L-3/T-1/URP **Date: 01/09/2018**

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-3/T-1 BURP Examinations 2017-2018

Sub: **PLAN 321** (Housing and Real Estate Development)

Full Marks: 210 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) "By housing it is meant not only a mere form of shelter." — Discuss how important housing is for an individual. **(5)**

   (b) What is land tenure? Discuss different types of property rights. **(10)**

   (c) 'A person's security of tenure may be threatened in many ways' — Explain. **(20)**

2. (a) Discuss the myths and realities about affordable housing. **(10)**

   (b) 'There are important actors in housing provision in Dhaka with certain responsibilities' — Explain. **(10)**

   (c) Discuss some key principles of Collaborative Approach of housing. To what extent this approach might be useful in Bangladesh? **(15)**

3. (a) Discuss Government's efforts until year 2000 in Bangladesh towards giving access to housing for the poor. **(20)**

   (b) Discuss some of the demographic characteristics that influence housing choice. **(10)**

   (c) To what extent 'Grihayan Tahabil' is contributing towards housing finance in Bangladesh? **(5)**

4. (a) 'Housing situation in urban area of Bangladesh is, at present, quite unsatisfactory' — Explain. **(20)**

   (b) Discuss the ways how government can mobilize resources for providing housing. **(15)**

Contd P/2

PLAN 321

SECTION – B

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

5. (a) Why housing is different from other commodities? How does the heterogeneity of dwelling affect the choice of housing? Briefly explain in the context of Dhaka city. **(8+8=16)**

(b) Consider a simple city of 15,00,000 people where average urban density is 4 unit per acre. A structure costs $1,00,000 to build and would rent for $8,000 per year considering an interest rate of 8% per year. Annual agricultural income from farming is equal to $6,00,000 per sq. mile. The cost of commuting is $300 per year per mile. Calculate the recardian rent at city center and 10 miles away from the city center. **(10)**

(c) "Housing Price Function shows the relation between housing price and distance to the city center" — Do you agree with the statement? Justify your answer with example. **(9)**

6. (a) "General warranty deed is the most commonly used and most desirable type of deed from buyer's perspective."— Do you agree with the statement? Justify your answer. **(5)**

(b) Suppose, you have been working as a research officer at HBRI (Housing and Building Research Institute). You have been appointed to submit an evaluation report on "Purbachal New Town Project". Give a list of the investment risk of the real estate project. Briefly explain the stages you would follow for the real estate projects' efficiency evaluation. **(10+10=20)**

(c) Briefly explain the "Filtering Model of Housing Market" in the context of Dhaka city. **(10)**

7. (a) Explain real estate trade cycle with the help of simple stock flow model. **(10)**

(b) Briefly explain the different types of property rights associated with real estate. **(5)**

(c) "The effluent fee policy is more efficient than zoning policy. But, cities use zoning policy instead of effluent fee policy." — Do you agree with the statement? Justify your answer with example. **(12)**

(d) Describe the exogenous determinants of real estate demand with example. **(8)**

8. (a) What are the sources of market inefficiencies in real estate market? **(5)**

(b) What are the factors affecting the structural vacancy of housing? Discuss both from home-owner's and tenant's perspective. **(10)**

(c) How does the housing voucher program differ from rent certificate? Which one do you think should be better from recipient's perspective? Give proper explanation with graphical representation. **(5+15=20)**

L-3/T-1/URP **Date : 11/09/2018**

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-3/T-1 BURP. Examinations 2017-2018

Sub : **CE 361** (Elements of Solid Mechanics)

Full Marks: 210 Time : 3 Hours

USE SEPARATE SCRIPTS FOR EACH SECTION

The figures in the margin indicate full marks.

SECTION – A

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

1. (a) The coplanar concurrent force system acting through point A, as shown in Figure 1, is in equilibrium. What are F and θ? **(10)**

   (b) In figure 2, the bodies A and B are connected by a cord and rest on smooth inclined planes. Here W_A = 60 lb and W_B = 75 lb. Determine the angle θ and tension in the cord. **(15)**

   (c) What is the difference between coplanar non-concurrent force and non-coplanar concurrent force system? Explain with figures. **(10)**

2. (a) Draw axial force and axial strain diagram of the following elastic beam (Figure 3). Determine the relative displacement of point D from point A for the elastic steel bar of variable cross sections shown in Figure 3 caused by the application of concentrated forces. Area A_{AB} = 3000mm^2, A_{BC} = 700mm^2 and A_{CD} = 1000mm^2. Modulus of Elasticity, E = 200 GPa. **(23)**

   (b) Determine the location of a sector of a circle subtending angle 2β. **(12)**

3. (a) Define stress and strain. Derive axial deformation, Δ = PL/AE, where the symbols have their usual meaning. **(10)**

   (b) What is stress tensor? Write down the matrix representation of a stress tensor. **(7)**

