

L-5/T-1/ARCH

Date : 17/07/2017

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-5/T-1 B. Arch. Examinations 2015-2016

Sub : ARCH 561 (Specification)

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.

1. (a) Specifications and Drawings should complement each other-Explain. **(10)**
(b) What are the 'General Rules' need to be followed while writing Specifications? **(10)**

2. What is meant by 'Specification Section'? The sequence of arranging specification section is based on the chronological development of the actual construction process - Explain with example. **(25)**

3. (a) What are the contents of general and specific paragraph? Discuss the sequence need to be followed at the time of writing specific paragraph. **(10)**
(b) Discuss specification language in relation to Sentences, Punctuation, Capitalization, Tenses, words and phrases. **(15)**

4. Write short notes on the followings (Any Two) **(25)**
 - (i) Specification Format
 - (ii) Supplemental documents
 - (iii) Specification Types

SECTION – B

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

5. Discuss the followings in relation with the schedules of materials (Any Four) **(20)**
 - (a) Reinforced Steel
 - (b) Cement
 - (c) Sand
 - (d) Coarse Aggregate
 - (e) Mass Concrete.

6. Discuss general conditions section in the book of specification that establishes legal responsibilities and relationships of all parties involved in construction work. Describe five different points in standard conditions of contract between Owner and Contractor. **(25)**

Contd P/2

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7. (a) Describe Reinforced Cement Concrete (R.C.C) schedule of item with respect to the scope, materials, methods of construction and precautions. **(25)**
8. Specify the following Schedule of Items (Any Two) **(25)**
- (a) Earth excavation work and Sand filling work in foundation work.
 - (b) Different types of Brick work in Super structure.
 - (c) Distempering and Plastic paint on internal and external surfaces.
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BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-5/T-1 B. Arch. Examinations 2015-2016

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) What are the components and elements of financial statements? (3 1/3)
- (b) Reprox Resort has the following transaction on May, 2016. (20)
- May-1: The owner's Investment Tk. 10,00,000 cash.
- May-2: Advertised the business in "Daily Star" for Tk. 5,000 on account.
- May-6: Purchased supplies for each Tk. 60,000.
- May-10: Purchased office equipment for Tk. 2,50,000; paying Tk. 50,000 in cash and remaining on account.
- May-12: Provided services and billed client for Tk. 3,00,000.
- May-15: Withdraw cash for personal use Tk. 10,000.
- May-18: Salary for the month paid in cash Tk. 25,000.
- May-20: Paid balance due to Daily Star.
- May-22: Received from customer on account from May-12 transaction.
- May-24: Provide services for cash Tk. 20,000.
- Required: Prepare the tabular summary of the transaction.
2. (a) What are the steps of the recording process? Describe. (5 1/3)
- Thromster's grocery shop has the following transactions of the month end July, 2016. (18)
- July-1: Investment Tk. 1,00,000 cash to the business.
- July-5: Sell goods in cash Tk. 20,000.
- July-10: Paid shop rent Tk. 8,000.
- July-13: Paid employee salary Tk. 5,000.
- July-15: Purchase furniture on account Tk. 10,000.
- July-19: Sell goods on account Tk. 5,000.
- July-25: Owner take Tk. 1,000 cash from the business.
- July-30: Receive cash for sale on account.
- July-31: Hire an employee for he next month.
- Required: Prepare Journal entries for the month of July 2016.

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3. (a) Describe the financial elements “Assets”, “Liability”, “Equity” and “Income” with criteria and examples. (13 1/3)

(b) The following are the balance figures from the ledger of Zerox Company. Prepare appropriate trial balance from the accounts. (10)

Cash Tk. 8700; Accounts Receivable Tk. 11500; Supplies Tk. 650; Prepaid Insurance Tk. 1200; Equipment Tk. 18000; Accumulated Depreciation Equipment Tk. 700; Notes payable Tk. 10000; Accounts payable Tk. 2500; Salaries Payable Tk. 725; Interest payable Tk. 100; Unearned Rent Revenue Tk. 1050; Owner’s Capital Tk. 22000; Owner’s drawings Tk. 1600; Service Revenue Tk. 17100; Rent Revenue Tk. 2260; Salaries Expense Tk. 8725; Rent expense Tk. 2900; Depreciation expense Tk. 700; Supplies expense Tk. 850; Utilities expense Tk. 1510; Investment expense Tk. 100.

