



Midterm EXAM- Solution-FALL-2014

Financial Accounting (Concordia University)



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COMM 305
MID TERM EXAMINATION – FALL 2014
ALL SECTIONS

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Question	Marks
Q-1	20
Q-2	20
Q-3	20
Q-4	20
Q-5	20
	100

QUESTION I. 20 MARKS

SELECT THE BEST ANSWER 1 MARK EACH

- a) Which of the following are addressed by the standards of ethical professional practice of the Institute of Management Accountants?
- a. **competence, confidentiality, integrity**
 - b. strategic cost management, confidentiality, integrity
 - c. competence, strategic cost management, integrity
 - d. competence, confidentiality, strategic cost management
 - e. all of the above
- b) Disclosing all information, unfavourable as well as favourable, that could influence an intended user's understanding of reports would relate to what section of the IMA Code of Conduct?
- a. competence
 - b. independence
 - c. integrity
 - d. **Credibility**
 - e. none of the above
- c) If there are no income taxes, the contribution margin would be equal to:
- a. sales minus fixed expenses
 - b. **net income plus fixed expenses**
 - c. sales minus net income
 - d. sales minus variable manufacturing costs
 - e. none of the above
4. In a given break-even analysis, accountants usually assume that:
- a. volume is not the only relevant factor affecting cost
 - b. selling prices can be changed
 - c. **all costs may be divided into fixed and variable elements**
 - d. sales mix can be changed
 - e. all of the above
5. Contribution margin is equal to sales minus:
- a. all manufacturing costs of goods sold
 - b. all variable selling and administrative expenses
 - c. variable manufacturing costs of goods sold
 - d. variable manufacturing costs of goods manufactured
 - e. **none of the above**
6. Increased labour rates for McDermott Company caused an increase in the variable costs per product unit. As a result:
- a. the contribution margin increased
 - b. **the break-even point increased**
 - c. the contribution margin is to be unchanged

- d. sales price must be changed
 - e. none of the above
7. The X Company produced in one month 20,000 units at a total variable cost of \$16,000. If 25,000 units are produced in the following month, and assuming no other changes, the variable costs would be:
- a. \$16,000 total
 - b. \$0.64 per unit
 - c. \$24,000 total
 - d. \$1.25 per unit
 - e. **none of the above**
8. Total fixed costs are \$240,000 when 40,000 units are produced. Compute the fixed costs when 50,000 units are produced, assuming no other changes:
- a. \$300,000 total
 - b. \$480,000 total
 - c. **\$4.80 per unit**
 - d. \$5.00 per unit
 - e. None of the above
9. Which cost accounting process would be most appropriate for accumulating costs of identical, standardized units?
- a. job-order costing
 - b. **process costing**
 - c. normal costing
 - d. standard costing
10. What is a disadvantage of actual costing?
- a. Actual cost systems can provide accurate unit cost information on a timely basis.
 - b. Actual cost systems produce unit costs that do not change from period to period.
 - c. Estimates must be used when calculating the actual overhead rate.
 - d. Problems are created by the calculation of direct labour.
 - ee. **None of the above**
11. Normal costing uses which cost in work in process?
- a. applied direct materials
 - b. actual overhead
 - c. applied direct labour
 - d. budgeted direct materials
 - e. **None of the above**
12. What is the term for the whole units that could have been produced in a period given the amount of manufacturing inputs used?
- a. FIFO units
 - b. transferred-in units
 - c. weighted average units

