

École de Gestion  
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## INSTRUCTIONS

1. ANSWER ALL QUESTIONS IN THE EXAMINATION BOOKLET THAT HAS BEEN PROVIDED TO YOU.
2. BE SURE TO RETURN THE EXAM ALONG WITH THE EXAMINATION BOOKLET AT THE END OF THE EXAM.
3. BE SURE TO PUT YOUR NAME AND STUDENT I.D. NUMBER ON THE EXAM AND THE EXAMINATION BOOKLET.
6. START EACH QUESTION ON A NEW PAGE IN THE EXAMINATION BOOKLET.
7. IT IS VERY IMPORTANT TO WRITE THE NAME OF YOUR INSTRUCTOR AND SECTION LETTER/NUMBER ON YOUR EXAMINATION BOOKLET(S).

**Good Luck!**

## Question 1 (12 Multiple Choice Questions)

(15 marks)

Do not answer on the EXAM; write your answers in the EXAMINATION BOOKLET.

1. Upon which of the following does managerial accounting place considerable weight?
- A) Generally accepted accounting principles.
  - B) The financial history of the entity.
  - C) Ensuring that all transactions are properly recorded.
  - D) Detailed segment reports about departments, products, and customers.

(1 mark)

2. Selected information about Buehler Corporation's operations at high and at low levels of activity follow:

	<u>Level of activity</u>	
	<u>Low</u>	<u>High</u>
Number of units produced	25,000	30,000
Total manufacturing costs	\$575,000	\$680,000
Direct material cost per unit	\$5	\$5
Direct labor cost per unit	\$6	\$6

Using the high-low method, what is the cost formula for manufacturing overhead?

- A) \$50,000 per period plus \$10 per unit.
- B) \$50,000 per period plus \$21 per unit.
- C) \$50,000 per period plus \$22 per unit.
- D) \$347,000 per period plus \$0.10 per unit.

(2 marks)

3. For the current year, Paxman Company incurred \$150,000 in actual manufacturing overhead cost. The Manufacturing Overhead account showed that overhead was overapplied in the amount of \$6,000 for the year. If the predetermined overhead rate was \$8.00 per direct labour hour, how many hours were worked during the year?

- A) 17,750 hours.
- B) 18,000 hours.
- C) 18,750 hours.
- D) 19,500 hours.

(1 mark)

4. At a sales level of \$300,000, James Company's gross margin is \$15,000 less than its contribution margin, its net income is \$50,000, and its total selling and administrative expenses are \$120,000. At this sales level, what is the company's contribution margin?

- A) \$155,000.
- B) \$170,000.
- C) \$185,000.
- D) \$250,000.

(2 marks)

5. Which of the following would be considered a product cost for external financial reporting purposes?
- A) Cost of a warehouse used to store finished goods.
  - B) Cost of guided public tours through the company's facilities.
  - C) Cost of travel necessary to sell the manufactured product.
  - D) Cost of sand spread on the factory floor to absorb oil from manufacturing machines.
- (1 mark)**
6. The Samuelson Company uses a job-order costing system. The following data were recorded for June:

Job Number	Work in Process Inventory, June 1	Added During June	
		Direct Materials	Direct Labour
475	\$1,000	\$ 400	\$ 200
476	\$ 900	\$ 600	\$ 800
477	\$ 800	\$ 900	\$1,400
478	\$ 600	\$1, 000	\$1, 900

- Overhead is charged to production at 70% of the direct materials cost. Jobs 475, 477, and 478 have been delivered to the customer. What was Samuelson's Work in Process inventory balance on June 30?
- A) \$6,450.
  - B) \$2,860.
  - C) \$2,300.
  - D) \$2,720.
- (2 marks)**
7. In a job-order costing system, when a job remains incomplete at the end of a period, how is the amount of overhead cost that has been applied to that job treated?
- A) It is deducted on the Income Statement as overapplied overhead.
  - B) It is closed out to Cost of Goods Sold.
  - C) It is transferred to Finished Goods.
  - D) It is part of the ending balance of the Work in Process inventory account
- (1 mark)**
8. What is a cost driver?
- A) It is the largest single category of cost in a company.
  - B) It is a fixed cost that cannot be avoided.
  - C) It is a factor that causes variations in a cost.
  - D) It is an indirect cost that is essential to the business.

**(1 mark)**

9.	If prime cost=\$50,000, conversion cost=82,000, manufacturing overhead=\$57,000, the costs for direct materials and total manufacturing cost are:	
	Direct materials	Total Manufacturing costs
A)	\$25,000	\$107,000
B)	\$23,000	\$132,000
C)	\$25,000	\$132,000
D)	\$25,000	\$105,000

**(1 mark)**

10.	Which costs will change with a decrease in activity within the relevant range?	
A)	Total fixed costs and total variable costs	
B)	Unit variable cost and unit fixed cost	
C)	Unit fixed cost and total variable cost	
D)	Unit fixed cost and total fixed costs	

**(1 mark)**

11.	Relevant range is a range of output over which:	
A)	A practical capacity remains constant	
B)	Cost-output relationship remains valid	
C)	Fixed costs per unit remain constant	
D)	Both B) and C)	

**(1 mark)**

12.	Product costs are expensed when the product is:	
A)	Purchased	
B)	Manufactured	
C)	Inventoried	
D)	Sold	

**(1 mark)**

**Question 2****(25 marks)**

Keating Company manufactures a product that passes through three departments. In Department C, materials are added at the end of the process. Conversion costs are incurred uniformly throughout the process. During January, Department C received 20,000 units from Department B. The transferred-in cost of the 20,000 units was \$70,350.

The following costs were added by Department C during January:

Direct materials	\$40,635
Direct labour	58,500
Overhead applied	29,400

On January 1, Department C had 4,000 units in inventory; these units were 30% complete with respect to conversion costs. On January 31, 3,000 units were in inventory, one-third complete with respect to conversion costs. The costs associated with the 4,000 units in beginning inventory were as follows:

Transferred-in	\$14,970
Direct labour	7,560
Overhead applied	4,200

**Required**

Prepare a production report using the weighted average method following the 5 steps:

1. Analysis of the flow of physical units (3 marks)
2. Calculation of equivalent units (6 marks)
3. Computation of unit cost (13 marks)
4. Valuation of goods transferred-out and ending WIP (2 marks)
5. Cost reconciliation (1 mark)

**Question 3****(25 marks)**

SNC produces fire trucks. The company uses a normal job-order costing system to compute its cost of goods manufactured. The company's policy is to price its job at cost plus 20% markup. On January 1, 2006 there was only one job in process with the following costs:

	Job 315
Direct materials	\$ 3,125
Direct labour	\$15,000
Applied overhead	\$14,250
Total	\$32,375

The following balances were taken from the general ledger of the company as of January 1, 2006:

Direct materials inventory	\$30,000
Finished goods inventory (for Job 314)	\$55,000

During the year 2006, the following events occurred:

Direct materials were purchased on account for \$250,000

Two more jobs were started: Job 316 and Job 317. Direct materials and direct labour costs incurred by each job in process during the year 2006 are as follows:

	Job 315	Job 316	Job 317
Direct materials	\$150,000	\$30,000	\$10,000
Direct labour	\$150,000	\$35,000	\$15,000

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

Factory rent	\$90,000
Factory supplies	\$43,000
Indirect labour	\$60,000

Jobs 315 and 316 were completed.

Jobs 314 and 315 were sold.

Required:

1. If the factory overhead costs are applied to each job on the basis of direct labour dollars, what is the total applied overhead for the year 2006? (3 marks)
2. Prepare simple job-order cost sheets for jobs 315, 316 and 317 for the year ended December 31, 2006. (8 marks)
3. Is overhead over-applied or under-applied? By how much? (3 marks)
4. Prepare a schedule of Cost of Goods Sold, identifying both normal and adjusted cost of goods sold, for the year ended December 31, 2006. (7 marks)
5. Compute the selling price of Job 315. (2 marks)
6. Compute the ending balances as of December 31, 2006 for the following accounts: direct materials and work-in-process (2 marks)

**Question 4****(20 Marks)**

ABC Inc. installed an activity based costing system several years ago. The company manufactures one product in a single facility and has identified five major activity centers relating to the manufacturing overhead.