   (c) Find the reaction according to support and select the size of member FC and CB in the truss of Figure 4 for the given loading condition. Given allowable stress is 130MPa. **(18)**

4. (a) Distinguish between statics, kinetics and kinematics. **(8)**

   (b) A continuous string ABCDE, Figure 5, passes over smooth pegs at B and D 20 in. on centers. To the ends of the string are attached the weights W_A = 8 lb and W_E = 5 lb. A 10 lb weight is attached at C and the three bodies are in equilibrium. Determine the distance a and the angle α. **(17)**

   (c) Find the resultant of the loads shown in Figure 6 and its location. **(10)**

Contd P/2

CE 361/URP

SECTION – B

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

5. (a) A bar of variable cross section held on the left, is subjected to three forces. P1 = 4 kN, P2 = -2 kN, P3 = 3 kN, as shown in Figure 7. Find the maximum axial stress if $A_1 = 200\ mm^2$, $A_2 = 100\ mm^2$ and $A_3 = 150\ mm^2$. **(12)**

(b) Locate the centroid of the composite section shown in Figure 8. **(15)**

(c) Define moment of inertia and state the parallel axis theorem. **(8)**

6. (a) A bar is axially loaded as shown in Figure 9. Determine the normal stress and shear stress on the plane AB shown in Figure. **(8)**

(b) The concrete pier shown in Figure 10 is loaded at the top with a uniformly distributed load of 15 kN/m^2. Determine the stress at a level 1 m above the base. Concrete weights approximately 25 kN/m^2. **(14)**

(c) Determine the moment of inertia with respect to X & Ȳ axes for the figure shown in Figure 11. **(13)**

7. (a) A solid bar 40 mm in diameter and 2500 mm long consists of a steel and an aluminum part fastened together, as shown in Figure 12. When axial force P is applied to the system, a strain gage attached to the aluminum indicates an axial strain of 873 μm/m.

(i) Determine the magnitude of applied force P. **(12)**

(ii) If the system behaves elastically, find the total elongation of the bar. Let E_{st} = 200 GPa and E_{Al} = 70 GPa. **(11)**

(b) Find the reaction at support of the beam shown in Figure 13 due to the given loading conditions. **(12)**

8. (a) Write the definition of shear force and bending moment with their sign convention. **(8)**

(b) Draw shear force and bending moment diagram of the following beam. (Figure 14) **(19)**

(c) What is a rigid body? Distinguish between uniformly distributed load and uniformly varying load with diagrams. **(8)**

