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6.10.13

**L-5/T-1/ARCH**

**Date : 06/10/2013**

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-5/T-5 B. Arch. Examinations 2011-2012

Sub : **HUM 313** (Principles of Accounting)

Full Marks : 140

Time : 3 Hours

The figures in the margin indicate full marks.

USE SEPARATE SCRIPTS FOR EACH SECTION

**SECTION – A**

There are **FOUR** questions in this Section. Answer any **THREE**..

1. (a) Stealtech Inc. produces memory enhancement kits for fax machines. Sales have been very erratic in some months showing a profit and in some months showing a loss. The company's income statement for the most recent month is given below:

**(23 1/3)**

Sales (12,400 units @ Tk. 20 per unit)	Tk. 248,000
Less: Variable costs	<u>189,000</u>
Contribution margin	59,000
Less: Fixed cost for the period	<u>60,000</u>
Net operating loss	<u>Tk. 1000</u>

**Required:**

- (i) Compute the company's CM ratio and its break-even point in both units and taka.
- (ii) The sales manager feels that Tk. 8000 increase in the monthly advertising budget, combined with an intensified effort by the sales staff, will result in a Tk. 70,000 increase in monthly sales. If the sales manager is right, what will be the effect on the company's monthly net operating income or loss?
- (iii) The president is convinced that a 10% reduction in the selling price, combined with an increase of Tk. 15,000 in the monthly advertising budget will cause unit sales to double, what will the new income statement look like if these changes are adopted?
- (v) Refer to the original data. The company's advertising agency thinks that a new package would help sales. The proposed new package would increase packaging costs Tk. 0.50 per unit. Assuming no other changes, how many units would have to be sold each month to earn a profit of Tk. 5000? What will be the new break-even point in Tk. sales?
- (v) Assume that the operating results for the last year were as follows:

Sales	Tk. 360,000
Less: Variable costs	<u>162000</u>
Contribution margin	198,000
Less: Fixed costs	<u>180000</u>
Net operating income	<u>18,000</u>

What will be the degree of operating leverage in this situation?

The president expects sales will increase by 15% next year. By how much should net operating income increase (Use degree of operating leverage)

Verify your answer by preparing income statement.

Contd ..... P/2

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2. (a) Classify cost according to manufacturing point of view and discuss them with examples. (8 1/3)

(b) Various cost and sales data for Meriwell Company for the just ended year are as follows: (15)

Selling expenses	140,000
Beginning raw materials	90,000
Ending raw materials	60,000
Plant utilities	36,000
Direct labour	300,000
Depreciation, plant equipment	162,000
Purchase of raw materials	750,000
Sales	30,00,000
Insurance for factory	40,000
Indirect labour	150,000
Maintenance for plant equipment	87,000
Directors fees	130,000
Advertisement expenses	45,000
Sales manager's salary	20,000
Beginning work in process	180,000
Ending work in process	100,000
Beginning Finished goods	260,000
Ending Finished goods	210,000
Cleaning Supplies, factory	7000
Rent (2/3 for factory, 1/3 for office)	120,000
Gas and water	2500
Lubricant for machine	6000
Power and electricity	40,000
Transportation cost, factory	11,000

Required:

- (i) Prepare a cost of goods sold statement.
- (ii) Prepare an income statement.

3. (a) Discuss the concepts - costs, expenses, losses and assets. Give one example illustrating the relationship between them. (7 1/3)

(b) Various costs associated with the operation of factories are given below: (6)

- (i) Electricity used in operating machines,
- (ii) Rent on a factory building,

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**Contd ... Q. No. 3(b)**

- (iii) Depreciation of air purification equipment used in furniture production,
- (iv) Peaches used in canning fruit,
- (v) Sugar used in soft-drink production,
- (vi) Property taxes on the factory,
- (vii) Wages of workers painting a product,
- (viii) Cost of a hard drive installed in a computer,
- (ix) Wages of the company's accountant,
- (x) Screws used in ski production,
- (xi) Clay used in brick production,
- (xii) Glue used in bag production.