Activity Centre	Cost driver	Estimated Overhead	Expected Activity
Labour related	Direct labour hours	\$280,000	40,000 DLH
Purchase orders	Number of orders	\$96,000	1,200 orders
Product testing	Number of tests	\$420,000	3,500 tests
Template etching	Number of templates	\$315,000	10,500 templates
General factory	Machine hours	\$810,000	90,000 machine hours

Each unit requires 4 kilograms of direct material at \$75.00 per kilogram, and 60 hours of direct labour at \$20.00 per hour. Each unit also requires the following activities:

- 2 purchase orders
- 1 test
- 15 templates
- 45 machine hours

Required:

1. Compute the overhead rate for each activity center. (5 marks)
2. Compute the product cost per unit using activity-based costing. What would be the selling price if the company charged a 40% mark-up on cost? (7 marks)
3. How would the product cost and the selling price compare to the results obtained in part (2), if the company had used estimated machine hours as the cost driver? (6 marks)
4. Briefly explain why activity-based costing is better than using one activity driver such as machine hours for the whole plant. (2 marks)

**Question 5****(15 marks)**

The data below has been taken from the cost records of the Parker Company. The data relate to the manufacturing costs of producing one of its products and number of units produced.

Month	Units Produced	Total Direct Materials Costs	Total Direct Labour Costs	Total Overhead Costs
January	8,000	\$12,000	\$4,000	\$20,000
February	4,500	6,750	2,250	13,000
March	7,000	10,500	3,500	18,500
April	9,000	13,500	4,500	23,500
May	3,750	5,625	1,875	10,500
June	6,000	9,000	3,000	16,500
July	3,000	4,500	1,500	8,500
August	5,000	7,500	2,500	14,500

**Required:**

- a. Using High-Low Point Method, estimate the total monthly fixed manufacturing costs and the variable manufacturing cost per unit. **(5 marks)**
- b. Assume that 4,800 units are expected to be produced in the month of September, and then compute the following expected costs for the month of September:
  1. Total prime costs. **(2 marks)**
  2. Total conversion costs. **(2 marks)**
  3. Total manufacturing costs. **(2marks)**
  4. Variable manufacturing overhead costs per unit. **(2marks)**
  5. Fixed manufacturing overhead costs per unit. **(2marks)**

**END of EXAM**



**Question 2 (25 marks)**

	EQUIVALENT UNITS				
	physical units	transferred in	DM	Conversion	
units to account for					
WIP ending balance	3000	3000		1000	
completed	21000	21000	21000	21000	
total	24000	24000	21000	22000	
	3 marks	2 marks	2 marks	2 marks	9 marks
	costs				
cost to account for					
transferred-in	\$70,350	\$70,350			
WIP beginning balance	\$26,730	\$14,970		\$11,760	
manufacturing cost	\$128,535		\$40,635	\$87,900	
total	\$225,615	\$85,320	\$40,635	\$99,660	
	4 marks	2 marks	2 marks	2 marks	10 marks
cost/EU	\$10.02	\$3.56	\$1.94	\$4.53	
		1 mark	1 mark	1 mark	3 marks
COGM	\$210,420	\$74,655	\$40,635	\$95,130	
WIP ending balance	\$15,195	\$10,665	\$0	\$4,530	
total	\$225,615				3 marks

CONCORDIA UNIVERSITY  
DEPARTMENT OF ACCOUNTANCY  
JOHN MOLSON SCHOOL OF BUSINESS

MANAGERIAL ACCOUNTING  
COMM 305 & ACCO 240  
ALL SECTIONS

**FINAL EXAMINATION**

**FALL 2006**

**PLEASE READ THIS PAGE – IT CONTAINS IMPORTANT INFORMATION**

1. This examination will last Three **(3)** hours and consists of Five **(5)** Questions printed on Nine **(9)** pages including this page. Make sure your copy of the exam is complete before starting.
2. Write all your answers (including answers to multiple-choice statements) in the lined examination answer booklet that has been provided to you separately. You may answer the Questions in any order. In front of the booklet place the number associated to the order in which they are done.
3. Your answers may be written in pencil or ink.
4. Read the Questions carefully and budget your time carefully. Show details of all work and calculations in order to benefit from part marks, except for Multiple-choice questions. Attempt all Questions.
5. This is a closed book examination; no reference to notes, etc. is allowed. However, a silent hand-held four-function calculator and one standard (not electronic) dictionary are permitted.
6. Invigilators will not answer questions, unless you think there is an error in the examination questionnaire.
7. When you have finished submit your exam booklet(s) and this questionnaire. Please enumerate your exam booklets.

Question	Topic	Minutes	Marks
1	Multiple-choice	2 minutes per MC	37.5
2	Manufacturing Statement	30 minutes	15
3	Cash Budget	40 minutes	15
4	Budget Variance Analysis	40 minutes	18
5	Incremental and Relevant analysis	40 minutes	15
	Total	180 minutes	100

**QUESTION 1. (37, 25 multiple choice questions 1.5 marks each) (2 minutes per MC)**

Choose the best answer for each of the following. Write your answer only in the lined booklet that has been provided to you separately.

Use the following information for items 1-3:

The Colin Division of Mochrie Company sells its product for \$30 per unit. Variable costs per unit are: manufacturing, \$12; and selling and administrative, \$2. Fixed costs are: \$200,000 manufacturing overhead, and \$50,000 selling and administrative. There was no beginning inventory at 1/1/05. Expected sales for next year is 40,000 units. Ryan Stiles, the manager of the Colin Division, is under pressure to improve the performance of the Division. As he plans for next year, he has to decide whether to produce 40,000 units or 50,000 units.

1. What would the manufacturing cost per unit be under variable costing for each alternative?

	<u>40,000 units</u>	<u>50,000 units</u>
a.	\$12.00	\$12.00
b.	\$14.00	\$14.00
c.	\$16.00	\$17.00
d.	\$17.00	\$16.00
e.	None of the above	

2. What would the net income be under absorption costing for each alternative?

	<u>40,000 units</u>	<u>50,000 units</u>
a.	\$390,000	\$390,000
b.	\$390,000	\$430,000
c.	\$390,000	\$440,000
d.	\$430,000	\$390,000
e.	None of the above	

3. What would the net income be under variable costing for each alternative?

	<u>40,000 units</u>	<u>50,000 units</u>
a.	\$390,000	\$390,000
b.	\$390,000	\$430,000
c.	\$390,000	\$440,000
d.	\$430,000	\$390,000
e.	None of the above	

4. What information is found on the direct materials budget?

- I. How many units of direct materials should be purchased?
  - II. How much is the cost of direct materials to be purchased?
- a. I only
  - b. II only
  - c. Both I and II
  - d. Neither I nor II
  - e. None of the above

Use the following information for questions 5-6.

The Wood Division of Fir Products, Inc. manufactures wood moldings and sells them externally for \$100. Its variable cost is \$40 per unit, and its fixed cost per unit is \$14. Fir's president wants the Wood Division to transfer 5,000 units to another company division at a price of \$54.

5. Assuming the Wood Division has available capacity of 5,000 units, the minimum transfer price it should accept is
  - a. \$14.
  - b. \$40.
  - c. \$54.
  - d. \$100.
  - e. None of the above.
  
6. Assuming the Wood Division does **not** have any available capacity, the minimum transfer price it should accept is
  - a. \$14.
  - b. \$40.
  - c. \$54.
  - d. \$100
  - e. None of the above.
  