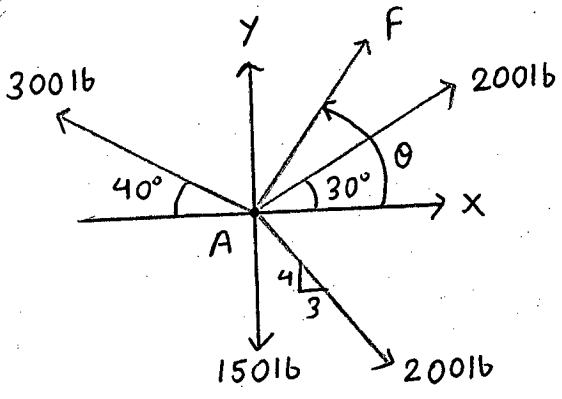


Figure 1

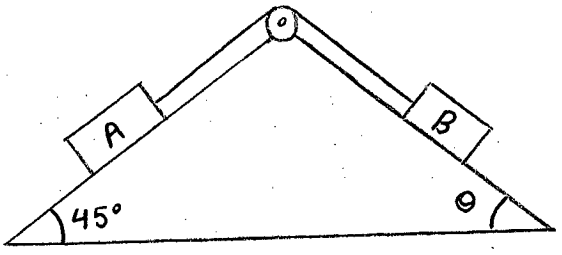


Figure 2

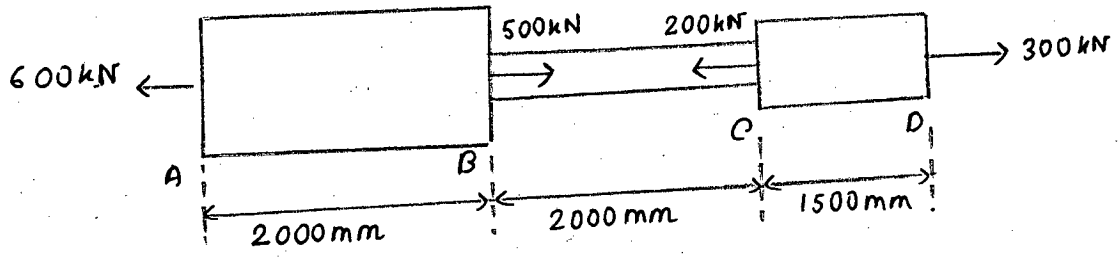


Figure 3

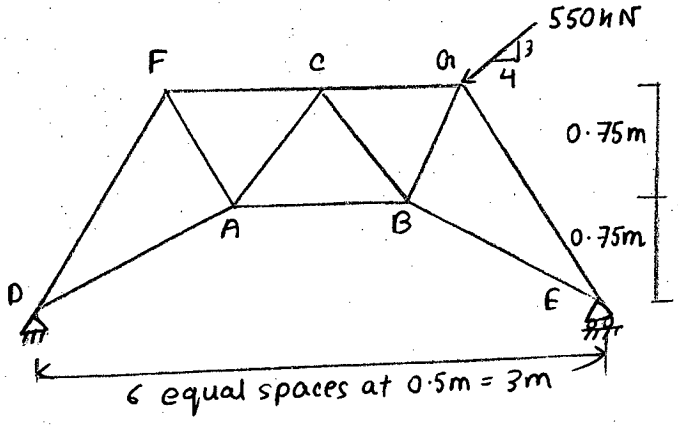


Figure 4

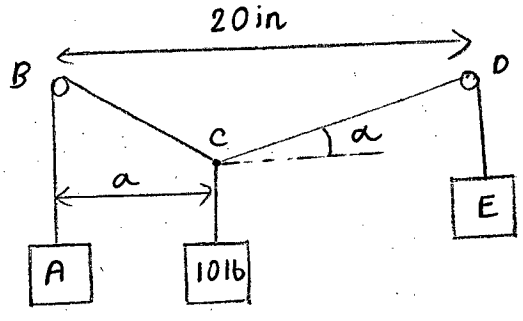


Figure 5

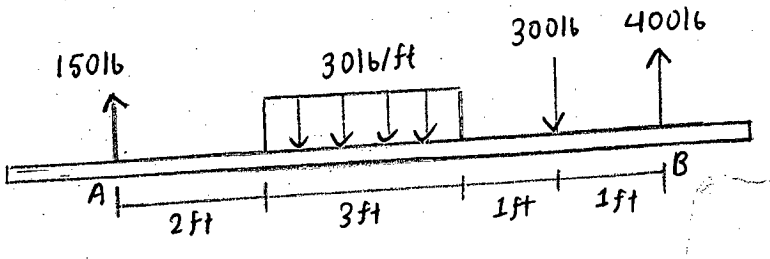


Figure 6

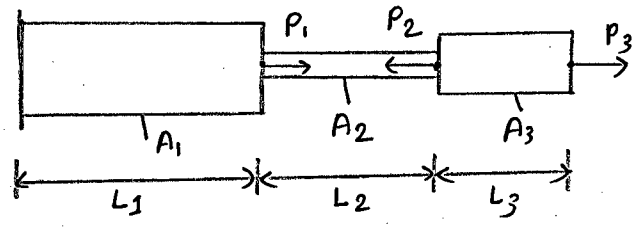


Figure 7

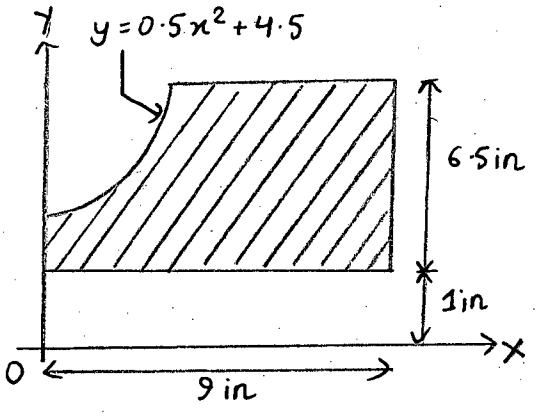


Figure 8

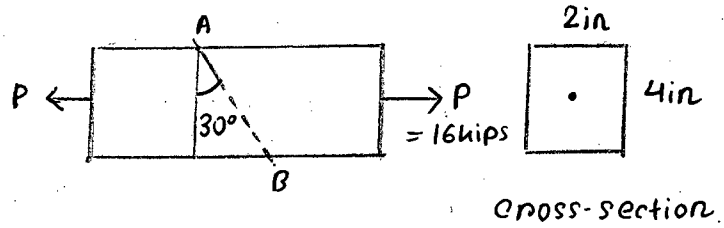


Figure 9

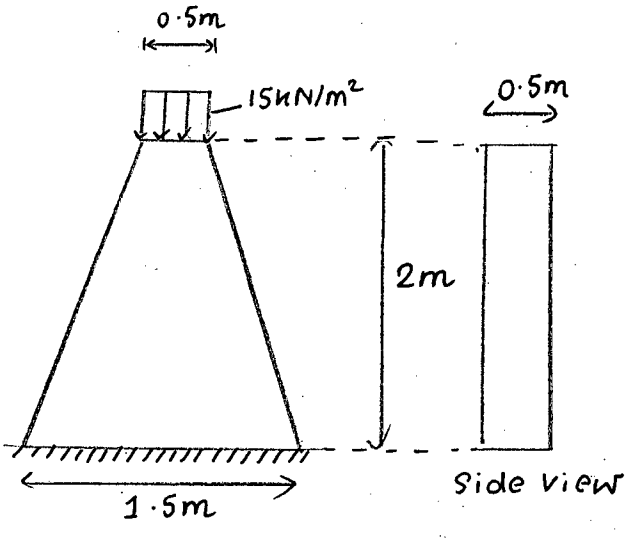


Figure 10

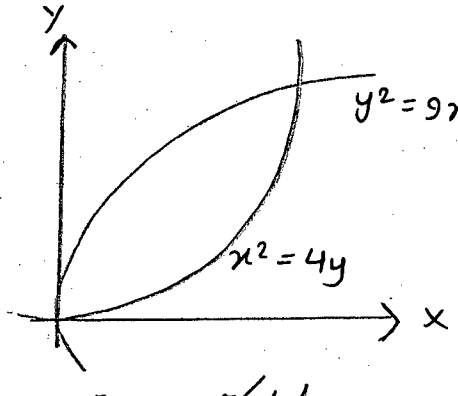


Figure 11

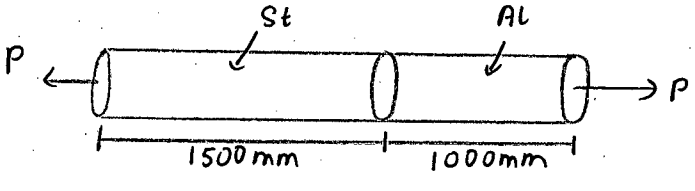


Figure 12

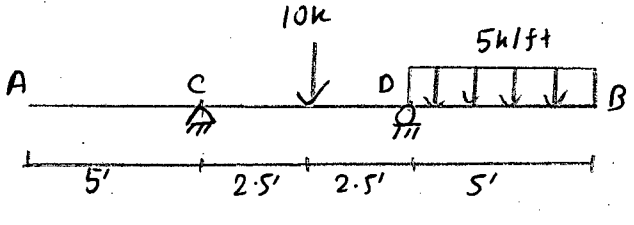


Figure 13

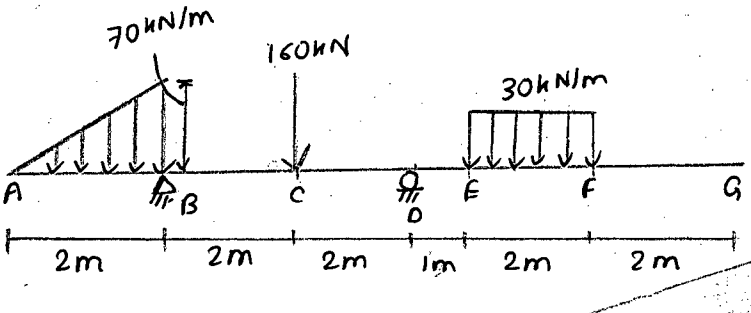


Figure 14

L-3/T-1/URP **Date : 17/09/2018**

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-3/T-1 BURP Engineering Examinations 2017-2018

Sub : **PLAN 343** (Traffic and Transportation Strudy)

Full Marks: 210 Time : 3 Hours

USE SEPARATE SCRIPTS FOR EACH SECTION

The figures in the margin indicate full marks.

SECTION – A

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

1. (a) Briefly describe the factors those affect the carriageway width of a roadway. **(10)**

   (b) Suppose, you are given an opportunity to redesign the roadway between Polashi intersection and Nilkhet intersection. Draw a neat sketch of the cross-sectional elements you would like to see from the perspective of an urban roadway. Briefly describe how your proposed design would make a difference in terms of overall experience of the roadway. **(20)**

