

**MULTIPLE CHOICE QUESTIONS (45 POINTS)**

Use the following information for questions 1 - 5

TOP Appliance Store sells an average of 160 units per month. Each order the store places is for 300 units. The cost per unit is \$5. The cost per order is \$12. Carrying cost is \$0.15 per dollar invested per year. The rate of return is 18 percent. The tax rate is 46 percent.

1. What is the investment in average inventory?
  - a. \$740
  - b. \$745
  - c. \$750
  - d. \$755
  
2. What is the annual ordering cost?
  - a. \$73.40
  - b. \$76.80
  - c. \$78.60
  - d. \$80.70
  
3. What is the annual holding cost?
  - a. \$112.50
  - b. \$111.00
  - c. \$113.25
  - d. \$111.75
  
4. What is the opportunity cost of holding inventory?
  - a. \$133.20
  - b. \$134.10
  - c. \$135
  - d. \$135.90
  
5. What is the total cost of the inventory excluding the purchase price?
  - a. \$237.22
  - b. \$232.77
  - c. \$237.69
  - d. \$239.82
  
6. Corn Crunchers has three product lines. Its only unprofitable line is Corn Nuts, the results of which appear below for 2006:

Sales	\$350,000
Variable expenses	230,000
Fixed expenses	<u>150,000</u>
Net loss	<u><u>\$(30,000)</u></u>

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If this product line is eliminated, 30% of the fixed expenses can be eliminated. How much are the relevant costs in the decision to eliminate this product line?

- a. \$45,000
- b. \$380,000
- c. \$335,000
- d. \$275,000

7. The following information is available for a potential investment for Panda Company:

Initial investment	\$40,000
Net annual cash inflow	10,000
Net present value	18,112
Salvage value	5,000
Useful life	10 yrs.

The investment's profitability index is

- a. 4.00
- b. 2.85
- c. 2.50
- d. 1.45

**Use the following information for questions 8 - 11 .**

Carr Company is considering two capital investment proposals. Estimates regarding each project are provided below:

	<u>Project Soup</u>	<u>Project Nuts</u>
Initial investment	\$400,000	\$600,000
Annual net income	20,000	42,000
Net annual cash inflow	100,000	142,000
Estimated useful life	5 years	6 years
Salvage value	-0-	-0-

The company requires a 10% rate of return on all new investments.

<u>Periods</u>	<u>Present Value of an Annuity of 1</u>			
	<u>9%</u>	<u>10%</u>	<u>11%</u>	<u>12%</u>
5	3.890	3.791	3.696	3.605
6	4.486	4.355	4.231	4.111

- 8. The cash payback period for Project Soup is
  - a. 20 years.
  - b. 10 years.
  - c. 5 years.
  - d. 4 years.

9. The net present value for Project Nuts is
  - a. \$618,410.
  - b. \$182,912.
  - c. \$100,000.
  - d. \$18,410.
  
10. The annual rate of return for Project Soup is
  - a. 5%.
  - b. 10%.
  - c. 25%.
  - d. 50%.
  
11. The internal rate of return for Project Nuts is approximately
  - a. 10%.
  - b. 11%.
  - c. 12%.
  - d. 9%.

**Use the following information for questions 12 to 15 .**

The Magnetic Imaging Division of Medical Diagnosis, Inc. has reported the following results for last year's operations:

Sales.....	\$25,000,000
Net operating income.....	\$ 3,000,000
Average operating assets.....	\$10,000,000

12. The Magnetic Imaging Division's operating profit margin is:
  - a. 10%
  - b. 11%
  - c. 12%
  - d. 13%
  
13. The Magnetic Imaging Division's operating assets turnover is:
  - a. 1
  - b. 1.5
  - c. 2
  - d. 2.5
  
14. The ROI at Magnetic Imaging Division is:
  - a. 25%
  - b. 30%
  - c. 35%
  - d. 40

15. the Magnetic Imaging Division's residual income is:

- a. \$500,000
- b. \$550,000
- c. \$600,000
- d. \$650,000

16. A company has a capital employed of \$200,000. It has a cost of capital of 12% per year. Its residual income is \$36,000.

What is the company's return on investment?

- a. 30%
- b. 12%
- c. 18%
- d. 22%

17. Which of the following are suitable measures of performance at the strategic level?

(1) Return on investment

(2) Market share

(3) Number of customer complaints

- a. 1 and 2
- b. 2 only
- c. 2 and 3
- d. 1 and 3

18. ABC Co has a manufacturing capacity of 10,000 units. The mixed production cost budget of the company is as follows:

Capacity	60%	100%
Total production costs	\$11,280	\$15,120

What is the budgeted total production cost if it operates at 85% capacity?

- a. \$13,680
- b. \$12,852
- c. \$14,025
- d. \$12,340

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19. Using an interest rate of 10% per year the net present value (NPV) of a project has been correctly calculated as \$50. If the interest rate is increased by 1% the NPV of the project falls by \$20.

What is the internal rate of return (IRR) of the project?