7. Drive, Inc. determined its estimated production for the month are 300,000 units. Each unit requires 2 kilograms of material. The beginning direct materials are 1% of the current months expected needs. Ending inventory desired is 7,500 kilograms. How much are estimated direct materials purchases in kilograms?
  - a. 601,500 kilograms
  - b. 607,500 kilograms
  - c. 301,500 kilograms
  - d. 598,500 kilograms
  - e. None of the above
  
8. A company has a process that results in 4,000 kilograms of Product X that can be sold for \$7 per kilogram. An alternative would be to process Product X further at a cost of \$4,000 and then sell it for \$12 per kilogram. Should management sell Product X now or should Product X be processed further and then sold?
  - a. Process further, the company will be better off by \$44,000.
  - b. Sell now, the company will be better off by \$44,000.
  - c. Process further, the company will be better off by \$1,000.
  - d. Sell now, the company will be better off by \$16,000.
  - e. None of the above

9. Roasted Toasters prepared a 2006 budget for 40,000 units of product. Actual production in 2006 was 45,000 units. To be most useful, what amounts should a performance report for this company compare?
- a. The actual results for 45,000 units with the original budget for 40,000 units
  - b. The actual results for 45,000 units with a new budget for 45,000 units
  - c. The actual results for 45,000 units with last year's actual results for 47,000 units
  - d. It doesn't matter. All of these choices are equally useful.
  - e. None of the above
10. The direct materials budget shows:
- |                                 |                  |
|---------------------------------|------------------|
| Desired ending direct materials | 2,000 kilograms  |
| Materials purchased             | 51,400 kilograms |
| Beginning inventory on hand     | 1,200 kilograms  |
- How much are the total direct materials needed for production?
- a. 50,600 kilograms
  - b. 52,600 kilograms
  - c. 52,200 kilograms
  - d. 51,400 kilograms
  - e. None of the above
11. Management of the Catering Company would like the Food Division to transfer 10,000 cans of its final product to the Restaurant Division for \$80. The Food Division sells the product to customers for \$140 per unit. The Food Division's variable cost per unit is \$60 and its fixed cost per unit is \$20. The Food Division is currently operating at full capacity. What is the minimum transfer price the Food Division should accept?
- a. \$20
  - b. \$60
  - c. \$80
  - d. \$140
  - e. None of the above
12. Which cost is not charged to the product under variable costing?
- a. direct materials.
  - b. direct labour.
  - c. variable manufacturing overhead.
  - d. fixed manufacturing overhead
  - e. None of the above

13. In cost-plus pricing, the target selling price is calculated as
- variable cost per unit + desired ROI per unit.
  - fixed cost per unit + desired ROI per unit.
  - total unit cost + desired ROI per unit.
  - variable cost per unit + fixed manufacturing cost per unit + desired ROI per unit.
  - None of the above
14. The cost to produce Part A was \$10 per unit in 2006. During 2007, it has increased to \$11 per unit. In 2007, Supplier Company has offered to supply Part A for \$9 per unit. For the make-or-buy decision,
- incremental revenues are \$2 per unit.
  - incremental costs are \$1 per unit.
  - net relevant costs are \$1 per unit.
  - differential costs are \$2 per unit.
  - None of the above
15. Specik, Inc. is considering the following alternatives:
- |                | <u>Alternative 1</u> | <u>Alternative 2</u> |
|----------------|----------------------|----------------------|
| Revenues       | \$120,000            | \$120,000            |
| Variable costs | 60,000               | 70,000               |
| Fixed costs    | 35,000               | 39,000               |
- Which of the following are relevant in choosing between the alternatives?
- Variable costs
  - Revenues
  - Fixed costs
  - Variable costs and fixed costs
  - None of the above
16. If sales equals production in the long run,
- absorption costing income will exceed variable costing income.
  - absorption costing income will equal variable costing income.
  - variable costing income will exceed absorption costing income.
  - absorption costing income may be greater than, equal to, or less than variable costing income depending on the situation.
  - All of the above

17. When production exceeds sales,
- A) Ending inventory under variable costing will exceed ending inventory under absorption costing
  - B) Ending inventory under absorption costing will exceed ending inventory under variable costing.
  - C) Ending inventory under absorption costing will be equal to ending inventory under variable costing.
  - D) Ending inventory under absorption costing may exceed, be equal to, or be less than ending inventory under variable costing.
  - E) All of the above
18. Physical units are 40,000. Total conversion costs are \$197,500. There are 1,000 units in ending inventory which are 50% complete as to conversion costs. How much are conversion costs per unit if the weighted average method is used?
- A) \$5.00
  - B) \$4.93
  - C) \$9.88
  - D) \$4.82
  - E) None of the above
19. Merck Pharmaceuticals is evaluating its Vioxx division, an investment centre. The division has a \$45,000 controllable margin and \$300,000 of sales. How much will Merck's average operating assets be when its return on investment is 10%?
- a. \$450,000
  - b. \$495,000
  - c. \$300,000
  - d. \$255,000
  - e. None of the above
20. Which one of the following measures is frequently used to evaluate the performance of the manager of an investment centre, but **not** profit centres?
- a. The amount of profit generated
  - b. The percentage increase in profit over the previous year
  - c. Controllable margin
  - d. The rate of return on funds invested in the centre
  - e. All of the above
21. The following information is available for Aggie Auto Sales:
- |                          |           |
|--------------------------|-----------|
| Average operating assets | \$800,000 |
| Controllable margin      | 80,000    |
| Contribution margin      | 200,000   |
| Minimum rate of return   | 8%        |
- How much is Aggie Auto's residual income?
- a. \$136,000
  - b. \$720,000
  - c. \$16,000
  - d. \$64,000
  - E) None of the above

22. Safety Seats Company recorded operating data for its shoe division for the year. The company's desired return is 5%.

Sales	\$500,000
Contribution margin	100,000
Total direct fixed costs	60,000
Average total operating assets	200,000

- Which one of the following reflects the controllable margin for the year?
- a. 20%
  - b. 50%
  - c. \$30,000
  - d. \$40,000
  - E) None of the above
23. The difference between overhead budgeted and overhead applied is the
- a. budget variance.
  - b. controllable variance.
  - c. total overhead variance.
  - d. volume variance.
  - e. None of the above
24. The difference between actual overhead costs and overhead costs applied is the
- a. budget variance.
  - b. controllable variance.
  - c. total overhead variance.
  - d. volume variance.
  - E) None of the above
25. Each of the following may cause an unfavourable controllable variance **except**
- a. higher than expected use of indirect materials.
  - b. greater than expected use of indirect labour.
  - c. increases in indirect manufacturing costs.
  - d. inefficient use of direct labour.
  - E) None of the above



**QUESTION 2. Manufacturing Statement (15 Marks) ( 30 minutes)**

XYZ Company, reports the following data for the month of June.

	June 1	June 30
Direct materials	\$ 70,000	\$ 40,000
Work-in-progress	\$160,000	\$120,000
Finished goods	\$ 210,000	\$200,000

The following information is available for the month of June.

Direct materials purchases were \$100,000.

Direct costs of production were \$ 210,000.

Variable costs of production were \$ 260,000.

Indirect costs of production were \$150,000.

Selling and administrative costs were \$240,000.

**REQUIRED: SHOW YOUR COMPUTATIONS. (1.5 mark each)**

1. What were the total costs of production?
2. What was the cost of materials used?
3. What was the cost of direct labour?
4. What was the cost of variable overhead?
5. What was fixed manufacturing overhead?
6. What was cost of goods manufactured?
7. What was cost of goods sold?
8. What were conversion costs?
9. What were prime costs?
10. What were period costs?

**QUESTION 3. Cash Budget (15 Marks) (40 minutes)**

Ryan Richards, controller for Grange Retailers, has assembled the following data to assist in the preparation of a cash budget for July and August 2005. As at July 1<sup>st</sup> the company has a beginning cash balance of \$ 13 500:

Sales:

May (actual)	\$100,000
June (actual)	120,000
July (estimated)	170,000
August (estimated)	100,000
September (estimated)	135,000
October (estimated)	110,000

The company's gross margin is 20%.