   (c) Distinguish between 'side slope' and 'super elevation'. **(5)**

2. (a) Suppose, your firm has been awarded to design a seven-leg intersection. If you are in charge to make decision, which interchange type you would pick, and why wouldn't you prefer the other ones over the chosen one? Limit your comparison to two other types of interchanges. **(15)**

   (b) Briefly describe the factors responsible for road crashes in Bangladesh. **(10)**

   (c) If the shortest distance between a car entering a trap zone and the observer is 5m, and the angle created between the observed and the moment the car exits the trap zone is 60 degree then calculate the speed of the car if it takes 6 sec to cross the trap zone. **(10)**

3. (a) Briefly describe the purpose of providing channelization at intersection. **(15)**

   (b) Given the data in the table-1 calculate intersection volume and intersection delay. **(20)**

Table – 1

Time period (pm)	Departure volume	Queue length
4:00 – 4:15	50	0
4:15 – 4:30	55	0
4:30 – 4:45	62	5
4: 45 – 5:00	65	10
5:00 – 5:15	60	12
5:15 – 5:30	60	5
5:30 – 5:45	62	0
5:45 – 6:00	55	0

4. (a) Write short notes on the followings: **(4×5=20)**

   (i) Interplay between transportation and urban form

   (ii) Intersection design principles in Bangladesh

   (iii) Colour and pattern used in traffic markings.