- d. equivalent units of output
 - e. None of the above
13. Which of the following determines whether the costs assigned to units transferred out and to units in ending work in process are equal to the costs in beginning work in process plus the manufacturing costs incurred in the current period?
- a. equivalent unit of output
 - b. cost reconciliation
 - c. batch production process
 - d. transferred-in costs
 - ee. none of the above
14. What happens when conversion costs are uniform?
- a. Materials, labour, and overhead are applied at different rates throughout the process.
 - b. Materials, labour, and overhead are added throughout the process at the same rate.
 - c. Labour and overhead are added at the same rate but different materials are added at a different point.
 - d. Materials and labour are added at the same rate but overhead is applied uniformly.
 - ea. none of the above
15. To find the unit cost of materials for a department using the FIFO method of process costing, by what figure would you divide the total cost of materials used to the department during the year?
- a. units in process
 - b. units started and completed
 - c. total units manufactured
 - d. total physical units of output
 - ea. none of the above
16. When computing equivalent units of production, what is the method that combines partially completed units in beginning inventory with current-period production?
- a. the FIFO method
 - b. the LIFO method
 - c. the weighted average method
 - d. the specific identification method
 - ea. none of the above
17. What does unit-level product costing assign?
- a. It assigns direct materials and direct labour to products and assigns overhead to departmental pools, which are assigned to products using predetermined overhead rates based on unit-level drivers.
 - b. It assigns direct materials, direct labour, and overhead to departmental cost pools, which are assigned to products using predetermined overhead rates based on unit-level drivers.
 - c. It assigns direct materials and direct labour directly to products and assigns overhead to departmental pools, which are assigned to products using

predetermined overhead rates based on non-unit-level drivers.

- d. It assigns direct materials, direct labour, and overhead to departmental cost pools, which are assigned to products using predetermined overhead rates based on non-unit-level drivers.
- ea. none of the above

18. Which of the following is a unit-based activity driver?

- a. number of setups
- b. number of indirect labour hours
- c. number of inspections
- d. number of material moves
- ea. none of the above

19. Assume the following: Actual overhead costs equalled estimated overhead. Actual direct labour hours exceeded estimated direct labour hours used to calculate the predetermined overhead rate. If overhead is applied using the predetermined overhead rate, what will be the impact on the overhead?

- a. overapplied
- b. underapplied
- c. \$0
- d. need more information
- e. none of the above

20. Assume the following: Actual overhead costs equalled estimated overhead and actual machine hours exceeded estimated machine hours. If overhead is applied using the predetermined overhead rate per direct labour hours, what will be the impact on the overhead?

- a. Over-applied
- b. Under-applied
- c. \$0
- d. need more information
- e. none of the above

QUESTION II. 20 MARKS

Brandt Company produces unique metal sculptures. The company uses normal job order cost system and applies factory overhead to productions on the basis of direct labour dollars. The following balances were taken from the general ledger of the company as of January 1, 2013:

- ✓ On January 1, 2013 there were three jobs in process with the following costs:

	<u>Job 35</u>	<u>Job 36</u>	<u>Job 37</u>
Direct materials	\$1,000	\$3,400	\$7,800
Direct labour	3,500	7,000	10,500
Applied overhead	<u>4,200</u>	<u>8,400</u>	<u>12,600</u>
Total	<u>\$8,700</u>	<u>\$18,800</u>	<u>\$30,900</u>

- ✓ Raw materials inventory \$2,300
- ✓ Finish goods inventory for job 34 \$15,000

During January the following events occurred:

- ✓ Raw materials were purchased on account for \$26,500
- ✓ Two more jobs were started: Job 38 and Job 39. Direct materials and direct labour costs incurred by each job in process in January are as follows:

	<u>Direct materials</u>	<u>Direct labour</u>
Job 35	\$4,000	\$3,000
Job 36	1,500	2,000
Job 37	2,600	1,500
Job 38	8,000	6,500
Job 39	7,600	7,000

- ✓ Jobs 37 and 38 were completed and sold by January 31.
- ✓ Job 35 was completed but not sold by January 31.

The company incurred the following actual factory overhead during the month:

Supervisory salaries	\$8,750
Factory rent	\$5,500
Depreciation (machines)	\$3,500
Indirect materials	\$1,250

The company writes off any under-or over- applied overhead to the Cost of Goods Sold in the month in which it is incurred.