Each month, 30 percent of sales are collected in cash and 70 percent are on credit. The collection pattern for credit sales is 20 percent in the month of sale, 50 percent in the following month, and 30 percent in the second month following the sale.

The records for purchases and beginning inventory for June 1st and projected figures for the coming quarter:

	June	July	August	September
Cost of sales	\$96,000	136,000	80,000	108,000
Desired end Inv	<u>68,000</u>	? (a)	? (d)	<u>44,000</u>
Total requirements	164,000	? (b)	? 134,000	152,000
Less beg. Inventory	<u>80,000</u>	<u>36,000</u>	? (e)	<u>54,000</u>
Purchases	84,000	? (c)	? (f)	98,000

The desired ending inventory is 50% of the next months cost of sales. Inventory purchases are paid for in the month following the purchase and no discounts are taken.

The under noted expenses are incurred each month and are paid in the same month.

Salaries and wages	10,000
Depreciation on plant and equipment	4,000
Utilities	1,000
Other expenses	1,700

Additional information:

- A new truck for \$ 120,000 will be bought and paid for in July and an old truck will be disposed in the same month for cash proceeds of \$ 22,000.
- Common shares were sold for \$ 100,000 and cash was received in August 2005.
- Property taxes of \$15,000 are to be paid 50% in July and 50% in August 2005.
- Advertising fees of \$12,000 were paid 50% in July and 50% in August 2005.
- Dividends for \$ 3,000 are to be paid in August 2005.
- The company has a policy of maintaining a minimum cash balance of \$10,000. If necessary, it will borrow to meet its short-term needs. All borrowing is done at the beginning of the month. All payments on principal and interest are made at the end of a month. The annual interest rate is 9 percent. The bank will finance exact amounts needed. If there is excess cash the borrowed funds can be repaid.

**Instructions:**

- Provide your answers for the purchases table indicating letters a to f. (6 marks)
- Prepare a schedule for cash collections for JULY and AUGUST only. (9 marks)

**QUESTION 4. Budget variance analysis (18 marks) (40 minutes)**

Stephen Roget, a financial analyst for Croton Industries, Inc., has been given information with respect to standard cost variances for one of the plants. These variances are given below.

Materials quantity variance . . . . .	\$ 7,000 favourable
Labour rate variance . . . . .	4,000 favourable
Labour efficiency variance . . . . .	12,000 unfavourable
Factory overhead spending variance. . . . .	3,000 favourable
Factory overhead efficiency variance. . . . .	6,000 unfavourable
Factory overhead volume variance . . . . .	50,000 favourable

He has determined that the company has manufactured 50,000 units of product with standard costs as follows:

Direct materials . . . . .	\$ 700,000
* Direct labour . . . . .	300,000
Variable factory overhead . . . . .	150,000
Fixed factory overhead . . . . .	250,000
	-----
Total standard cost	\$ 1,400,000
	=====

\* Standard labour time per product unit is 30 minutes.

The actual fixed factory overhead was equal to the master budgeted fixed factory overhead. Roget would like to use the variances to develop some of the cost data for the fiscal period.

**REQUIRED: SHOW YOUR COMPUTATIONS. (2 marks each)**

1. How many units of product should be manufactured at the master budget capacity?
2. Determine the total fixed factory overhead for the master budget.
3. How many direct labour hours should have been used to manufacture 50,000 units of product?
4. How many direct labour hours were used?
5. What were the total actual costs of direct labour?
6. What were the total standard costs of the direct materials used in production?
7. What was the actual variable factory overhead cost?
8. What was the budget variable factory overhead for actual time used to manufacture the 50,000 units of product?
9. What was the budget variable factory overhead for the required time to manufacture the 50,000 units of product?

**QUESTION 5. (15 marks) Incremental and relevant analysis (40 minutes)**

Collen Aerospace has a five-year contract to supply Bombardier with four specific spare parts for its fleet of airplanes. The following table provides information on selling prices, costs, and the number of units of each part that the company needs to produce annually according to the contract with Bombardier :

	A10	A20	A30	A40
Sales	\$1,500,000	\$875,000	\$450,000	\$2,400,000
Variables costs	1,235,000	425,000	187,000	1,875,000
Contribution margin	\$ 265,000	\$450,000	\$263,000	\$ 525,000
Production in units	1,000	250	750	600
Machine hours/unit	2	4	1.5	3

Fixed overhead costs amount to \$820,000 and are allocated based on the number of units produced. The company has a maximum annual capacity of 6,000 machine hours.

**Instructions**

- (a) If Collen Aerospace could manufacture only one of the four parts, which spare part should it produce, based on the contribution margin? Explain why. ( 4 Marks)
- (b) Canadian Airline wants to buy 200 units of part A10 at 125% of the price currently paid by Bombardier. Assume that for any of the four parts, Collen Aerospace has to supply Bombardier with at least 90% of the number of units specified in the contract. Should Collen Aerospace accept the order for 200 units of part A10? Show all your calculations ( 6 Marks)
- (c) A new technology is available that costs \$2.5 million and would increase Collen Aero Space's annual capacity by 15%. Should the company purchase the new technology? Assume that the technology has an estimated life of four years and that Collen Aerospace can sell, at the same prices paid by Bombardier, all the units it can produce of any of the four parts. Show all your calculations. ( 5 Marks)

**SOLUTION QUESTION 1. (22.5, 15 multiple choice questions 1.5 marks each)**

1	A
2	B
3	A
4	C
5	B
6	D
7	A
8	E
9	B
10	A
11	D
12	D
13	C
14	D
15	D

- 16. b
- 17. b
- 18. a
- 19. a
- 20. d
- 21. c
- 22. d
- 23. d
- 24. c
- 25. d

✓ = ½ marks

**SOLUTION QUESTION 2. Manufacturing Statement (15 Marks)**

STUDENTS CAN SHOW THEIR CALCULATIONS IN VARIOUS WAYS INCLUDING EQUATIONS

Direct Material

Beg Inv. DM \$ 70,000✓	
Purchases <u>\$100,000✓</u>	
RM available \$ 170,000	
End Inv. <u>\$40,000</u>	
DM used \$ 130,000✓	\$ 130,000 (2)
Direct Labour	\$ 80,000 ✓ (3)
( 210,000✓-130,000✓)	
Variable OH (260,000✓-130,000-80,000)	✓✓\$50,000 (4)
Fixed OH	<u>\$ 100 000 (5)</u>
Total costs of production	✓\$ 360 000 (1)
(direct✓ \$210 000+indirect ✓\$150 000 =360 000)	
Beginning work in progress	\$✓ 160 000
Less Ending Work in progress	✓ <u>(\$ 120,000)</u>
Cost of goods manufactured	✓\$ 400 000 (6)

Beg Inv	\$ 210,000✓
Plus C G Man	<u>\$ 400,000</u>
Good available	\$ 610,000
Less end inv	<u>\$ 200,000✓</u>
Cost of goods sold	\$ 410,000 (7) ✓

Marks **1.5** each broken down

1. Total costs of production: 210 000✓+ 150 000✓= \$360 000✓
2. Cost of materials used \$ 130,000
3. Cost of direct labour \$ 80,000
4. Cost of variable overhead \$ 50,000
5. Fixed manufacturing overhead  
60 000✓-50 000-80 000-130 000-160 000= \$100 000✓✓
6. Cost of goods manufactured \$ 400 000✓✓✓
7. Cost of goods sold: \$410 000
8. Conversion costs 80 000✓ + 50 000✓+100 000✓= \$ 230 000
9. Prime costs: 130 000✓ + 80 000✓= 210 000 ✓
10. Period costs: \$ 240,000 selling and administrative 1.5 marks

**SOLUTION QUESTION 3. Cash Budget (22 marks)**

Solution: (3 marks)