   (iv) Comparative benefits of automatic and manual volume counts.

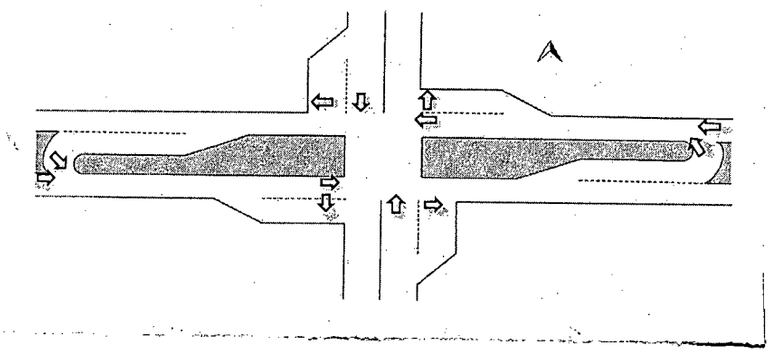
   (b) For the following intersection design (Figure -1) determine the number and type of potential conflict points. **(15)**

Contd P/2

PLAN 343

Contd... Q. No.4(b)

Figure – 1



SECTION – B

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

5. Discuss the role of transportation in the economic sector **(35)**

6. (a) What are the characteristics of traffic management? **(10)**

   (b) List the common traffic management measures and describe three of them. **(25)**

7. Two aerial photographs were taken 40 seconds apart, over a south-bound lane of Dhaka-Mymensingh Highway. The following data were obtained from these photographs. **(35)**

Vehicle	Positions (m)	
	Photo 1	Photo 2
1	1980	3060
2	1740	2630
3	1650	2740
4	990	1940
5	880	1600
6	550	1250
7	0	750

Plot the trajectories on a graph paper and compute average flow, space mean speed and density over the 4000 m length of the lane.

8. Write notes on any <u>two</u> of the following three topics below: **(17 ½ ×2=35)**

   (a) Traffic volume and its aspects
   (b) Hierarchy of urban roads
   (c) Impacts of Transportation on land use.

L-3/T-1/URP **Date: 23/09/2018**

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-3/T-1 BURP Examinations 2017-2018

Sub: **WRE 309** (Introduction to Water Resources Planning)

Full Marks: 210 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**.

Assume any reasonable value where necessary.

1. (a) Different between the followings: **(4×2=8)**

(i) Specific yield and specific retention (ii) Detention pond and retention pond.

(b) Show with a neat sketch, the elements of a hydrologic cycle. Briefly describe the different forms of precipitation. **(5+6=11)**

(c) What is orographic lifting? Calculate the precipitable water in a saturated air column 4 km high above 1 m^2 of ground surface. The surface pressure is 101.3 kPa, the surface air temperature is 30°C, and the lapse rate is 6.5°/km. Use 2 km increment in elevation. **(2+14=16)**

2. (a) Explain Intensity Duration Frequency (I-D-F) relationship relating to the rainfall over a basin. How does land use and drainage density affect the storm hydrograph? **(3+6=9)**

(b) Enlist the steps of computation used in Thiessen polygon method. For a drainage basin of 600 km^2, the following data are given for a rainfall isohyets: **(5+7=12)**

Isohyetals (interval) (cm)	15-12	12-9	9-6	6-3	3-1
Inter-isohyetal area (km^2)	92	128	120	175	85

(c) At Dhanmondi lake in the capital city Dhaka, the following data are available for the month of August: **(14)**

Latitude = 23.8103° N

Elevation (above sea level) = 4 m

Mean monthly temperature = 29°C

Mean relative humidity = 83%

Mean observed sunshine hours = 8 h

Wind velocity at 2 m height = 8.5 mph

Estimate the daily evaporation from the lake water by Penman's formula. Use the attached equations and table.

Contd P/2

WRE 309/URP

3. (a) Define (i) Cone of depression (ii) Isohyet (iii) Rating curve **(3×1=3)**

(b) Give a short notes on storm water drainage system of BUET campus. **(6)**

(c) The mean annual flood of a river is 1500 cumec and the standard deviation of the annual flood series is 650 cumec. What is the probability of a flood of a magnitude 2000 cumec occurring in the river in next 5 years? Use Gumbel's method and assume the sample size is to be very large. **(8)**

(d) Write the practical uses of unit hydrograph. The ordinate of a 2-h unit hydrograph are given: **(4+14=18)**

Time (hour)	0	2	4	6	8	10	12	14	16	18	20	22
2-h UH ordinate (m^3/s)	0	25	100	160	190	170	110	70	30	20	6	0

Determine the ordinate of a S curve hydrograph and using this, determine the ordinate of a 4-h unit hydrograph.

