750)	(189,150)	(89,400)

Or alternatively use this format:

Gross margin lost if the store is closed		(950,400)
Less costs which can be avoided:		
Sales salaries	210,000	
Direct advertising	153,000	
Store rent	255,000	
Delivery salaries	12,000	
Store management salaries (63,000 - 36,000)	27,000	
Salary of new manager	33,000	
General office salaries	18,000	
Insurance on inventories (22,500 x 2/3)	15,000	
Utilities	93,000	
Employment taxes	45,000	* 861,000
Decrease in company profits if the North Store is closed		(89,400)

*Salaries avoided by closing the store:	
Sales salaries	210,000
Delivery salaries	12,000
Store management salaries	27,000
Salary of new manager	33,000
General office salaries	18,000
Total avoided	300,000
Employment tax rate	× 15%
Employment taxes avoided	45,000

Question 2

Explanations.

Question 3

Based on the data in (question 1) and the information in the question, the East Store should not be closed.

Question 4

Under these circumstances, the East Store should not be closed. The calculations are as follows:

Gross margin lost if the South Store is closed (see question 1 above)	(950,400)
Gross margin gained from the North Store:	
2,160,000 × 1/4 = 540,000; 540,000 × 45%* =	
243,000	243,000
Net loss in gross margin	(707,400)
Less costs which can be avoided if the East Store is closed (see question 1)	861,000
Net disadvantage of closing the East Store	153,600

*The North Store's gross margin rate is: $1,458,000 / 3,240,000 = 45\%$

Exercise 3

Question 1

Materials price variance = AQ (AP – SP)
12,000 kilo. (5.70 per kilo.* – 6.00 per kilo.) = 3,600 F

*68,400 ÷ 12,000 kilos. = 5.70 per kilo

Materials quantity variance = SP (AQ – SQ)
6.00 per kilo (12,000 kilo. – 11,200 kilo.) = 4,800 U

Question 2

Labour rate variance = AH (AR – SR)
2,800 hrs. (9.75 per hr.* – 9.00 per hr.) = 2,100 U

*27,300 ÷ 2,800 hrs. = 9.75 per hour.

Labour efficiency variance = SR (AH – SH)
9.00 per hr. (2,800 hrs. – 3,000 hrs.) = 1,800 F

Question 3

NB! There was a mistake in the variable manufacturing overhead in the standard costing as the variable manufacturing overhead should have been 10,260 instead of 10,840. This means that the following two solutions will be considered as correct when making the assessment.

Variable overhead spending variance = AH (AR – SR)
2,800 hrs. (3.75 per hr. – 3.60 per hr.*) = 420 U

*5.40 ÷ 1.5 hrs. = 3.60

OR

Variable overhead spending variance = AH (AR – SR)
2,800 hrs. (3.75 per hr.* – 3.80 per hr.**) = 140 F

**10,840 ÷ 2,850 = 3,80

Variable overhead efficiency variance = SR (AH – SH)
3.60 per hr. (2,800 hrs. – 3,000 hrs.) = 720 F

OR

Variable overhead efficiency variance = SR (AH – SH)
3.80 per hr. (2,800 hrs. – 3,000 hrs.) = 760 F