½ mark each A TO F

	<b>June</b>	<b>July</b>	<b>August</b>	<b>September</b>
Cost of sales	\$96,000	136,000	80,000	108,000
Desired end. Inven.	<u>36,000</u>	<b><u>40,000 (a)</u></b>	<b><u>54,000 (d)</u></b>	<u>44,000</u>
Total requirements	132,000	<b>152,000(b)</b>	134,000	152,000
Less beg. Inventory	<u>80,000</u>	<u>36,000</u>	<b><u>40,000 (e)</u></b>	<u>54,000</u>
Purchases	84,000	<b>116,000(c )</b>	<b>94,000 (f)</b>	98,000
	=====	=====	=====	=====

Cash Collections ( 4 marks )

½ mark each

	<b>July</b>	<b>August</b>
Cash sales	\$ 51 000✓	\$ 30 000✓
Credit sales		
Month of sale	\$ 34 000✓	\$ 20 000✓
Month following sale	\$ 60 000✓	\$ 85 000✓
Second month following sale	<u>\$ 30 000✓</u>	<u>\$ 36 000✓</u>
	\$ 175 000	\$ 171 000

**THE STUDENTS ARE NOT PENALISED FOR THE ORDER NOR THE SUB HEADINGS**

Maximum 15 marks

**Grange Retailers**  
**Cash Budget**  
**For the months ending July and August 2005**

	July	August
Beg cash	√13,500	√10,000
<u>Cash from operations</u>		
Inflow		
Collections from customers	√175,000	√171,000
Disbursements		
Purchases	√ (84,000)	√ (116,000)
Salaries and wages	√ (10,000)	√ (10,000)
Utilities	√ (1,000)	√ ( 1,000)
Other	√ ( 1,700)	√ ( 1,700)
Property taxes	√ ( 7,500)	√ ( 7,500)
Advertising expenses	√ ( 6,000)	√ ( 6,000)
<u>Cash from Investments</u>		
Inflow		
Sale of vehicle	√22,000	
Outflow		
Acquired new truck	√ (120,000)	
<u>Cash from Financing</u>		
Inflow		
Issue of shares		√100,000
Outflow		
Paid dividends		√ ( 3,000)
Excess or deficiency	√ (19,700)	√135,800
Minimum cash required	√10,000	√10,000
Financing needed	√29,700	
Repayments		√√ (29,700)
Interest		√ ** ( 223)
Cash balance	√10,000	√105,877

**If students include depreciation deduct 1 mark**\*\*Interest :  $29700 \times 1/12 \times .09$



**SOLUTION QUESTION 4. Budget Variance Analysis (18 Marks)**

DM

Actual x Actual	Actual x Standard	Standard X Standard
-----	-----	-----
	\$693,000	\$700,000
-----	-----	-----
PV	EV	
----- -----	-----\$7,000 (F)-----	

DL

Actual x Actual	Actual x Standard	Standard X Standard
-----	-----	-----
\$308,000	\$312,000	\$300,000
-----	-----	-----
PV	EV	
-----\$4,000 (F) -----	-----\$12,000 (U)-----	
-----\$8,000 (U)-----		

VOH

Actual	Actual x Standard	APPLIED
-----	-----	-----
\$153,000	\$156,000	\$150,000
-----	-----	-----
SPV	EV	
-----\$3,000 (F) -----	-----\$6,000 (U)-----	
-----\$3,000 (U)-----		

FOH

Actual	Budgeted	Applied
-----	-----	-----
	\$200,000	\$250,000
-----	-----	-----
-----0-----	-----\$50,000 (F)-----	

**2 marks each. Partial marks can be allotted.**

1. Standard fixed overhead per unit =  $\$250,000 \div 50,000 = \$5$   
 Therefore master budget capacity =  $\$50,000 \div \$5 =$   
 Actual production 50,000 - 10,000 = 40,000 units  
 Or  $250,000 - 50,000 = 200,000 / 5 \text{ Master Bud} / \$5 = 40,000 \text{ Units. (2 marks)}$
2. Total for the master budget =  $\$250,000 - \$50,000 = \$200,000 \text{ (2 marks)}$
3. D hrs should have been used to manufacture 50,000 units  
 $= 50,000 \times 5\text{hrs} = 25,000 \text{ hrs. (2 marks)}$
4. Total DLhrs used =  $\$300,000 \div 25,000 \text{ bhrs.} =$   
 $\$12 \text{ standard direct labour hour,}$   
 Therefore, DLhrs used =  $\$312,000 \div \$12 = 26,000 \text{ hrs. (2 marks)}$
5. Total actual costs of DL =  $\$312,000 - \$4,000 = \$308,000 \text{ (2 marks)}$
6. Total s. costs of DM used =  $\$700,000 - \$7,000 = \$693,000 \text{ (2 marks)}$
7. The actual VOH costs =  $\$150,000 + \$6,000 - \$3,000 = \$153,000 \text{ (2 marks)}$
8. The budget variable factory overhead for actual time  
 Used =  $\$150,000 + \$6,000 = \$156,000 \text{ (2 marks)}$
9. The budget variable factory overhead for the required time =  $\$150,000 \text{ (2 marks)}$

**SOLUTION QUESTION 5 – Incremental and Relevant analysis****A. 5 Marks**

(a)	A10	A20	A30	A40
Total CM	\$265,000	\$450,000	\$263,000	\$525,000
# of units	1,000	250	750	600
CM per unit ( ½ mark )	\$265.00	\$1,800.00	<b>\$350.67</b>	\$875.00
MH per unit	2.0	4.0	1.5	3.0
CM per MH (( ½ mark )	<u>\$132.50</u>	<u>\$ 450.00</u>	<u>\$233.78</u>	<u>\$291.67</u>

Collen Aerospace should produce only A20, because it has the highest contribution margin per constrained resource (machine hours). **1 Mark**

**B 8 marks**

(b)	Total machine hours available	6,000
	Machine hours required for	
	Polaris units of A10 (200 x 2)	<u>400</u>
	Machine hours left for Bombardier	5,600
	Supply 90% of contract*	<u>5,333</u>
	Balance remaining	267
	Used to top up 90% on contract	
	Less: (10% x 250 x 4) for A20	<u>100</u>
	Balance remaining	167
	Number of MH per unit for A40	<u>3</u>
	Number of additional A40 (rounded)	<u>55</u>

**2 marks**

\*[(1,000 X 2) + (250 X 4) (750 X 1.5) + (600 X 3)] X 90%

Opportunity cost of selling to Polaris:

A10 ( $10\% \times 1,000 \times \$265$ )	\$26,500	<b>1 Mark</b>
A30 ( $10\% \times 750 \times \$350.67$ )	\$26,300	<b>1 Mark</b>
A40 ( $((10\% \times 600) - 55) \times \$875$ )	<u>\$ 4,375</u>	<b>2 Marks</b>
	\$57,175	

Contribution margin from new order

200 units $\times [\$265 + (\$1,500 \times 25\%)]$	<u>\$128,000</u>	<b>2 Marks</b>
If Sharp Aerospace takes the new order they will earn	<u><u>\$70,825</u></u>	

### C 8.5 marks

(c) New capacity: $6,000 \times 115\%$	<b>1.5 Mark</b>	6900
Required for contract		
$(1,000 \times 2) + (250 \times 4) + (750 \times 1.5) + (600 \times 3)$	<b>2 Marks</b>	<u>5,925</u>
Hours left to produce A20 (highest CM per unit)		975
MH required to produce one unit of A20		<u>4</u>
Number of A20 units that could be produced	<b>2 Marks</b>	243.75
at \$1,800 per unit		<u>\$1,800</u>
Additional contribution earned		\$438750
over 4 years life of the new technology		<u>4</u>
Total contribution margin from additional sales	<b>2 Marks</b>	\$1,755,000
Cost of the new technology		<u>2,500,000</u>
		<u><u>\$ 745,000</u></u>