- a. 7.5%
  - b. 11.7%
  - c. 12.5%
  - d. 20.0%
- 20 . A manufacturing company operates a standard absorption costing system. Last month 25,000 production hours were budgeted and the budgeted fixed production cost was \$125,000. Last month the actual hours worked were 24,000 and standard hours for actual production were 27,000.

What was the fixed production overhead variance for last month?

- a. \$5,000 Unfavourable
  - b. \$5,000 Favourable
  - c. \$10,000 Unfavourable
  - d. \$10,000 Favourable
21. The purchase price of an item of inventory is \$25 per unit. In each three month period the usage of the item is 20,000 units. The annual holding costs associated with one unit equate to 6% of its purchase price. The cost of placing an order for the item is \$20.

What is the Economic Order Quantity (EOQ) for the inventory item to the nearest whole unit?

- a. 730
  - b. 894
  - c. 1,461
  - d. 1,633.
22. In September, Smith Company had the following financial statement amounts related to producing 1,000 units:

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Direct materials	\$30,000
Depreciation expense	12,000
Sales revenue	88,000
Direct labor	10,000
Rent expense	13,000

How much is contribution margin per unit?

- a. \$48
- b. \$58
- c. \$35
- d. \$13

23 . At the high level of activity in October, a company used 6,000 machine hours resulting in a utility cost of \$12,000. In March, a month of low activity, 3,500 machine hours were used, and utility costs totaled \$7,500. If the company uses the high-low method, how much of the utility cost is fixed cost?

- a. \$4,000
- b. \$7,500
- c. \$10,800
- d. \$1,200

24 . Huntley Company has two departments, Machining and Assembly, at its Milwaukee plant. This year's budget for the plant contained the following information.

	<u>Machining</u>	<u>Assembly</u>
Manufacturing overhead	\$4,000,000	\$2,000,000
Direct labor hours	100,000	200,000
Machine hours	40,000	40,000

Assume the Milwaukee plant uses machine hours as the overhead base in machining and direct labor in Assembly. If Job 2420 uses 20 direct labor hours in each department, 10 machines hours in Machining and 5 machine hours in Assembly, how much overhead would be assigned to the job?

- a. \$1,100.
- b. \$1,200.
- c. \$2,100.
- d. \$2,200.

25. Almax Corporation produces and sells smart phones. The following information relates to Almax’s operations for the last year.

Variable cost per unit	\$5.20
Total fixed manufacturing overhead cost	\$260,000
Total fixed selling and administrative cost	\$180,000
Units produced and sold	400,000

Using absorption costing, what was Almax’s cost per unit last year?

- a. \$4.55.
  - b. \$5.00.
  - c. \$5.85.
  - d. \$6.30.
26. A stock has an expected return of 16% using the capital asset pricing model (CAPM). If the expected rate of return on the market is 12%, and the risk-free rate of return is 4%, what is the beta ( $\beta$ ) coefficient of this stock?
- a. 0.75.
  - b. 1.50.
  - c. 2.00.
  - d. 3.00.
- 27 . The net present value, internal rate of return, and payback period for four proposed capital budgeting projects are shown below.

<u>Project</u>	<u>Net Present Value</u>	<u>Internal Rate of Return</u>	<u>Payback Period</u>
I	+\$800,000	16%	5 years
II	+\$300,000	21%	4 years
III	+\$200,000	25%	4 years
IV	+\$500,000	23%	3 years

Which one of the following is the **best** project for the company to select?

- a. Project I.
  - b. Project II.
  - c. Project III.
  - d. Project IV.
- 28 . If year one equals \$800, year two equals \$840, and year three equals \$896, the percentage to be assigned for year three in a trend analysis, assuming that year 1 is the base year, is
- a. 100%.
  - b. 89%.

- c. 105%.
- d. 112%.

29. A common measure of liquidity is

- a. return on assets.
- b. receivable turnover.
- c. profit margin.
- d. debt to equity.

30. Galley Industries can produce 100 units of a necessary component part with the following costs:

Direct Materials	\$30,000
Direct Labor	13,000
Variable Overhead	32,000
Fixed Overhead	12,000

If Galley Industries purchases the component externally, \$3,000 of the fixed costs can be avoided. What is the maximum price for the 100 units would Galley choose to buy instead of make?

- a. \$75,000
- b. \$84,000
- c. \$66,000
- d. \$78,000

## QUESTIONS

### Question 1 (15 points)

Dalton Auto Parts (DAP) has a seat manufacturing department that uses ABC. DAP's activity cost allocation rates include the following:

Activity	Allocation Base	Activity Cost Allocation Rate
Machining	Number of machine hours	\$30 per machine hour
Assembling	Number of parts	0.50 per part
Packaging	Number of finished seats	0.90 per finished seat

Suppose that Chrysler has asked for a bid on 50,000 built-in baby seats that would be installed as an option on some Chrysler cars. Each seat has 20 parts and the direct materials cost per seat is \$11. The job would require 10,000 direct labor hours at a labor wage rate of \$25 per hour. In addition, DAP will use a total of 400 machine hours to fabricate some of the parts required for the seats.