4. (a) List the direct and indirect methods to calculate discharge of a river or a channel. Show with a neat sketch the groundwater terminology. **(4+8=12)**

(b) State the Darcy's law of ground water movement. Estimate the discharge per unit width of aquifer from a fully penetrating well operating under steady state in a confined aquifer of 30 m thickness. Given the drawdowns observed at two observation wells located at 25 m and 150 m from the well are 3.0 m and 0.22 m respectively and hydraulic conductivity is 5 m/day. **(3+8=11)**

(c) A rural catchment has an area of 400 ha. It has following land use or land over: **(12)**

Land use/cover	Area (ha)	Runoff coefficient
Forest	110	0.10
Pasture	60	0.11
Cultivated land	230	0.30

Maximum length of travel of water in the catchment is 1800 m and the difference in elevation between the most remote point on the catchment and the outlet is 12.5 m. If a culvert for drainage at the outlet of this area is to be designed for a return period of 20 years, estimate the peak flow rate. The maximum I-D-F relationship for the water shed is given by

$$i = \frac{6.311 * T^{0.1523}}{(D+0.5)^{0.945}}$$

Where i = intensity of rainfall (cm/h), T = return period (years) and D = duration of rainfall (hours).

Contd P/3

WRE 309/URP

SECTION – B

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

5. (a) What do you understand by Alluvial River? Discuss different types of Alluvial rivers based on the variations of discharge. **(2+6)**

   (b) What do you understand by river training? Explain why river training is important for Bangladesh. **(2+5)**

   (c) What is revetment? Write down the necessary characteristics of revetment. **(1+6)**

   (d) Write down the importance of Navigation. **(5)**

   (e) What is canalization? Show the operation of typical navigation lock using sketches. **(2+6)**

6. (a) What do you understand by Water resources planning? Discuss different levels of water resources planning. **(2+6)**

   (b) Write short notes on (i) Bends (ii) Crossings (iii) Meandering **(7)**

   (c) What is Groyne? Write down its objectives. **(5)**

   (d) Discuss different types of Dredging. **(7)**

   (e) Write down the causes of flood. Write down the factors influencing flood damage. **(3+5)**

7. (a) Name a river that is passing through or near your District. Name the type of this river. **(3)**

   (b) What is Cutoff? Draw qualitative diagram of the formation of Cutoffs. **(2+3)**

   (c) What is the purpose of guide bank? Sketch a qualitative diagram of a typical guide bank. **(3+3)**

   (d) Compare the traditional and integrated approach of water resources planning. **(6)**

   (e) What do you understand by Irrigation? Write down the governing factors of irrigation planning. **(6)**

   (f) Discuss the following surface irrigation methods (i) Border strip flooding (ii) Furrow irrigation. **(9)**

8. (a) What do you understand by Delta? Write down the conditions for the formation of delta. **(4)**

   (b) Discuss various channel processes or fluvial processes of River formation. **(9)**

   (c) What do you understand by dredging? Write down it's objectives. **(2+6)**

   (d) Discuss about the circular waterways around Dhaka city. **(6)**

   (e) Define IWRM. Write down the principles of IWRM. **(2+4)**

   (f) Discuss the practice of water pricing in Bangladesh. **(4)**

WRE309

Equations and tables for question no 2.(c)

$$PET = \frac{AH_n + E_a\gamma}{A+\gamma}$$

$$H_n = H_a(1-r)\left(a + b\frac{n}{N}\right) - \sigma T_a^4(0.56 - 0.092\sqrt{e_a})\left(0.10 + 0.90\frac{n}{N}\right)$$

$$E_a = 0.35\left(1 + \frac{u_2}{160}\right)(e_w - e_a)$$

Table 3.3 Saturation Vapour Pressure of Water

Temperature (°C)	Saturation vapour pressure e_w (mm of Hg)	A (mm/°C)
0	4.58	0.30
5.0	6.54	0.45
7.5	7.78	0.54
10.0	9.21	0.60
12.5	10.87	0.71
15.0	12.79	0.80
17.5	15.00	0.95
20.0	17.54	1.05
22.5	20.44	1.24
25.0	23.76	1.40
27.5	27.54	1.61
30.0	31.82	1.85
32.5	36.68	2.07
35.0	42.81	2.35
37.5	48.36	2.62
40.0	55.32	2.95
45.0	71.20	3.66

Table 3.4 Mean Monthly Solar Radiation at Top of Atmosphere, H_a in mm of Evaporable Water/Day