**Required:**

Indicate whether each cost would typically be treated as direct cost or an indirect cost with respect to units of product.

(c) Neptune Rental offers a boat rental service. Consider the following costs of the company over a relevant range of 5000 to 20,000 hours of operating time for its boats:

**(10)**

<u>Total Costs (Tk.)</u>	<u>Hours of Operating Time</u>			
	<u>5000</u>	<u>10,000</u>	<u>15,000</u>	<u>20,000</u>
Variable	20,000	?	?	?
Fixed	<u>180,000</u>	<u>?</u>	<u>?</u>	<u>?</u>
Total	<u>200,000</u>	<u>?</u>	<u>?</u>	<u>?</u>
<u>Cost per hour (Tk.)</u>	?	?	?	?
Variable	?	?	?	?
Fixed	<u>?</u>	<u>?</u>	<u>?</u>	<u>?</u>
Total	<u>?</u>	<u>?</u>	<u>?</u>	<u>?</u>

**Required:**

- (i) Explain the characteristics of variable cost and fixed cost.
- (ii) Compute the missing amounts, assuming that implied cost behaviour patterns remain unchanged over the relevant range of 5000 to 20,000 hours.

4. (a) Contrast between contribution break even chart and simple break-even chart.

**(5 1/3)**

(b) How does contribution margin helps in managerial decision making process?

**(4)**

(c) What do you understand by cost structure? Company P's cost structure includes costs that are mostly variable, where as company Q's cost structure includes costs that are mostly fixed. Which company will tend to realise the most rapid increase in profits in the condition of increasing sales and decreasing sales. Explain with hypothetical example.

**(8)**

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**Contd ... Q. No. 4**

(d) The data below have been taken from the cost record of Porter manufacturing company. A careful study shows average shipping cost will be Tk. 44,000 for 3000 units and if the number of units are 5000, the average shipping cost will be Tk. 60,000.

(6)

Required:

- (i) Using high & low point method, determine the variable cost per unit and the fixed cost in total.
- (ii) Draw a linear cost equation.

**SECTION – B**

There are **FOUR** questions in this Section. Answer any **THREE**.

5. (a) What is full disclosure principle? Explain with example.

(3)

(b) What are the elements of an accounting equation? Explain.

(2 1/3)

(c) Mr. Tanim operates "Premium Food Service" The following transactions occurred in the month of April, 2013:

(18)

April 1:	Invested cash in the business Tk. 120,000.
April 2:	Paid rent of the shop space for two months in advance Tk. 8,000.
April 4:	Food supplied to a customer and immediately collected cash Tk. 15,000.
April 10:	Food supplied to a customer on account Tk. 5,000.
April 12:	Paid salary expense of the month Tk. 10,000 in cash.
April 16:	Purchased food supplies on account Tk. 2,500.
April 18:	Received Tk. 2,000 in cash from the customers who have previously billed in transaction April 10.
April 20:	Paid for the supplies purchased on April 16.
April 22:	Incurred advertising expense for the month on account Tk. 6,000.
April 30:	The owner Mr. Tanim withdrew Tk. 10,000 from the business.

Required:

Show the effects of transactions on accounting equation.

6. (a) "Every debit must have its corresponding credit" - Explain.

(2)

(b) What is a Ledger? Why is it important?

(3 1/3)

(c) Mr. Hasan is the owner of "Hasan Electronics". Transactions for "Hasan Electronics" Company for the month of June, 2012 are presented below-

(18)

June 1:	Mr. Hasan invests Tk. 500,000 cash in his business.
June 5:	Purchase equipment on account for Tk. 15,000.
June 8:	Received Tk. 8,000 from a client, but electronic goods not yet transferred to the client.
June 10:	Borrowed Tk. 200,000 from a bank by signing a notes payable.
June 13:	Interest expense is paid Tk. 6,000 in cash.
June 25:	Earned Revenue Tk. 25,000 in cash.