4. (a)

(23 1/3)

Faxton Company
Adjusted Trial Balance
August 31, 2016

Account Titles	Debit (Tk.)	Credit (Tk.)
Cash	8700	
Accounts Receivable	11,500	
Supplies	650	
Prepaid Insurance	1200	
Equipment	17,300	
Notes payable		10,000
Account Payable		2500
Salaries Payable		725
Interest Payable		100
Unearned Rent Revenue		1050
Owner’s Capital		22,000
Owner’s Drawing	1600	
Service Revenue		17,100
Rent Revenue		2260
Salaries Expense	8725	
Rent Expense	2900	
Depreciation Expense	700	
Supplies Expense	850	
Utilities Expense	1510	
Interest Expense	100	
Total	55,735	55,735

Required: Prepare an Income Statement, an owner’s Equity statement and a Balance Sheet as on August 31, 2016.

HUM 313(ARCH)

SECTION – B

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

- 5. (a) Define the following terms different cost, opportunity cost, and sunk cost. (5)
 - (b) How will you differentiate between direct material and manufacturing overhead cost? (4)
 - (c) “Fixed cost is fixed up to a relevant range” – Do you agree with the statement. Why or Why not? (4)
 - (d) Distinguish between (i) a variable cost. (ii) a fixed cost, and (iii) a mixed cost (5)
 - (e) Show the effect of an increase in volume have on – (5 1/3)
 - o Unit fixed costs
 - o Unit variable costs
 - o Total fixed costs
 - o Total variable costs
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- 6. (a) What are the assumptions of Cost, Volume and Profit (CVP) analysis? Do you think those assumptions are unrealistic? Why those assumptions are required? (5 1/3)
 - (b) Saiham Company manufactures and sells a specialized earphone that can protect users from radiation generated from mobile phone. The company’s contribution format income statement for the most recent year is given below: (18)

Particulars	Total (Tk.)	Per Unit(Tk.)	Percentage
Sales (20,000 Unit	120,0000	60	100
Variable Expense	(900,000)	45	?
Contribution Margin (CM)	300,000	15	?
Fixed Cost	(260,000)		
Net Operating Income	40,000		

In recent years sales are not as expected by the Sales Manager. Top level management want to overcome this and has asked you for an analysis of a number of items.

Required:

- (1) Compute the company’s CM ratio and variable expense ratio.
- (2) Compute the company’s break-event point in both units and sales Taka.
 - (i) Use the equation method.
 - (ii) Use shortcut method.
- (3) Assume that sales increase by Tk. 500,000 next year. If cost behavior patterns remain unchanged, by how much will the company’s net operating income increase? Use CM ratio to compute your answer.
- (4) Refer to the original data. Assume that next year management wants the company to earn a profit of at least Tk. 80,000. How many units will have to be sold to meet this target profit?
- (5) Refer to the original data. Compute the company’s margin of safety and comment.

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Contd ... Q. No. 6(b)

(6) Refer to the original data. Suppose company want to bring a new policy which will increase variable cost Tk. 5 per unit but sales unit will be increased by 6000 unit as quality of product will be increased. Should this change be implemented?

(7) Refer to the original data. Suppose company want to bring a new policy which will increase fixed cost Tk. 40,000 but sales unit will be increased by 100 unit as quality of product will be increased. Should this change be implemented?

(8) In an effort to increase sales and profits, management is considering the use of a higher quality speaker. The higher-quality speaker would increase variable costs by Tk. 3 per unit but management could eliminate one quality inspector who is paid a salary of Tk. 30,000 per year. The sales manager estimates that the higher-quality speaker would increase annual sales by at least 20%. Would you recommend that the changes be made?