Collen Aerospace should not buy the new technology because its purchase cost is \$745,000 more than the additional contribution margin they would earn. **1 Mark**

**SOLUTION QUESTION 1. (37.5 marks, 25 multiple choice questions 1.5 marks each)**

1	A
2	B
3	A
4	C
5	B
6	D
7	A
8	E
9	B
10	A
11	D
12	D
13	C
14	D
15	D
16	B
17	B
18	A
19	A
20	D
21	C
22	D
23	D
24	C
25	D

✓ = ½ marks

**SOLUTION QUESTION 2. Manufacturing Statement (15 Marks)**

STUDENTS CAN SHOW THEIR CALCULATIONS IN VARIOUS WAYS INCLUDING EQUATIONS

Direct Material

Beg Inv. DM \$ 70,000✓	
Purchases <u>\$100,000✓</u>	
RM available \$ 170,000	
End Inv. <u>\$40,000</u>	
DM used \$ 130,000✓	\$ 130,000 (2)
Direct Labour	\$ 80,000 ✓ (3)
( 210,000✓-130,000✓)	
Variable OH (260,000✓-130,000-80,000)	✓✓\$50,000 (4)
Fixed OH	<u>\$ 100 000 (5)</u>
Total costs of production	✓\$ 360 000 (1)
(direct✓ \$210 000+indirect ✓\$150 000 =360 000)	
Beginning work in progress	\$✓ 160 000
Less Ending Work in progress	✓ <u>(\$ 120,000)</u>
Cost of goods manufactured	✓\$ 400 000 (6)

Beg Inv	\$ 210,000✓
Plus C G Man	<u>\$ 400,000</u>
Good available	\$ 610,000
Less end inv	<u>\$ 200,000✓</u>
Cost of goods sold	\$ 410,000 (7) ✓

Marks **1.5** each broken down

1. Total costs of production: 210 000✓+ 150 000✓= \$360 000✓
2. Cost of materials used \$ 130,000
3. Cost of direct labour \$ 80,000
4. Cost of variable overhead \$ 50,000
5. Fixed manufacturing overhead  
60 000✓-50 000-80 000-130 000-160 000= \$100 000✓✓
6. Cost of goods manufactured \$ 400 000✓✓✓
7. Cost of goods sold: \$410 000
8. Conversion costs 80 000✓ + 50 000✓+100 000✓= \$ 230 000
9. Prime costs: 130 000✓ + 80 000✓= 210 000 ✓
10. Period costs: \$ 240,000 selling and administrative 1.5 marks

**SOLUTION QUESTION 3. Cash Budget (14.5 marks)**

Solution: (6 marks)

**½ marks each A TO L**

	<b>June</b>	<b>July</b>	<b>August</b>	<b>September</b>
Cost of sales	\$96,000	136,000	80,000	<b>108,000(j)</b>
Desired end. Inven.	<b>68,000 (a)</b>	<b>40,000 (c)</b>	<b>54,000 (g)</b>	44,000
Total requirements	<b>164,000(b)</b>	<b>176,000(d)</b>	<b>134,000(h)</b>	<b>152,000 (k)</b>
Less beg. Inventory	80,000	<b>68,000 (e)</b>	40,000	<b>54,000 (l)</b>
Purchases	84,000	<b>108,000(f)</b>	<b>94,000 (i)</b>	98,000
	=====	=====	=====	=====

Sales:

May (actual)	\$100,000
June (actual)	120,000
July (estimated)	170,000
August (estimated)	100,000
September (estimated)	135,000
October (estimated)	110,000

Cash Collections ( maximum **8.5** marks )

Each month, 30 percent of sales are collected in cash and 70 percent are on credit. The collection pattern for credit sales is 20 percent in the month of sale, 50 percent in the month following the sale, and 30 percent in the second month following the sale.

**.6 mark EACH – MAXIMUM 8.5 MARKS**

Sales	100000	120000	170000	100000	135000
	May	June	July	Aug	Sept
Cash sales 30%	.3*100 000=30 000	.3*120 000= 36 000	.3*170 000= <b>51 000</b> July	.3*100 000= <b>30 000</b> Aug	.3*135 000= <b>40 500</b> Sept
Month of sale 20%	.2*70000 =14 000	.2*84000= 16 800	.2*119 000= <b>23 800</b> July	.2*70 000= <b>14 000</b> Aug	.2*94 500 = <b>18 900</b> Sept
Month following sale 50%		.5*70 000= 35 000	.5*84 000= <b>42 000</b> June	.5*119 000= <b>59 500</b> July	.5* 70 000= <b>35 000</b> Aug
2 <sup>nd</sup> month following sale 30%			.30*70 000 = <b>21 000</b> May	.3*84000= <b>25 200</b> June	.3* 119000= <b>35 700</b> July
Total			<b>137 800</b>	<b>128 700</b>	<b>130 100</b>

**SOLUTION QUESTION 4. Budget Variance Analysis (18 Marks)**

DM

Actual x Actual	Actual x Standard	Standard X Standard
-----	-----	-----
	\$693,000	\$700,000
-----	-----	-----
PV	EV	
-----	-----	-----
	\$7,000 (F)	

DL

Actual x Actual	Actual x Standard	Standard X Standard
-----	-----	-----
\$308,000	\$312,000	\$300,000
-----	-----	-----
PV	EV	
-----	-----	-----
\$4,000 (F)	\$12,000 (U)	
-----	-----	-----
	\$8,000 (U)	

VOH

Actual	Actual x Standard	APPLIED
-----	-----	-----
\$153,000	\$156,000	\$150,000
-----	-----	-----
SPV	EV	
-----	-----	-----
\$3,000 (F)	\$6,000 (U)	
-----	-----	-----
	\$3,000 (U)	

FOH

Actual	Budgeted	Applied
-----	-----	-----
	\$200,000	\$250,000
-----	-----	-----
-----	-----	-----
0	\$50,000 (F)	



**2 marks each. Partial marks can be allotted.**

1. Standard fixed overhead per unit =  $\$250,000 \div 50,000 = \$5$   
Therefore master budget capacity =  $\$50,000 \div \$5 = 10,000$  units less than  
Actual production  $50,000 - 10,000 = 40,000$  units  
Or  $250,000 - 50,000 = 200,000 / 5$  Master Bud /  $\$5 = 40,000$  Units. (2 marks)
2. Total for the master budget =  $\$250,000 - \$50,000 = \$200,000$  (2 marks)
3. DL hrs should have been used to manufacture 50,000 units  
 $= 50,000 \times 5\text{hrs} = 25,000$  hrs. (2 marks)
4. Total DLhrs used =  $\$300,000 \div 25,000 \text{ bhrs.} =$   
 $\$12$  standard direct labour hour,  
Therefore, DLhrs used =  $\$312,000 \div \$12 = 26,000$  hrs. (2 marks)
5. Total actual costs of DL =  $\$312,000 - \$4,000 = \$308,000$  (2 marks)
6. Total costs of DM used =  $\$700,000 - \$7,000 = \$693,000$  (2 marks)
7. The actual VOH costs =  $\$150,000 + \$6,000 - \$3,000 = \$153,000$  (2 marks)
8. The budget variable factory overhead for actual time  
Used =  $\$150,000 + \$6,000 = \$156,000$  (2 marks)
9. The budget variable factory overhead for the required time =  $\$150,000$  (2 marks)

**SOLUTION QUESTION 5 – Incremental and Relevant analysis****A. Maximum 4 Marks**

(a)	A10	A20	A30	A40
Total CM	\$265,000	\$450,000	\$263,000	\$525,000
# of units	1,000	250	750	600
<b>CM per unit ( ½ mark )</b>	<b>\$265.00</b>	<b>\$1,800.00</b>	<b>\$350.67</b>	<b>\$875.00</b>
MH per unit	2.0	4.0	1.5	3.0
<b>CM per MH ( ½ mark )</b>	<b>\$132.50</b>	<b>\$ 450.00</b>	<b>\$233.78</b>	<b>\$291.67</b>

