Question 1 (25 marks: questions with an "*" are worth 2 marks, all others, 1 mark)
ANSWER THESE QUESTIONS ON THE SCANTRON CARD

1. Which of the following managerial activities involves the coordination of daily activities within an organization?
   a. Planning
   b. **Directing and motivating**
   c. Controlling
   d. None of the above

2. Which of the following involves the study of organizations that are among the best in the world at performing a particular task?
   a. **Benchmarking.**
   b. The Kaizen approach to management.
   c. The Sigma Six approach to production.
   d. The Plan-do-check-act (PDCA) cycle.

3. Which of the following is not considered a standard of ethical conduct for management accountants?
   a. Confidentiality.
   b. Integrity.
   c. Transparency.
   d. Competence.

4. Which of the following statements pertaining to Managerial Accounting is false?
   a. Managerial Accounting deals only with financial data for decision-making purposes.
   b. Managerial Accounting deals with both objective and subjective data for decision-making purposes.
   c. Managerial Accounting is not subject to generally accepted accounting principles.
   d. The practice of Managerial Accounting is not mandatory.

5. Which of the following statements reflects a key concept of a JIT production system?
   a. Inventories of raw materials, work-in-process, and finished goods inventories of manufacturing companies are maintained so that operations can proceed smoothly, even if suppliers are late with deliveries.
   b. The use of many suppliers ensures rapid delivery of materials for production.
   c. The maintenance of a stock of raw materials allows defective materials to be replaced quickly so as to maintain a high rate of productivity.
   d. Inventories are costly to carry and can be kept to minimum levels or eliminated completely with careful planning.

6. Which of the following managerial activities involves the comparison of budgeted to actual results?
    a. Planning
    b. Directing and motivating
    c. Controlling
    d. None of the above

7. Which of the following statements about line and staff positions in organizations is false?
    a. Individuals in line positions are directly involved in achieving the basic objectives of the organization.
    b. Individuals in staff positions primarily provide support to other individuals in the organization.
    c. Individuals in staff positions usually have direct authority over individuals in line positions.
    d. Both line and staff managers have authority over the employees in their own departments.

8. Which of the following statements about process re-engineering is true?
    a. It is only used by manufacturing companies.
    b. It does not usually involve the use of outside consultants.
    c. It focuses on eliminating wasted effort.
    d. It is inconsistent with total quality management.

9. When making decisions, managers should consider _____ costs but should ignore _____ costs.

    Which of the following pairs of cost terms best completes the above sentence, in the correct order?
    a. Opportunity costs; sunk costs
    b. Sunk costs; opportunity costs
    c. Sunk costs; differential costs
    d. Differential costs; incremental costs

10. The terms "direct cost" and "indirect cost" are commonly used in management accounting. Classifying a cost as either direct or indirect depends upon:
    a. the behavior of the cost in response to volume changes.
    b. whether the cost is expended in the period in which it is incurred.
    c. **whether the cost can be easily traced to a cost object.**
    d. whether an expenditure is unavoidable because it cannot be changed regardless of any action taken.

11*. AFM Merchandising, Inc., has provided the following information for the year just ended:

Sales	$128,500
Beginning merchandise inventory	$ 24,000
Purchases of goods for resale	$ 80,000
Gross margin	$ 38,550

What was the ending merchandise inventory for the company at year-end?

a. $65,450.
b. $24,500.
c. $14,050. CSG: $128,500 - $38,550 = $89,950; $24,000 + $80,000 – x = $89,950, where x = ending merchandise inventory
d. $ 9,950.

12. Which of the following should never be included in a Statement of Cost of Goods Sold?

a. Beginning finished goods inventory.
b. Ending Work in Process.
c. Cost of goods manufactured.
d. Adjustment for under or over applied overhead.

13. Assuming that Fixed Overhead costs remain unchanged, an increase in expected production from one year to the next would result in a(an)

a. higher predetermined overhead rate.
b. lower predetermined overhead rate.
c. higher unit cost.
d. overapplied overhead amount.

14*. Best Company's records show that overhead was overapplied by $8,000 last year. This overapplied overhead was closed out to the Cost of Goods Sold account at the end of the year. In trying to determine why overhead was overapplied by such a large amount, the company has discovered that $6,000 of indirect materials was mistakenly debited to the accounts receivable account in error. Given the above information, which of the following statements is true?

a. The company's net income is understated by $6,000 for the year.
b. The company's net income is overstated by $6,000 for the year.
Had Overhead Control been debited for the $6,000 instead of Accounts Receivable, the credit to cost of sales for overapplied overhead would have been $6,000 lower.
c. The error in recording indirect materials would have no effect on net income for the year.
d. The $6,000 in indirect materials should have been debited to Work in Process.

15. The use of a transaction driver is most appropriate when

a. an activity occurs frequently.
b. an activity is easily identifiable.
c. each transaction is unique regarding the amount of time to process.
d. each transaction requires the same amount of time to process.