7. Here is the cost related information of Duke Ltd. for the year ended 31st December 2016.

(23 1/3)

Particulars	Tk.
Raw material 1 st January 2016.....	10,000
Work In progress 1 st January 2016.....	20,000
Finished Goods 1 st January 2016.....	45,000
Purchase of Raw Material.....	90,000
Carriage Inward.....	2000
Return of Raw Material.....	8000
Factory Labor Cost.....	6300
Finance Manager Salary.....	25,000
Carriage Outward.....	5000
Factory Gunman Salary.....	4700
Entertainment Expense.....	3000
Material used for Office.....	5600
Factory Electricity Bill.....	10,000
Fuel Cost of Delivery Pick-Up Van.....	1400
Office Electricity Bill.....	1200
Office Telephone Bill.....	800
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Sales Commission.....	3500
Office Peon Salary.....	2500
Raw Material 31 st December 2016.....	20,000
Finished Goods 31 st December 2016.....	40,000
Work in Progress 31 st December 2016.....	17,000
Sales.....	240,000

Required: Prepare

- (i) Schedules of Cost of Goods Manufactured
- (ii) Cost of Goods Sold Statements
- (ii) Income Statement.

HUM 313(ARCH)

8. (a) The administration of Apolo Hospital would like a cost formula linking the administrative costs involved in admitting patients to the number of patients admitted during a month. The Admitting Department's costs and the number of patients admitted during the immediately preceding eight months are given in the following table:

(14)

Month	Number of Patients Admitted	Admitting Departmental Cost(Tk.)
May	1800	14,700
June	1900	15,200
July	1700	13,700
August	1600	14,000
September	1500	14,300
October	1300	13,100
November	1100	12,800
December	1550	14,600

Required:

- (i) Plot the above information in a graph and comment whether linear or non-linear relationship exist between number of patient admitted and departmental cost.
 - (ii) Use the high-low method to estimate the fixed and variable components of admitting costs.
 - (iii) Express the fixed and variable components of admitting costs as a cost formula in the form $y = a + bx$.
 - (iv) Suppose in the month of January 2000 patient will be admitted. Find out the expected fixed cost and variable cost for 2000 patient.
- (b) Consider the following Porter Company manufacturers furniture, including tables. Selected costs are given below:

(9 1/3)

- (i) The tables are made of wood that costs \$100 per table.
- (ii) The tables are assembled by workers, at a wage cost of \$40 per table.
- (iii) Workers assembling the tables are supervised by a factory supervisor who is paid \$38,000 per year.
- (iv) Electrical costs are \$2 per machine-hour. Four machine-hours are required to produce a table.
- (v) The depreciation on the machines used to make the tables totals \$10,000 per year. The machines have no resale value and do not wear out through use.
- (vi) The salary of the president of the company is \$100,000 per year.
- (vii) The company spends \$250,000 per year to advertise its products.
- (viii) Salespersons are paid a commission of \$ 30 for each table sold.
- (ix) Instead of producing the tables, the company could rent its factory space for \$50,000 per year.

Required: Classify these costs according to the various cost terms (types)

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Date : 12/08/2017

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-5/T-1 B. Arch. Examinations 2015-2016

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

Full Marks : 140

Time : 3 Hours

USE SEPARATE SCRIPTS FOR EACH SECTION

SECTION – A

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

The questions are of equal value.

Use sketches where necessary.

1. Define industry and factory. Explain the impact of innovations and inventions during 19th century on industrial building.
2. Discuss the factors affecting the location of an industry.
3. Describe the 'Means of Escape' and the importance of 'safety signs & symbols' in a factory building.
4. Discuss different types of industrial roof forms.

SECTION – B

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

The figures in the margin indicate full marks.

5. 'Industry impacts on site and surroundings'. – expand in the light of landscape architecture. (23 1/3)
 6. Explain how architects can contribute in designing energy efficient industrial buildings in Bangladesh. (23 1/3)
 7. Justify the importance of legislation on industrial buildings. (23 1/3)
 8. Write short notes on the followings: (23 1/3)
 - (a) Loading and unloading areas.
 - (b) Floor finish.
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