Collen Aerospace should produce only A20, because it has the highest contribution margin per constrained resource (machine hours). ½ **Mark**

**B 6 marks**

(b)	Total machine hours available	6,000
	Machine hours required for	
	Polaris units of A10 (200 x 2)	<u>400</u>
	Machine hours left for Bombardier	5,600
	Supply 90% of contract*	<u>5,333</u>
	Balance remaining	267
	Used to top up 90% on contract	
	Less: (10% x 250 x 4) for A20	<u>100</u>
	Balance remaining	167
	Number of MH per unit for A40	<u>3</u>
	Number of additional A40 (rounded)	<u>55</u>

**1 mark**

\*[(1,000 X 2) + (250 X 4) (750 X 1.5) + (600 X 3)] X 90%

Opportunity cost of selling to Polaris:

A10 (10% x 1,000 x \$265)	\$26,500	<b>1 Mark</b>
A30 (10% x 750 x \$350.67)	\$26,300	<b>1 Mark</b>
A40 ((10% x 600) - 55) x \$875)	<u>\$ 4,375</u>	<b>1 Mark</b>
	\$57,175	

Contribution margin from new order

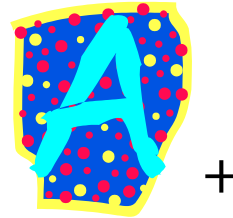
200 units x [\$265 + (\$1,500 x 25%)]	<u>\$128,000</u>	<b>2 Mark</b>
If Sharp Aerospace takes the new order they will earn	<u><u>\$70,825</u></u>	

### C 5 marks

(c) New capacity: 6,000 x 115%	<b>1 Mark</b>	6900
Required for contract		
(1,000 x 2) + (250 x 4) + (750 x 1.5) + (600 x 3)	<b>1 Mark</b>	<u>5,925</u>
Hours left to produce A20 (highest CM per unit)		975
MH required to produce one unit of A20		<u>4</u>
Number of A20 units that could be produced	<b>1 Mark</b>	243.75
at \$1,800 per unit		<u>\$1,800</u>
Additional contribution earned		\$438750
over 4 years life of the new technology		<u>4</u>
Total contribution margin from additional sales	<b>1 Mark</b>	\$1,755,000
Cost of the new technology		<u>2,500,000</u>
		<u><u>\$ 745,000</u></u>

Collen Aerospace should not buy the new technology because its purchase cost is \$745,000 more than the additional contribution margin they would earn. **1 Mark**





## CONCORDIA UNIVERSITY

**Course:** Managerial Accounting,  
**No.:** COMM 305 & ACCO. 240 Sections: All  
**Examination:** Alternate Final  
**Date:** June, 2006  
**No. of Pages:** 9 including the cover page  
**Material Allowed:** Non-programmable calculators and dictionaries  
**Special Instructions:** Answer all multiple choice questions in the Answer Sheet form no. 4521

**Return the exam questions with your answers.**

**Student Name:** \_\_\_\_\_

**Student ID No.:** \_\_\_\_\_

**Section:** \_\_\_\_\_

**Instructor:** \_\_\_\_\_

**QUESTION I. 22.5 POINTS**

**SELECT THE BEST ANSWER: 1.5 POINTS EACH QUESTION.**

1. A responsibility centre that incurs costs (and expenses) and generates revenues is classified as a(n)
  - a. cost centre.
  - b. revenue centre.
  - c. profit centre.
  - d. investment centre.
  - e. none of the above
  
2. The most useful measure for evaluating a manager's performance in controlling revenues and costs in a profit centre is
  - a. contribution margin.
  - b. contribution net income.
  - c. contribution gross profit.
  - d. controllable margin.
  - e. none of the above
  
3. Pentecost Corporation desires to earn target net income of \$40,000. If the selling price per unit is \$30, unit variable cost is \$24, and total fixed costs are \$160,000, the number of units that the company must sell to earn its target net income is
  - a. 13,333.
  - b. 33,333.
  - c. 20,000.
  - d. 26,667.
  - e. none of the above
  
4. Juniper, Inc. sells a single product with a contribution margin of \$12 per unit and fixed costs of \$74,400 and sales for the current year of \$100,000. How much is Juniper's break-even point?

a. 4,600 units	b. 5,600 units
c. 6,200 units	d. 2,133 units
e. none of the above	
  
5. Guerry Company applies overhead on the basis of machine hours. Given the following data, calculate overhead applied and the under- or over-application of overhead for the period:

Estimated annual overhead cost	\$600,000
Actual annual overhead cost	\$575,000
Estimated machine hours	150,000
Actual machine hours	140,000

  - a. \$560,000 applied and \$15,000 under-applied
  - b. \$600,000 applied and \$15,000 over-applied
  - c. \$560,000 applied and \$15,000 over-applied
  - d. \$575,000 applied and neither under- nor over-applied
  - e. none of the above

6. Given the following information for Satoko Company: Sales \$1,000,000; Controllable Margin \$150,000; Average Operating Assets \$500,000. The company's ROI is:
- |                      |        |
|----------------------|--------|
| a. 60%               | b. 50% |
| c. 15%               | d. 30% |
| e. none of the above |        |
7. The starting point of a master budget is the preparation of the:
- |                       |                            |
|-----------------------|----------------------------|
| a. cash budget.       | b. sales budget.           |
| c. production budget. | d. budgeted balance sheet. |
| e. none of the above  |                            |

Use the following information for questions 8 and 9.

Thorton Company estimates its sales at 80,000 units in the first quarter and that sales will increase by 8,000 units each quarter over the year. The company wants an ending inventory of finished goods equal to 25% of the sales of the following quarter. Each unit sells for \$25. 40% of the sales are for cash. 70% of the credit customers pay within the quarter. The remainder is received in the quarter following sale.

8. Cash collections for the **second** quarter are budgeted at
- |                      |                 |
|----------------------|-----------------|
| a. \$1,356,000.      | b. \$1,968,000. |
| c. \$2,364,000.      | d. \$2,164,000. |
| e. none of the above |                 |
9. Production in units for the **third** quarter should be budgeted at
- |                      |            |
|----------------------|------------|
| a. 98,000.           | b. 92,000. |
| c. 122,000.          | d. 96,000. |
| e. none of the above |            |
10. Rebel Company incurs the following costs in producing 50,000 units of product:
- |                                 |           |
|---------------------------------|-----------|
| Direct materials                | \$150,000 |
| Direct labour                   | 100,000   |
| Variable manufacturing overhead | 125,000   |
| Fixed manufacturing overhead    | 450,000   |
- An outside supplier has offered to supply the 50,000 units at \$10.50 each. All of Rebel's related variable costs would be eliminated, but only \$300,000 of the fixed costs would be eliminated if the offer is accepted. Acceptance will result in a
- |                         |                       |
|-------------------------|-----------------------|
| a. saving of \$300,000. | b. loss of \$150,000. |
| c. saving of \$150,000. | d. loss of \$300,000. |
| e. none of the above    |                       |

11. Finish Company has a production process where two products result from a joint processing procedure; both can be sold immediately or processed further. Given the following additional per unit information, determine which of the products should be processed further.

<u>Product</u>	<u>Allocated Joint Cost</u>	<u>Selling Price</u>	<u>Additional Processing Cost</u>	<u>New Selling Price</u>
A	\$100	\$200	\$180	\$400
B	60	100	50	160

- A
  - B
  - Both
  - Neither
12. A flexible budget
- is also called a static budget.
  - can be considered a series of related static budgets.
  - can be prepared for sales or production budgets, but not for an operating expense budget.
  - typically uses an activity index different from that used in developing the predetermined overhead rate.
  - none of the above

**Consider the following data: For Q. 13 to Q. 15**

Friben, Inc. is a management consulting firm specializing in pension plans. Its billing rate to clients is \$120 per hour and variable costs average \$80 per hour. Fixed costs are \$24,000 per month. Income taxes are 20%

13. If variable costs increase by 15%, and management increases its billing rate by 8%, what is the effect on the breakeven point, in billable hours?
- it increases the breakeven point.
  - the Breakeven point will not change.
  - it decreases the breakeven point.
  - the Breakeven point will remain constant within the relevant range.
  - cannot be determined from the data given.
14. If variable costs increase by 15%, and management increases its billing rate by 15%, what is the effect on the breakeven point, in billable dollars?
- it increases the breakeven point.
  - the Breakeven point will not change.
  - it decreases the breakeven point.
  - the Breakeven point will remain constant within the relevant range
  - cannot be determined from the data given.