North latitude	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0°	14.5	15.0	15.2	14.7	13.9	13.4	13.5	14.2	14.9	15.0	14.6	14.3
10°	12.8	13.9	14.8	15.2	15.0	14.8	14.8	15.0	14.9	14.1	13.1	12.4
20°	10.8	12.3	13.9	15.2	15.7	15.8	15.7	15.3	14.4	12.9	11.2	10.3
30°	8.5	10.5	12.7	14.8	16.0	16.5	16.2	15.3	13.5	11.3	9.1	7.9
40°	6.0	8.3	11.0	13.9	15.9	16.7	16.3	14.8	12.2	9.3	6.7	5.4
50°	3.6	5.9	9.1	12.7	15.4	16.7	16.1	13.9	10.5	7.1	4.3	3.0

Table 3.5 Mean Monthly Values of Possible Sunshine Hours, N

North latitude	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0°	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
10°	11.6	11.8	12.1	12.4	12.6	12.7	12.6	12.4	12.9	11.9	11.7	11.5
20°	11.1	11.5	12.0	12.6	13.1	13.3	13.2	12.8	12.3	11.7	11.2	10.9
30°	10.4	11.1	12.0	12.9	13.7	14.1	13.9	13.2	12.4	11.5	10.6	10.2
40°	9.6	10.7	11.9	13.2	14.4	15.0	14.7	13.8	12.5	11.2	10.0	9.4
50°	8.6	10.1	11.8	13.8	15.4	16.4	16.0	14.5	12.7	10.8	9.1	8.1

r = reflection coefficient (albedo). Usual ranges of values of r are given below.

Surface	Range of r values
Close ground corps	0.15–0.25
Bare lands	0.05–0.45
Water surface	0.05
Snow	0.45–0.95

L-3/T-1/URP **Date : 29/09/2018**

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-3/T-1 BURP Examinations 2017-2018

Sub : **HUM 225** (Accounting)

Full Marks: 140 Time : 3 Hours

USE SEPARATE SCRIPTS FOR EACH SECTION

The figures in the margin indicate full marks.

SECTION – A

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

1. (a) What is meant by Break-even point? **(3 1/3)**

(b) Crown Creative makes high quality personal Digital Assistant. Sales and production data relating to the most recent year are given below: **(20)**

Sales (in unit)	2800
Selling price per unit (Tk.)	265
Contribution margin ratio	60%
Annual fixed costs (Tk.)	111,300

Management is anxious to improve the company's profit performance and has asked for several items of information.

Requirements:

(i) Compute break-even point in units and sales in taka.

(ii) Assume that sales increase by Tk. 60,000 next year. If cost behavior patterns remain unchanged, by how much will company's net income increase?

(iii) Refer to the original data. Assume that next year management wants to earn a Tk. 182,850 profit. How many units will have to be sold to meet this target profit?

(iv) Refer to the original data. The sales manager is convinced that a 15% reduction in the selling price combined with a Tk. 56,100 increase in advertising cost could cause annual sales in units to increase by 40%. Would you recommend that the company should do as the sales manager suggests?

(v) Refer to the original data. Compute margin of safety both in Tk. and percentage form.

(vi) Compute degree of operating leverage (DOL) at the present level of sales. Assume that the company likes to increase its net profit by 90% next year. By what percentage would you expect sales to increase? Use DOL to answer. Verify your answer by preparing income statement.

2. (a) In what situation, absorption costing will result higher net income than variable costing? Why? **(3 1/3)**

(b) For the income year ended on December 31, 2014; you have been given the information below: **(20)**

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Contd... Q. No. 2(b)

Selling price per unit	Tk. 50
Variable Cost Per Unit	
Direct material	8
Direct labor	7
Variable manufacturing overhead	5
Variable selling and administrative overhead	2
Fixed Costs	
Fixed manufacturing overhead	100,000
Fixed selling and administrative overhead	80,000

During the year, a total 10,000 units produced but only 8,500 units are sold.

Requirements:

(i) Determine the unit product cost under absorption costing and variable costing methods.

(ii) Prepare income statements using under both of the methods.

3. (a) Distinguish between "Direct method" and "Reciprocal Service method" for cost allocation. **(3 1/3)**

(b) The relevant data for allocating service departments costs over production departments are given below: **(20)**

	Service Departments		Production Departments	
	Human resource	Information system	Government consulting	Corporate consulting
Cost before Allocation (Tk.)	600,000	24,00,000	87,56,000	124,52,000
Service provided by				
Human resource	-	25%	40%	35%
Information system	10%	-	30%	60%

Requirements:

You are asked to allocate the two service departments cost to the two production departments using the following methods:

(i) Direct method

(ii) Reciprocal Service method

4. (a) What is the difference between "Manufacturing overhead" and "Administrative overhead"? Give examples. **(3 1/3)**

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Contd... Q. No. 4

(b) The following information has been taken from the recording of Blue bird Company: **(10)**

Materials purchased	Tk. 100,000
Direct labour	200,000
Indirect labour	3,000
Salesman's Salaries	25,000
Miscellaneous factory expenses	4,000
Fuel for the factory equipment	2,000
Factory insurance	8,000
Depreciation, factory plant	40,000
Depreciation, office equipment	12,000
Power and electricity	5,000
Sales	420,000
Advertisement	17,000
Factory rent	20,000
Utilities (40% for factory, 60% for office)	15,000

Inventories	January 1	December 31
Raw materials	Tk. 10,000	Tk. 12,000
Work-in-process	15,000	9,000
Finished goods	5,000	7,000

Requirements:

(i) Prepare a cost of goods sold statement and

(ii) An income statement for the year.