Instructions:

- Compute the ending balance of Raw Materials, Work in Process, and Finished Goods inventory on January 31.
- Suppose that Brandt Company prices its jobs at cost plus 50%. In addition during January selling and administrative costs of \$23,100 were incurred. Prepare an income statement and a Statement of COGS in proper format for the month of January
- .

Solution:

- a) i) **Raw Materials, Jan. 31 = 2.5 MKS as follows**

= \$ 2,300 (beginning)	0.5 MK
+ \$26,500 (purchases)	0.5 MK
- \$23,700 (issued to production)	0.5 MK
- \$ 1,250 Indirect materials	1.0 MK
= \$3,850	<u>2.5 MKS</u>

- a)ii) **WIP January 31 includes Jobs 36 and 39** since 37 and 38 were completed and sold and Job 35 was completed (is in FGI).

The applied overhead rate = job 35 or 36 or 37 = applied OH/DL\$ = \$4200/\$3500) = 120% of DL\$. 1.0 MK

The costs for those jobs 36 and 39 are as follows:

	Opening	during January costs	Total
1.5 Mk Job 36-	\$18,800 0.5 MK		
	{(0.5 MK (\$1,500 + 2,000) + 1.2*2,000 0.5 MK)}		= \$5,900 = \$24,700
1.0 MK Job 39-	0		
	{(0.5 MK \$7,600 + 7,000) + 1.2*7000 0.5 MK }		= \$23,000
2.5 MKS			<u>\$47,700</u>

- a) iii) FGI January 31 includes Jobs 34 (from beginning of month, unsold) and Job 35 completed

	Opening	January costs	Total
.05 MK Job 34	\$15,000 0.5 MK		\$15,000
1.50 Mk Job 35-	\$8,700 0.5 MK		
	{(0.5 MK (\$4,000 + 3,000) + 1.2 *3,000 0.5 MK)}		= \$10,600 = \$19,300
2.00 MKS			<u>\$34,300</u>

QUESTION A = 8 MARKS AS FOLLOWS

- Raw Materials, Jan. 31 =** 2.5 MKS
WIP January 31 includes Jobs 36 and 39 2.5 MKS
The applied overhead rate 1.00 MK
FGI January 31 includes Jobs 34 & 35 2.00 MKS

b) Jobs sold in January = **TOTAL MARKS ARE 12 AS FOLLOWS**

	Opening	January costs	Total
1.50 MK Job 37	\$30,900	0.5 MK	
	{(0.5 MK (\$2,600 + 1,500) + (1.2 * 1,500 0.5 MK)) = \$5,900=		\$36,800
1.00MK Job 38	0		
2.50 MKS	{(0.5 MK (\$8,000 + \$6,500) + (1.2 * 6,500 0.5 MK)) =		\$22,300
		COGS	\$59,100

Over-applied overhead = actual factory overhead during the month **LESS APPLIED OH**

	Supervisory salaries	\$8,750
	Factory rent	\$5,500
	Depreciation (machines)	\$3,500
	Indirect materials	\$1,250
0.5000MK	TOTAL	\$19,000
1.50MKS	less \$20,000 direct labour(1.2)	- \$24,000 =
2.00MKS		\$5,000 over-applied to COGS

1.50.00MKS Sales = \$59,100 CGS* 1.5 MARK-UP = \$88,650
TOTAL 6 MARKS

Brandt Company
Income Statement
For the month ended January 31, 2013 **0.5 MKS**

Net sales	= \$59,100 * 1.5 = 0.5 MKS	\$88,650
Cost of goods sold		
	Finished goods inventory, June 1..... 0.50 MKS	\$ 15,000
	Cost of goods manufactured [from (a)]..... 1.50 MKS	<u>78,400</u>
	Cost of goods available for sale.....	93,400
	Finished goods inventory, June 30..... 0.50 MKS	<u>34,300</u>
•	Cost of goods sold.....	59,100
	Less over-applied..... 1 MK	<u>\$5,000</u>
	Adjusted Cost of goods sold.....	54,100
	Gross profit..... 0.50 MKS	\$34,550
	Less Selling and admin..... 0.50 MKS	<u>\$23,100</u>
	Net income 0.50 MKS	<u>\$11,450</u>
	TOTAL MARKS 6	