15. If fixed costs increase by 15%, and management increases its billing rate by 5%, what is the effect on the breakeven point, in billable hours?
- A. it increases the breakeven point.
  - B. the Breakeven point will not change.
  - C. it decreases the breakeven point.
  - D. the Breakeven point will remain constant within the relevant range.
  - E. cannot be determined from the data given.

**Question 2 (10 marks)**

Canadian Paper Inc. produces table napkins and facial tissues. The manufacturing process is highly mechanized. Both products are produced by the same machinery by using different settings. For the coming period, 200,000 machine hours are available. Management is trying to decide on the quantities of each product to produce. The following data are available (for table napkins, one unit is one package of napkins; for facial tissue, one unit is one box of tissue):

	Napkins	Tissue
Machine hours per unit	1.00	.50
Unit selling price	\$2.50	\$3.00
Unit variable cost	\$1.50	\$2.25

The company can sell no more than 150,000 packages of napkins and 300,000 boxes of tissue.

**Required:**

1. Determine the number of packages of napkins and the number of boxes of tissue the company should produce. **(6 Marks)**
2. Compute the corresponding profit assuming that total fixed costs are \$125,000. **(4 Marks)**

### **Question 3 (10 marks)**

Conan Company produces sporting equipment. In 2005, the first year of operations, Conan produced 25,000 units and sold 18,000 units. In 2007, the production and sales results were exactly reversed. In each year, selling price was \$100, variable manufacturing costs were \$40 per unit, variable selling expenses were \$8 per unit, fixed manufacturing costs were \$540,000, and fixed administrative expenses were \$200,000.

**Required:**

- (a) Calculate net income under variable costing for each year. **4 marks**
- (b) Calculate net income under absorption costing for each year. **4 marks**
- (c) Reconcile the differences each year in income from operations under the two costing approaches **2 marks**

### **Question 4 (16 marks)**

Delta Manufacturing Company uses a standard cost system in accounting for the cost of its main product. The following standards have been established for the direct manufacturing costs per unit:

Direct materials (1 kg at \$5/kg)	\$5.00 per unit
Direct labours (2 hrs at \$4/hr.)	\$8.00 per unit

Budgeted overhead for the month of April (based on expected activity of 4,000 direct labour hours) is as follows:

Variable overhead	\$19,000
Fixed overhead	<u>8,000</u>
Total overhead	\$27,000

Results for the month of April are as follows:

Units produced	2,100
Direct materials used (2,500 kg)	\$11,000
Direct labours (4,320 hrs)	18,144
Variable overhead	21,410
Fixed overhead	8,125
Total costs	\$58,679

There was no beginning or ending work in process inventory.

**Required:**

**Calculate the following:**

- 1. Direct materials price, usage and total variances **(4 Marks)**
- 2. Labour price, usage and total variances **(4 Marks)**
- 3. Variable overhead spending, efficiency and total variances **(4 Marks)**
- 4. Fixed overhead spending and volume variances **(4 Marks)**

### **Question 5 (10 marks)**

A nursery has 3 divisions: the Western Division, the Central Division and the Eastern Division. All three grow and sell plants for gardens. Recently, the Central Division has acquired a facility that manufactures plastic pots. The pots can be sold both externally and internally. Company policy permits manager to decide whether to buy or sell internally. Each manager is evaluated based on both ROI and EVA.

The Western Division has been buying its plastic pots in lots of 100 from several vendors. The average price paid is \$75 per box of 100 pots. However, the recent acquisition makes the manager of the Western Division wonder whether a more favourable price can be arranged. She approaches the manager of the Central Division with a request to transfer 3,500 boxes at \$70 per box.

The cost and revenue of a box of 100 pots is as follows:

Direct materials	\$35
Direct Labour	8
Variable overhead	10
Fixed overhead (\$200,000/20,000 boxes)	<u>10</u>
Total unit cost	\$63
Selling price	\$75
Production capacity	20,000 boxes

#### **Required:**

1. Suppose the pot facility is producing at capacity and can sell its entire production to outside customers. How should the manager respond to the request for a lower transfer price? **(4 Marks)**
2. Assume that the pot facility is currently selling 16,000 boxes. What are the minimum and maximum transfer prices? Should the manager transfer at \$70 per box? **(4 Marks)**
3. Suppose that the company's policy is to make all transfers at full cost plus 20 percent. Should the transfer occur? Explain why or why not? **(2 Marks)**

### **Question 6 (16 marks)**

Axia Inc. manufactures two electronic products, widgets and gadgets, and has a capacity of 1,000 machine hours. Prices for each product are as follows:

	Widget	Gadget
Selling price	\$200	\$280
Variable costs		
Direct materials	\$25	\$30
Direct labour costs	\$6	\$10
Applied overhead manufacturing costs	\$30	\$44
Fixed overhead	\$50	\$70

Variable overhead manufacturing costs are applied at a rate of \$40 per machine hour.

Bromont Inc., a potential client, has offered \$240 per unit to Axia for a special order of 250 units. These 250 units would incur the following production costs and time:

Direct materials	\$7,000
Direct labour costs	\$2,000
Machine hours	200

#### **Required:**

1. Assume that Axia has enough excess capacity to produce the special order. Calculate the total contribution margin if the special order from Bromont was accepted. **(6 marks)**
2. Assume that Axia is actually operating at 95% of capacity. Determine, whether Axia should produce the units for the special order instead of widget or gadget units. Show your calculations. **(8 marks)**
3. Assume that Axia is actually operating at 95% capacity, and additional machines can be rented at a cost of \$33,000 to produce Bromont's special order. If the special order is accepted, calculate its effects on Axia's profit. Show your calculations. **(2 marks)**

**Question 7 (15.5 marks)**

Salem Company reported the following information for 2006:

	September	October	November	December	January
Budgeted sales	\$280,000	\$300,000	\$320,000	\$360,000	\$200,000
Budgeted purchases	\$90,000	\$120,000	\$128,000	\$144,000	\$88,000

- All sales are on credit.
- Customer amounts on account are collected 60% in the month of sale and 40% in the following month.
- Cost of goods sold is 40% of sales.
- Salem purchases and pays for merchandise 70% in the month of acquisition and 30% in the following month.
- Accounts payable is used only for inventory acquisitions.

Required:

1. How much cash will Salem receive during November? **(5.5 Marks)**
2. How much is the budgeted balance for Accounts Receivable at November 30, 2006?  
**(5 Marks)**
3. How much is the budgeted balance for Accounts Payable at November 30, 2006?  
**(5 Marks)**

### Question 7 (15.5 marks)

	Sept	Oct	Nov	Dec	Jan	
budgeted sales	\$280,000	\$300,000	\$320,000	\$360,000	\$200,000	
budgeted purchases	\$90,000	\$120,000	\$128,000	\$144,000	\$88,000	
sales collection in Nov						
Oct sales		\$180,000	\$120,000			4.5
		2 marks	2.5 marks			
Nov sales			\$192,000	\$128,000		4.5
			2 marks	2.5 marks		
total			\$312,000			2
			2 marks			
payment of purchases						
Oct purchases		\$84,000	\$36,000			
Nov purchases			\$89,600	\$38,400		4.5
			2 marks	2.5 marks		
total			\$125,600			