#### Required:

1. Compute the total cost of producing and packaging 50,000 baby seats. Also compute the average cost per seat.



2. For bidding, DAP adds a 30% markup to total cost. What price will the company bid for the Chrysler order?
3. Suppose that instead of an ABC system, DAP has a traditional product costing system that allocates manufacturing overhead at a plant-wide overhead rate of \$65 per direct labor hour. The baby-seat order will require 10,000 direct labor hours. Compute the total cost of producing the baby seats and the average cost per seat. What price will DAP bid (asking price) using this system's total cost?
4. Use your answer to 2 & 3 (above) to explain how ABC can help DAP make a better decision about the bid price it will offer Chrysler.

**Question 2 (20 points)**

Adam Tire Co.'s budgeted unit sales for the year 2016 were as follows:

Passenger car tires	60,000
Truck tires	12,500

The budgeted selling price for truck tires was \$300 per tire and for passenger car tires was \$90 per tire. The beginning finished goods inventories were expected to be 2,500 truck tires and 6,000 passenger tires, for a total cost of \$400,510, with desired ending inventories at 2,000 and 5,000 respectively, and a total cost of \$326,478. There was no anticipated beginning or ending work-in-process inventory for either type of tire.

The standard materials quantities for each type of tire were as follows:

	<b>Truck</b>	<b>Passenger car</b>
Rubber	35 kg	15 kg
Steel belts	4.5 kg	2.0 kg

The purchase prices of rubber and steel were \$3 and \$2 per kilogram respectively. The desired ending inventories for rubber and steel were 60,000 and 6,000 kg respectively. The estimated beginning inventories for rubber and steel were 75,000 and 7,500 kg respectively. The direct labor hours required for each type of tire were as follows:

	<b>Molding Department</b>	<b>Finishing Department</b>
Truck tire	0.20	0.10
Passenger car tire	0.10	0.05

The direct labor rate for each department is as follows:

Molding Department	\$13 per hour
Finishing Department	\$15 per hour

Budgeted factory overhead costs for 2016 were as follows:

Indirect materials	\$170,560
Indirect labor	158,800
Depreciation of building and equipment	98,320
Power and light	126,000
Total	\$553,680

**Required:**

Prepare each of the following budgets for Adam for the year ended 2016:

1. Production budget
2. Direct material budget
3. Direct labor budget
4. Cost of goods sold budget

**Question 3 (20 points)**

The management of a hotel is planning for the next year. The hotel has 100 bedrooms. The price of a room night includes breakfast for the guests. Other services (a snack service and a bar and restaurant) are available but are not included in the price of the room night. These additional services are provided to hotel guests only.

For planning purposes the hotel divides the year (based on 360 days) into three seasons: peak, mid and low.

Details of the hotel and its services and forecasts for the next year are given below.

**1. Seasons, room charges, room occupancy, guests per room and room revenue**

The hotel charges a price per room per night (including breakfast) irrespective of the number of guests per room. The price charged is different in each of the seasons.

<i>Season</i>	<i>Peak</i>	<i>Mid</i>	<i>Low</i>
Number of days	90	120	150
Price charged per room per night	(\$) 100.00	80.00	55.00
Hotel room occupancy	% 95	75	50
Average number of guests per room	1.8	1.5	1.2
Total room revenue	(\$) 855,000	720,000	412,500

**2. Guest related costs**

The hotel incurs some costs, including providing breakfast, that are directly related to the number of guests in the hotel. These are \$12 per guest per night in all seasons.

**3. Room related costs**

The hotel incurs some costs that are directly related to the number of rooms occupied. These include cleaning and laundry costs of \$5 per occupied room per night regardless of season. There are also power and lighting costs of \$3 in the peak season, \$4 in the mid-season and \$6 in the low season per occupied room per night.

**4. Hot snacks**

The hotel offers a 24 hour hot snacks service to the guests. Past records show that this service has been used by 30% of its guests in the mid and low seasons but only 10% in the peak season. It is forecast that the average spend per guest per night will be \$10. The hotel earns a 30% gross contribution from this income. The hotel employs a cook on a salary of \$20,000 per year to provide this service. All of the costs for the hot snacks service, except for the cook’s salary, are variable.

**5. Restaurant & Bar**

Past records show that the usage of the restaurant and bar is seasonal. The restaurant and bar are particularly popular with the hotel’s business guests. The forecast usage is shown below.

Season	Daily demand
Peak	30% of hotel guests spend an average of \$15 each
Mid	50% of hotel guests spend an average of \$20 each
Low	70% of hotel guests spend an average of \$30 each

The hotel earns a 25% gross contribution from this income and employs two chefs on a combined salary of \$54,000 per year to provide this facility. All of the costs in the restaurant and bar, except for the salaries of the chefs, are variable.

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**6. General hotel costs.**

These include the costs of reception staff, the heating and lighting of the common areas and other facility related costs. The forecast costs for next year are:

Peak season	\$300,000
Mid season	\$400,000
Low season	\$500,000

There are also some costs that are incurred by the hotel and can only be avoided by its permanent closure. These are estimated to \$200,000 for next year.

**Required:**

Prepare, in an appropriate format, a columnar statement of the hotel profit (Loss) based on the season that will help the managers of the hotel to plan for next year. Your statement should show the hotel's activities by season and in total.