$$A + B = 8 + 12(6 + 6) = 20 \text{ MARKS}$$

QUESTION III. 20 MARKS

The Chang Manufacturing Company makes wood-finishing stain and uses the FIFO method of process costing for its stain manufacturing activity. The production of stain begins with the blending of various chemicals and ends with the canning of the stain. Canning occurs when the mixture reaches the 90% stage of completion. After canning, the cans are transferred to the shipping department. Here the cans are crated and shipped to various customers. Conversion costs are added uniformly throughout the process. The following are the actual production data for the canning department for April:

April Production Costs

Work in Process, April 1:

Direct materials- chemicals	\$ 72,000
Direct labour	18,000
Applied overhead	5,000

Costs added in April:

Direct materials-chemicals	\$336,000
Direct materials- cans	10,000
Direct labour	425,500
Applied overhead	115,000

Units for April:

Work in process inventory, April 1 (25% complete)	8,000 litres
Transferred to shipping department during April	40,000 litres
Started during April	42,000 litres
Work in process inventory, April 30 (80% complete)	10,000 litres

Instructions:

- Compute the cost per equivalent unit of production during the previous month for each of material-chemicals, and conversion costs;
- Compute the equivalent units in April for each of materials-cans, material-chemicals and conversion costs;
- Compute the ending work in process inventory for April;
- Compute the cost per equivalent unit of production of the units started and completed this period for each of materials-cans, material-chemicals, and conversion costs;
- Compute the cost per equivalent unit of production of the units started last period and completed this period for each of materials-cans, material-chemicals, and conversion costs;

Solution

a) Work in Process, April 1 (8,000 litres, 25% complete)			Equiv U	cost per unit
Direct materials- chemicals	2 MKS	\$ 72,000 /	8,000	\$ 9.00
Conversion costs	2 MKS	23,000 /	2,000	<u>\$11.50</u>
The cost per equivalent unit of production				<u>\$20.50</u>

	phys unit	DM-stain	DM-can	CC
Beginning WIP	8,000	0	8,000	6,000
S&C	32,000	32,000	32,000	32,000
Ending WIP	<u>10,000</u>	<u>10,000</u>	<u>0</u>	<u>8,000</u>
b) Equiv units	<u>50,000</u>	<u>42,000</u>	<u>40,000</u>	<u>46,000</u>
		1.5 MKS	1.5 MKS	1.5 MKS

c) Ending WIP = 10,000* 8.00 (chemical) + 0 can + 8,000* 11.75(CC) = \$174,000
1.5 MKS 1.5 MKS

d) Total Costs	\$336,000/42,000	\$10,000/40,000	\$540,500/46,000	
Cost per unit	\$8.00	0.25	11.75 =	<u>\$20.00</u>
	1.5 MKS	1.5 MKS	1.5 MKS	

e) Completed from Work in Process, April 1 (8,000 litres, 25% complete)	
Direct materials- chemicals-April 1 complete	\$ 72,000
Direct labour (\$15 per hour) April 1-2,000	18,000
Applied overhead April 1-2,000	5,000
Direct materials –cans- added April 8,000@0.25	2,000
DL + OH added April- 6,000@11.75	<u>70,500</u>
Cost per eq unit	\$167,500/8,000 = \$20.9375

OR

Total Costs of Work in Process, April 1: 1 MKS	\$95,000
Add to complete WIP	
Direct materials –cans- added April 8,000@0.25 1 MKS	2,000
DL + OH added April- 6,000@11.75 1 MKS	<u>70,500</u>
Total Costs	<u>\$167,500</u>
Work in process inventory, April 1 (25% complete)	8,000 litres
1 MK	\$167,500 / 8,000 = \$20.9375