16. In an activity based costing system, receiving shipments of raw materials from suppliers would usually be classified as a:
    a. unit level activity.
    b. batch level activity.
    c. product level activity.
    d. customer level activity.

17. Which of the following is not a reason more companies are using activity based costing now than in the past?
    a. Overhead costs now represent a small percentage of total product or service costs.
    b. Companies today manufacture a greater variety of products differing in complexity.
    c. Technology has made it easier to implement activity based costing.
    d. There is more emphasis on non-manufacturing costs than in the past.

18. Which of the following would be an example of a committed fixed cost?
    a. Research and development.
    b. A long-term lease on factory machinery.
    c. Advertising
    d. Management training programs.

19. Which of the following changes in direct proportion to a change in activity level?
    a. Fixed cost
    b. Mixed cost
    c. Step-variable cost
    d. None of the above

20. Assume that you own a fast food franchise and must annually pay total franchise fees consisting of a $50,000 fixed amount plus 5% of gross sales. In terms of cost behavior the total franchise fee you pay each year is a:
    a. Fixed cost
    b. Mixed cost
    c. Step-variable cost
    d. Variable cost

21. The contribution format income statement differs from the traditional income statement method in that:
    a. Costs are organized along “functional” lines.
    b. Costs are organized according to cost behaviour.
    c. Income reported under this format is typically higher than it would be under the traditional format.
    d. Income reported under this method is typically lower than it would be under the traditional format.

22. Which of the following is not an assumption of CVP analysis?
    a. Selling price is constant throughout the relevant range.
    b. Costs are linear throughout the relevant range.
    c. A company's sales mix is constant.
    d. There are no beginning or ending inventories.

23. Assume only the specified parameters change in a cost-volume-profit analysis. The contribution margin ratio increases when
    a. total fixed costs increase.
    b. total fixed costs decrease.
    c. variable costs per unit increase.
    d. variable costs per unit decrease.

Question 2 (7 marks)

Jane worked 47 hours last week. She was idle 3 hours and spent the remaining 44 hours working directly on the manufacture of finished products. She is paid $10 per hour and time-and-a-half for work in excess of 40 hours per week.

Required:

a. Assuming that the idle time and overtime were not attributable to specific jobs, allocate Jane's wages between direct labour and manufacturing overhead. (**5 marks**)

Direct Labour	44 (47-3) x $10 = $440	
	.5 .5 .5	
Overhead:		
Idle Time	3 x $10 =	$30
	.5 1	
Overtime premium	7 (47 – 40) x ($15 – 10) = $35	
	.5 .5 .5 .5	$65

b. Assuming the company uses a normal costing system, which account(s) would be debited for the amounts calculated in a. above for direct labour and manufacturing overhead? No journal entry is needed, just identify the account to debit. (**2 marks**)

	Account Debited	
Direct labour	Work in process	1
Manufacturing overhead	Overhead control	1

Question 3 (12 marks)

Wallace Welding Company applies overhead to jobs using machine hours as the basis. The predetermined overhead rate for 2007 is $5 per machine hour. On January 1, 2007 there were no balances in either work-in-process or finished goods inventory. During January the firm began the following jobs, which utilized machine hours during the month as shown:

J1 1,000 machine hours
J2 3,000 machine hours

During January, job J1, consisting of 500 units was completed and 60% of the units were sold during the month. Job J2, consisting of 1,000 units was still in progress on January 31. Actual overhead incurred during January was $26,000.

Required:

a. Calculate the amount of underapplied or overapplied overhead for January. (**3 marks**)

Actual overhead $26,000 .5
Applied overhead (1,000 + 3,000) x $5 $20,000
.5 .5 .5
Under applied $6,000
1 (for correctly identifying as under applied)

Note that if students incorrectly calculate applied overhead and it exceeds actual overhead, give them the 1 mark if they label the difference as over applied.

b. Prepare a journal entry to allocate the amount of over or under applied overhead from part a. to work-in-process inventory, finished goods inventory and cost of goods sold. (**9 marks**)

Job	**Account**	**Applied OH**	**(a) %**	**(b) Underapplied Overhead**	**Pro-Rated Underapplied OH (a x b)**
J2	Work-in-process	3,000 x $5 = **$15,000** .5 .5	.75 .5	$6,000	.5 **$4,500**
J1	Finished goods	1,000 x .4 x $5 = .5 .5 .5 **$2,000**	.10 .5	6,000	.5 **$600**
J1	Cost of goods sold	1,000 x .6 x $5 = .5 .5 .5 **$3,000**	.15 .5	6,000	.5 **$900**
		$20,000			**$6,000**

Entry:

Work-in-process	$4,500 .5	
Finished goods	$ 600 .5	
Cost of goods sold	$ 900 .5	
Overhead Control		$6,000 .5

Question 4 (18 marks)

Port Royal Company manufactures two products, Deluxe and Regular. Details regarding each product are shown below.

	Deluxe	Regular
Expected unit sales	15,000	120,000
Direct costs per unit (materials and labour)	$170	$120
Direct labour hours per unit	1.6	.8

The company has identified three main activities involved in the production process. Details for those activities are shown below.

