

**FATİH UNIVERSITY**  
**FACULTY OF ENGINEERING**  
**DEPARTMENT OF INDUSTRIAL ENGINEERING**  
**IE 325 COST ANALYSIS AND CONTROL**  
**FINAL EXAM**

Duration: 75 Minutes

January 15, 2008

**SELECT 4 OF THE FOLLOWING QUESTIONS AND ANSWER**

**Question 1.** Future Manufacturing Company had the following account balances for the year ending December 31, unless otherwise noted:

|   |           |
|---|-----------|
| Depreciation of manufacturing equipment ... | \$ 24,000 |
| Depreciation of office equipment .....      | 3,600     |
| Direct manufacturing labor .....            | 48,000    |
| Direct materials used .....                 | 58,000    |
| General office expenses .....               | 7,000     |
| Indirect manufacturing labor .....          | 16,000    |
| Indirect materials used .....               | 8,000     |
| Marketing distribution costs .....          | 10,000    |
| Plant utilities .....                       | 9,500     |
| Sales Revenue.....                          | 200,000   |
| Finished goods inventory (December 31)..... | 21,000    |
| Finished goods inventory (January 1).....   | 34,000    |
| Work-in-process inventory (December 31).... | 17,000    |
| Work-in-process inventory (January 1) ..... | 14,000    |

- a. Prepare a cost of goods sold schedule for the year.
- b. Prepare an income statement for the year.

**Question 2.** Carlson Company produces product X and product Y using a joint production process. During November 2007, the joint costs of processing the products were \$53,100. Production and sales value information for November were as follows:

| Product   | Production | Selling Price |
|-----------|------------|---------------|
| Product W | 6,000 kg   | \$12 per kg   |
| Product Y | 5,000 kg   | \$15 per kg   |

Product W may be processed further to yield Product WWW for an additional processing cost of \$28,000. Product WWW is sold for \$16 per kg.

Product Y may be processed further to yield Product YYY for an additional processing cost of \$50,000. Product YYY is sold for \$20 per kg.

There were no beginning and ending inventory balances.

- a. Determine the amount allocated to each product if the sales value at split off method is used.
- b. Compute the cost per kg for Product WWW and YYY.

**Question 3.** Esra Korhan plans to operate a pop corn stand at a convention. Fixed costs for the booth, which include utilities, will be \$1,000. Variable costs per box will be \$0.50 for materials and \$0.10 for a franchise fee from the supplier. Selling price is \$2.60 per unit.

- a. Determine the quantity he needs to charge to earn a profit of \$2,000.
- b. Compute the break-even point in units.
- c. Compute the break-even volume in dollars.

**Question 4.** Grass Corporation manufactures three products, Ordinary, Complex and Simple. The company produced 500 units of Ordinary, 2,000 units of Complex and 3,000 units of Simple during the current year. Unit price and unit costs for direct materials and labor are:

|                               | <u>Ordinary</u> | <u>Complex</u> | <u>Simple</u> |
|-------------------------------|-----------------|----------------|---------------|
| Direct material cost per unit | \$ 9            | \$ 20          | \$ 5          |
| Direct labor cost per unit    | \$ 7            | \$ 15          | \$ 9          |
| Selling price per unit        | \$ 35           | \$ 105         | \$ 25         |

The company's manufacturing overhead (MOH) costs can be allocated to three major activities. These activities and the amount of overhead cost to be allocated to each activity for the current year are given below:

| <u>Activity Cost Pools</u>  | <u>MOH Costs</u> | <u>Expected Activity</u> |                |               |
|-----------------------------|------------------|--------------------------|----------------|---------------|
|                             |                  | <u>Ordinary</u>          | <u>Complex</u> | <u>Simple</u> |
| Machine setups required     | \$ 17,000        | 700                      | 1,000          | 1,700         |
| Purchase orders issued      | 3,700            | 300                      | 200            | 500           |
| Maintenance requests issued | <u>10,800</u>    | 400                      | 600            | 800           |
|                             | \$ 31,500        |                          |                |               |

Using the data above and an activity-based costing approach, determine the unit manufacturing cost of each product for the current year.

**Question 5.** Spring Company produces a part that is used in the manufacture of one of its products. The costs associated with the production of 5,000 units of this part are as follows:

|                            |          |
|----------------------------|----------|
| Direct manufacturing costs | \$40,000 |
| Variable factory overhead  | 50,000   |
| Fixed factory overhead     | 30,000   |

Of the fixed factory overhead costs, \$10,000 is unavoidable.

- Assuming there is no alternative use for the facilities, should the company take advantage of an offer from a supplier who is willing to sell same part for \$21 per unit?
- Would your answer to Part A change if the facilities could be rented for \$15,000 a year?

**Question 6.** Kampas Company uses a normal costing system with a single manufacturing overhead cost pool and machine hours as the cost allocation base. The following data are available for the year ended December 31, 2007.

|                                 |                     |
|---------------------------------|---------------------|
| Budgeted manufacturing overhead | \$125,000           |
| Actual manufacturing overhead   | \$110,000           |
| Budgeted machine hours          | 1,500 machine hours |
| Actual machine hours            | 1,250 machine hours |
| Budgeted direct labor hours     | 850 labor hours     |
| Actual direct labor hours       | 870 labor hours     |

- Determine the budgeted manufacturing overhead rate.
- What is the manufacturing overhead allocated?
- Compute over-or under allocated manufacturing overhead in 2007.
- If actually 400 machine hours and 120 direct labor hours are used by Job 102. Compute the MOH allocated to Job 102.