(c) The data below have been taken from the cost records of Atlanta Processing Company. The data relate to the cost of operating one of the company's processing facilities at various levels of activity: **(10)**

Month	Unit Processed	Total Cost (Tk.)
January	8,000	14,000
February	4,500	10,000
March	7,000	12,500
April	9,000	15,500
May	3,750	10,000
June	6,000	12,500

Requirements:

(i) Using the high-low point method, determine the variable cost and the fixed cost;

(ii) Estimate a cost formula in the form of $y = mx + c$;

(iii) What will be the total processing cost, if the company processed 3000 units during the month of July?

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SECTION-B

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

5. (a) What are the components of financial statements? **(5)**

(b) Namira opened a boutique shop on March, 2017. Followings are some transactions for the month: **(18 1/3)**

March 1: Invested Tk. 20,000 for shop.
March 5: Purchased cloths on account Tk. 15,000.
March 7: Provide rent fee of shop Tk. 5,000 cash.
March 15: Sell cloths in cash Tk. 10,000 and on account Tk. 5,000.
March 20: Paid dues on cloths purchase Tk 15,000.
March 25: Purchase furniture in cash Tk. 10,000.
March 29: Get cash on receivables Tk. 5,000.
March 30: Withdraw cash for personal use Tk. 2,000.

Required:

(i) Prepare a tabular summary for the above transactions.
(ii) Prepare an income statement for March, 2017.

6. (a) What are the limitations of trial balance? **(5)**

(b) Harry Jane opened a laundry service at September 1, 2017. During the first month of operations the following transactions occurred: **(18 1/3)**

September 1: Invested Tk. 20,000 cash in the business.
September 3: Paid Tk. 1,000 cash for store-rent.
September 7: Purchase equipment at Tk. 25,000. Paying cash Tk. 10,000 and Tk. 15,000 on account.
September 15: Paid Tk. 1,200 for a one-year accident insurance policy.
September 20: Received bill for advertisement Tk. 200.
September 30: Withdrew Tk. 700 cash for personal use.
September 30: Provide services in cash Tk. 6,200

Required:

(i) Journalize the transactions for September, 2017.
(ii) Prepare cash ledger and capital ledger.

7. (a) What are the types of adjustments? **(4)**

(b) Rebaton Company has the following trial balance on June 30, 2017. **(19 1/3)**

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Contd... Q. No. 7(b)

Rebaton Company		
Trial Balance		
June 30, 2017		
	Debit (Tk.)	Credit (Tk.)
Cash	7150	-
Accounts Receivable	6000	-
Prepaid Insurance	3000	-
Supplies	2000	-
Office Equipment	15000	-
Account Payable	-	4500
Unearned Service Revenue	-	4000
Capital	-	21,750
Service Revenue	-	7900
Salary Expense	4000	-
Rent Expense	1000	-
Total	38150	38150

Adjustment Information:

- Supplies on hand at June 30, 2017 are Tk. 1100.
- Utility bill accrued Tk.150.
- The insurance payment is made for one year.
- Unearned revenue earned Tk. 2500.
- Salaries not paid and recorded Tk. 1500.
- Equipment depreciates Tk. 250 per month.
- Accrued revenue Tk. 2000 for the month.

Required:

(i) Prepare adjusting journal entries for the month June 30, 2017.

(ii) Prepare an adjusted trial balance.

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8. Following is the trial balance of Benton Company: **(23 1/3)**

Benton Company		
Trial Balance		
August 31, 2017		
	Debit (Tk.)	Credit (Tk.)
Cash	5400	-
Account Receivable	2400	-
Prepaid Insurance	1300	-
Supplies	2800	-
Equipment	60,000	-
Notes Payable	-	40,000
Account Payable	-	2400
Capital	-	30,000
Drawing	1000	-
Service Revenue	-	4900
Utilities Expense	800	-
Advertising Expense	400	-
Salaries Expense	3200	-
Total	77300	77300

Other data:

- Insurance expires Tk. 200 per month.
- Supplies on hand at August 31 are 1000 Tk.
- Equipment depreciates Tk. 900 per month.
- Interest accrued Tk. 500 during August.

Requirements:

(i) Prepare an Income Statement and Owner's Equity Statement.

(ii) Prepare a Balance Sheet on August 31, 2017.