			Activity Level Required	
Activity	Cost	Activity Measure	Deluxe	Regular
Purchase order processing	$300,000	Number of orders	400	800
Product design	$1,350,000	Design hours	6,000	9,000
Machine related	$3,750,000	Machine hours	20,000	30,000
Total manufacturing overhead	$5,400,000			

Required:

a. Calculate the total manufacturing cost per unit for each of the two products assuming the company applies total manufacturing overhead using a single pre-determined rate based on direct labour hours. (**6 marks**)

Overhead Application Rate = $5,400,000/(1.6 x 15,000) + (.8 x 120,000) = $45 per hour
1 .5 .5 .5 .5

		Deluxe		Regular	
Direct costs	.5	$170	.5	$120	
Overhead	(1.6 x $45)	$72		$36	(.8 x $45)
	.5 .5	$242		$156	.5 .5

b. Now assume the company uses an activity based costing system to apply total manufacturing overhead to the two products. Calculate: (i) activity rates for each activity and (ii) the total manufacturing overhead cost per unit for the Deluxe product. (**8 marks**)

Activity Rates

Purchase order processing	$300,000/(400 + 800) = $250 per order .5 .5 .5
Product design	$1,350,000/(6,000 + 9,000) = $90 per design hour .5 .5 .5
Machine related	$3,750,000/(20,000 + 30,000) = $75 per hour .5 .5 .5

Assignment of activity costs to Deluxe:

Purchase order processing	$250 x 400 =	$100,000	(1 mark, .5 for each part of calculation)
Product design	$90 x 6,000 =	$540,000	(1 mark, .5 for each part of calculation)
Machine related	$75 x 20,000 =	$1,500,000	(1 mark, .5 for each part of calculation)
		$2,140,000	/ 15,000 = $142.67 per unit
			.5

c. Briefly explain why the overhead cost per unit calculated in part a. above differs from the overhead cost per unit calculated in part b. (**2 marks**)

The overhead allocation approach in part a. assumes overhead costs are driven by volume of production (i.e., unit level activity). The activity based costing approach in part c. recognizes that some overhead costs are not driven by unit level activities with the amounts allocated to products being disproportionate to the number of units being produced.

2 marks if both elements of the difference are clearly explained. 1 mark if generally on the right track but not clear.

d. For Port Royal Company, identify which of the five activity types best describes: (**2 marks**)

	Activity Type	
Purchase order processing	Batch level	1
Product design	Product level	1

Question 5 (13 marks)

Good Health is a private health care clinic that recently opened in Alberta. The manager of the clinic gathered the following data about the X-Ray department for the first 10 months of operations.

Month	X-Rays Taken	Total X-Ray Costs
March	3,250	$155,000
April	6,250	$280,000
May	7,000	$290,000
June	5,000	$230,000
July	4,250	$200,000
August	4,500	$220,000
September	3,000	$170,000
October	3,750	$180,000
November	5,500	$240,000
December	5,750	$260,000

Required:

a. Using the high-low method, develop a cost formula for the monthly X-Ray department costs. Show all calculations. (**4 marks**)

($290,000 - $170,000)/(7,000 – 3,000) = $30 per X-Ray
.5 .5 .5 .5
Fixed cost: $290,000 – (7,000 x $30) = $80,000 or $170,000 – (3,000 x $30) = $80,000
.5 .5 .5
Cost formula: y = $80,000 + $30b (any letter will suffice) .5 for stating the formula

Use the following cost formula for total X-Ray costs to answer each of the questions that appear below (**9 marks**):

y = $80,000 + $30b

i. If patients are charged $50 for each X-Ray taken, how many X-Rays must be taken to break-even in a month? Calculate the margin of safety (in units) if the clinic expects to take an average of 5,000 X-Rays per month. (**2.5 marks**)

$80,000/($50 - $30) = 4,000 or $50x - $30x - $80,000 = 0 and solve for x
.5 .5 .5
Safety margin = 5,000 expected sales – 4,000 break even sales = 1,000 units
.5 .5

ii. If patients are charged $50 for each X-Ray taken and the tax rate is 40%, how many X-Rays must be taken to generate after-tax profits of $36,000 per month? (**2 marks**)

[$80,000 + ($36,000/1-.4)] / $20 = 7,000 or $50x - $30x - $80,000 = $36,000/1-.4
.5 .5 .5 .5

iii. If the clinic expects to take an average of 5,000 X-Rays per month, what price should be charged per X-Ray to generate a monthly pre-tax profit of $70,000? (**2.5 marks**)

5,000x – 5,000($30) - $80,000 = $70,000, x = $60 per X-Ray
.5 .5 .5 .5 .5

iv. If the contribution margin ratio drops to 35%, by how much must fixed costs be reduced to ensure the clinic breaks even each month at $200,000 in sales revenue? (**2 marks**)

x = fixed costs, at break-even: x/.35 = $200,000; x = $70,000
.5 .5 .5

Reduction = $80,000 - $70,000 = $10,000 .5