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**Contd ... Q. No. 6(c)**

Required:

- (i) Record the transactions in journal.
  - (ii) Prepare ledger of any four account.
7. (a) "Adjusting entries are required by the cost principle of accounting". Do you agree? Explain. (3 1/3)
- (b) "Olive Company" has following information taken from the Trial Balance at June 30, 2012: (20)

Olive Company  
Trial Balance  
June 30, 2012

Accounts Name	Debit (Tk.)	Credit (Tk.)
Cash	12,000	
Account Receivable	5,500	
Accounts Payable		3,500
Notes Payable		4,500
Capital		16,600
Store Furniture	6,600	
Rent Expense	2,400	
Supplies	1,300	
Service Revenue		2,600
Salary Payable		600
Total	<u>27,800</u>	<u>27,800</u>

Adjusting entries:

- Rent is accrued but not paid for the month Tk. 600.
- Unused supplies on June 30 is Tk. 200.
- The store furniture is being depreciated at Tk. 200 per month.
- Service performed to a customer Tk. 1,100 but unbilled during the month.
- Accrued salary is Tk. 800.

Required:

- (i) Prepare the adjusting entries.
- (ii) Prepare an adjusted trial balance at June 30, 2012.

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8.

Eastern Housing  
Trial Balance  
31st December, 2012

Particulars	Debit (Tk.)	Credit (Tk.)
Cash	16,500	
Accounts Receivable	4,000	
Prepaid Insurance	2,400	
Supplies	1,500	
Office furniture	15,000	
Accounts payable		3,500
Unearned Service revenue		6,000
Capital		30,000
Service revenue		3,900
Salaries expense	2,000	
Rent expense	1,000	
Drawings	1,000	
Machinery	20,000	
Good will	10,000	
Long-term investment	8,000	
Mortgage payable		30,000
Tax payable		8,000
<b>Total</b>	<b><u>81,400</u></b>	<b><u>81,400</u></b>

Other information:

One third of the <sup>measured</sup> service revenue has been earned during the period.

Insurance expires at the rate of Tk. 200 per month.

Required:

(a) Prepare: -

(17 1/3)

(i) An Income statement,

(ii) An owners equity statement,

(iii) A classified balance sheet as on 31st December, 2012.

(b) Compute: -

(6)

(i) Current ratio.

(ii) Net Profit Margin ratio.

(iii) Return on total asset ratio.

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Date : 24/07/2013

L-5/T-1/ARCH

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-5/T-1 B. Arch. Examinations 2011-2012

Sub : **ARCH 595** (Industrial Building Planning and Design)

Full Marks : 140

Time : 3 Hours

The figures in the margin indicate full marks.

USE SEPARATE SCRIPTS FOR EACH SECTION

**SECTION - A**

There are **FOUR** questions in this section. Answer **Q. No. 1** and any **TWO** from the rest.

Use illustration where necessary.

1. (a) Discuss different colour coding system of safety signs and symbols. (10)  
(b) Describe 'means of escape' in a factory building. (10)
2. Define industry, industrial building and factory. Describe classification by factory types. (25)
3. Present a comparative analysis of different types of roof form. (25)
4. Discuss different types of lighting condition and mechanical ventilation system in an industry. (25)

**SECTION - B**

There are **FOUR** questions in this section. Answer **Q. No. 5** and any **TWO** from the rest.

5. Write short notes on any two of the following in relation to industrial buildings: (10×2=20)
  - (a) Conveyors
  - (b) Floor Finishes
  - (c) Impact of Landscape design
6. Discuss the factors that affect industrial locations. (25)
7. 'Architect plays a vital role in master planning and site development of industry' - Elaborate. (25)
8. Discuss the importance of legislation related to design of industrial buildings, use exchange of Bangladesh. (25)  
*example*

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