QUESTION IV. 20 MARKS

The Canadian Motorcycle Company (CMC) produces two models of motorcycles: Faster and Slower. The company has five categories of overhead costs: purchasing, receiving, machine operating costs, handling, and shipping. Each category represents the following percentages of total overhead costs, which amount to \$4 million:

Purchasing	25.0%	Handling	10.0%
Receiving	12.5%	Shipping	15.0%
Machine operating	37.5%		

Current capacity is 200,000 machine hours, and the current production uses 100% of the available hours. The sales mix is 45% Faster and 55% Slower. The overhead costs are applied to each model based on machine hours.

The production costs for each model of motorcycle and other relevant information are as follows:

	Faster	Slower
Direct materials per unit	\$8,000	\$6,500
Direct labour per unit	\$1,750	\$1,850
Applied overhead	?	?
Number of units produced	400	500
Number of purchases	5	4
Number of shipments received	3	3
Percentage of machine hours consumed by each product	50%	50%
Number of moves in handling	75	100
Number of kilometres to ship to customers	4,000	4,250

Instructions

- CMC determines its prices by adding 40% to the cost of direct materials and direct labour. Determine if this pricing policy is appropriate. Show all calculations to support your answer.
- Use an activity-based approach to determine whether CMC can make a profit if it sells the Faster model for \$15,000. Show all supporting calculations. (Round all answers to the nearest dollar.)

(1) Computation of the overhead rate per unit: = TOTAL 7.5 MKS

$$\begin{array}{rclclcl}
 & & \text{Total} & & & & \\
 & & \text{Overhead} & & \text{\# of} & \text{Overhead} & \\
 & & \text{Cost} & & \text{units} & \text{per unit} & \\
 \text{2 MKS} & \text{Faster} & \frac{\text{Usage}}{50\%} \times \frac{\text{Overhead Cost}}{\$4,000,000} = \$2,000,000 & \div & \frac{400}{400} & = & \$5,000
 \end{array}$$

2 MKS Slower $50\% \times \$4,000,000 = \$2,000,000 \div 500 = \$4,000$

Profitability analysis using current pricing:

	<u>Faster</u>	<u>Slower</u>
Direct materials per unit	\$8,000	\$6,500
Direct labour per unit	1,750	1,850
Applied overhead per unit	5,000	4,000
Full cost	<u>\$14,750</u>	<u>\$12,350</u>
Selling price		
Materials at 140%	\$11,200	\$9,100
Labour at 140%	2,450	2,590
Selling price	<u>\$13,650</u>	<u>\$11,690</u>

EACH RED = 0.25 X 10 = 2.5 MKS

CMC should change its pricing policy. With the current approach, both models are sold at a price that is lower than full cost. **1 MK**

(b) Computation of the overhead rate per unit using ABC: **TOTAL MARKS 12.5**

Purchasing: $\$1,000,000^1 \div 9 = \$111,111$ per purchase **1 MK**

Receiving: $\$500,000^1 \div 6 = \$83,333$ per shipment received **1 MK**

Machining: $\$1,500,000^1 \div 200,000 = \7.50 per machine hour **1 MK**

Handling: $\$400,000^1 \div 175 = \$2,286$ per move **1 MK**

Shipping: $\$600,000^1 \div 8,250 = \73 per kilometer **1 MK**

¹ Use \$4,000,000 overhead costs × respective percentages

Assignment of overhead—	<u>Faster</u>
Purchasing \$111,111 × 5 purchases	0.5 MK \$555,555
Receiving \$83,333 × 3 shipments	0.5 MK 250,000
Machining: \$7.50 × 100,000 hours	0.5 MK 750,000
Handling \$2,286 × 75 moves	0.5 MK 171,450
Shipping \$73 × 4,000 kilometres	0.5 MK 292,000
Total overhead assigned	<u>\$2,019,005</u>
Number of units produced	400
Overhead assigned per unit	1.5 MK \$5,048

<u>Profitability Analysis</u>	<u>Faster</u>
Direct material per unit 0.5 MK	\$8,000
Direct labour per unit 0.5 MK	1,750
Overhead cost per unit 0.5 MK	<u>5,048</u>
Total per unit cost	14,798
Selling price 0.5 MK	<u>15,000</u>
Profit per unit 0.5 MK	<u>\$202</u>

According to activity-based costing, CMC would make a small profit of \$202 if it sold the Faster model for \$15,000. **1 MK**

QUESTION V. 20MARKS

Kirkland Corporation sells a single product for \$40. Its management estimates the costs of manufacturing and selling its product per unit at the company's average normal capacity of 1,000 units per month as follows:

Direct materials	\$12.00
Direct labour	\$7.20
Manufacturing overhead—variable	\$3.20
Manufacturing overhead—fixed	\$3.20
Selling expenses—variable	\$1.80
Selling expenses—fixed	\$2.40
Administrative expenses—variable	\$0.80
Administrative expenses—fixed	\$1.60

Instructions

- Assuming fixed costs and net sales are spread evenly throughout the year; calculate Kirkland's annual break-even point in (1) units and (2) dollars.
- Assuming Kirkland Corporation increases its selling price by 30% and all other factors (including demand) remain constant, determine by what percentage annual profits will increase.
- Assume the price remains at \$40 per unit and variable costs remain the same per unit, but fixed costs increase by 30% annually. Calculate the percentage increase in unit sales required to achieve the same level of annual profit at the current annual sales.
- Determine the sales dollars required to earn an annual operating income of \$72,000 before tax. Kirkland Corporation's income tax is 40%.

(a) Variable cost per unit:

Direct materials	\$12.00
Direct labour	7.20
Manu. Overhead -Variable	3.20
Selling expenses- Variable	1.80
Adm. Expenses - Variable	<u>0.80</u>
VC per Unit	<u><u>\$25</u></u>

Contribution margin per unit: $\$40 - \$25 = \$15$ 2 MKS

(a) Total fixed costs per year:

Manu. Overhead -fixed	\$3.20
Selling expenses- fixed	2.40
Adm. Expenses - fixed	<u>1.60</u>
Per unit 1 MK	\$7.20

Per year $\$7.20 \times 1000 \text{ units} \times 12 = \$86,400$ **2 MKS**

Kirkland's annual break-even point in

(1) units = $\$86,400 \div \$15 = 5,760 \text{ units}$ **1 MK**

(2) dollars = $5,760 \times \$40 = \$230,400$ **1 MK**

OR

$\$86,400 / \text{CMR } 0.375 = \$230,400$

(b) 30% increase in selling price: $\$40 \times 0.30 = \12 per unit **1 MK**

Increase in contribution margin and profit: $12,000 \text{ units} \times \$12 = \$144,000$ **2 MKS**

Current profit = $12,000 \times \text{CM } \$15 - \text{FC } \$86,400 = \$93,600$ **2 MK**

Percent increase in profit: $\$144,000 \div \$93,600 = 154\% \text{ (rounded)}$ **1 MK**

(c) Increase in fixed costs: $\$86,400 \times 0.30 = \$25,920$ **1 MK**

Increase in CM required to cover increased fixed costs: $\$25,920$ **1 MK**

Increase in unit sales required: $\$25,920 \div \$15 = 1,728 \text{ units}$ **2 MK**

Percent increase in unit sales: $1,728 \div 12,000 = 14.4\%$ **1 MK**

(d) Target sales in \$: $(\$86,400 + \$72,000) \div \$15 = 10,560 \times \$40 = \$422,400$ **2 MK**

OR

Target sales in \$: $(\$86,400 + \$72,000) \div 0.375 = \$422,400$