Khulna University of Engineering and Technology
Department of Architecture
B.Arch3rd Year 2nd Term Regular Examination, 2019
Course no: Arch-3231 Course title: Contemporary Architecture

Full Marks: 210 Time: 3 Hours

N.B i) Answer any three questions from each section in separate script.

ii) Figures in the right margin indicate full marks.

Section-A

1. a) Write the name of the architects known as "The New York Five." Why were they known as "The Whites"? 5+10 =15

b) What was the post-modern antidote to Mies van der Rohe's famous modernist dictum "less is more."? Describe Ventury House to explain the philosophy of Robert Ventury. 5+15 5+10 =15

2. a) What is the structural expressionism? Write the general traits of High-Tech architecture.

b) Describe the architectural features of Pompidou Centre, Paris as an example of early High-Tech architecture. Use proper sketches. 20 5+10 =15

3. a) What is deconstructivism? Write the characteristics of deconstructivism.

b) Explain the styles of deconstruction with proper illustrations and relevant examples. 20

4. a) Who are known as "The Grays"?Write Stern's five principles of Grayness. 5+10 =15

b) Write short notes onany two- 2x10 =20

i) Charles Moore Piazza d'Italia

ii) The Bilbao Effect

iii) Douglas House by Richard Meier

Section-B

5. a) Define contemporary architecture by your own understanding. 12

b) How the philosophy of Charles Correa was shaped by the thought of Gandhi. Discuss with examples. 23

6. a) 'Architecture without Architect', elaborate the statement with necessary illustrations. 20

b) Discuss critical regionalism under any three points of Kenneth Frampton. 15

7. a) Dhaka Art Institute is the finest example of contemporary architecture of Bangladesh. Discuss with sketches. 23

b) What do you mean by 'Pluralism' in architecture? 12

8. a) Discuss two works of Geoffery Bawa that reflect both tropical modernism and contemporary approach in architecture. 17

b) Distinguish between vernacularism and regionalism. 10

c) Write short note on Nayyar Ali Dada. 08

Khulna University of Engineering & Technology

Department of Architecture

B. Arch 3rd Year 2nd Term Regular Examination, 2019

Course No.: Arch 3221 Course Title: Urban Design

Full Marks: 210 Time: 03 Hours

N.B i) Answer any three questions from each section in separate script.

ii) Figures in the right margin indicate full marks.

Section-A

1. a) How did agora function as 'Assembly place' of ancient Greece? 15

   b) How was the town of Acropolis of Athens fortified? Illustrate the fortification system with clear layout of the town. 10+10

2. Discuss the urban design scheme of medieval towns with "Siena" as an example. 35

3. a) How was the "Reform Movement" influenced by the concept of 'Garden City'? Discuss with neat sketches. 20

   b) How was Howard's idea utilized in the design of Letchworth and Welwyn? Illustrate with neat sketches. 15

4. a) In your opinion, how does the layout of Battery Park city in Manhattan relate to contemporary urban design approaches? Explain with neat sketches. 20

   b) Do you think the "neighborhood concept" is an effective way of contemporary design? Explain with detailed features in support of your opinion. 15

Section-B

5. a) Relate the definition of "urban" with your understanding of Khulna city. 5

   b) What are the ambiguities of urban design? Explain with examples. 30

6. Considering functional dimension, do you think "Jatisangha Park area" is a good example of urban design? Justify your position. 35

7. Do you think in a case of "Riverfront" design, visual quality should be prioritized instead of spatial management? Put your arguments with evidence. 35

8. a) Briefly describe the elements that construct the image of your city in light of the theory of Kevin Lynch. 25

   b) Write a short note on "Quality of public realm". 10

Khulna University of Engineering & Technology

Department of Architecture

B. Arch 3rd Year 2nd Term Regular Examination, 2019

Course No: URP 3225 Course Title: Site and Area Planning

Full Marks: 210 Time: 3.00 Hours

N.B i) Answer any three questions from each section in separate script.

ii) Figures in the right margin indicate full marks.

Section-A

1. a. "Site planning is involved with different professions viz.Urban planning, Architecture, Landscape architecture and Civil Engineering"-Briefly explain with your judgments. 15

   b. There are four basic models of site planning in the history. Narrate those models to understand site planning. 10

   c. In site planning, road networks are classified into four categories based on the function. Clarify the statement. 10

2. a. Which pattern of subdivision plan is more suitable than others in case of Bangladesh especially in the flat regions as per your understanding and why? 10

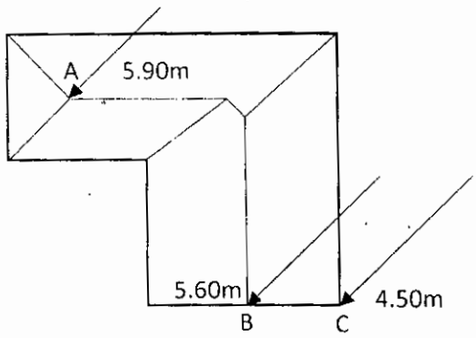
   b. What is Subdivision Plan? Why is compatible residential development necessary in Site and Area Planning? 15

   c. Draw a differentiating table between Grid Iron and Modified Grid Iron Pattern? 10

3. a. Prepare a shadow diagram at 9.00 am for point A, B and C of the plan from the given information 20

Chart 1	
Time	Angle (Azimuth)
9.00 am	46°25′
12.00 pm	5°52′
3.00 pm	325°25′

Chart 2	
Time	Length of Shadow Cast by 1m Pole
9.00 am	3.56 m
12.00 pm	2.25 m
3.00 pm	2.15 m



   b. Write about the benefits of using technologies for site and area planning in the modern era with its limitations. 05

   c. "Neighborhood is a nucleus for the development of the local social life of the environment" – Explain the statement with relations to site and area planning. 10

4. a. Write down the Objectives, Performance Criteria and Prescriptive measures with proper figure and explanation of the following elements of residential subdivision planning. 21
   (a) Setback (b) Drainage (c) Landscaping

   b. Annotate the following pattern of subdivision. 10
   (i) Combination Pattern (ii) Loop Street Pattern.

   c. Site plan locate objects and activities in SPACE and TIME. Why? 04

Section-B

5. a. Explain different types of air movement affecting site planning with necessary diagram. 10

   b. Describe different types of land use controls. There are two major site planning models. What are the differences between them? Explain with necessary diagram. 15

   c. What does surface runoff mean? What are the criteria evaluating existing vegetation of site? 10

6. a. Describe the basic model of site planning history with necessary diagram. 10

   b. Define different layers of site planning with example. Narrate Kevin Lynch's site planning process. 15

   c. "Site selection is necessary for SMART growth"- explain the statement with necessary example. 10

7. a. Suppose you are assigned to a recreational area development project located at the Southern Region of Bangladesh. Now prepare a site inventory checklist for analyzing the site. 12

   b. What does 7% slope mean? Describe the guiding principles of ROPS planning. 15

   c. How do land use controls achieve ecological sustainability? Explain. 08

8. a. Write short notes on the following issues: 35

   I. Classification of parks and open space with example
   II. Textural triangle
   III. Climate elements
   IV. Stand-alone site
   V. Hoyt sector model

Khulna University of Engineering and Technology
Department of Architecture
B.Arch3rdYear2nd Term Regular Examination, 2019
Course no: CE-3225 Course title: Structure-IV

Full Marks: 210 Time: 3 Hours

N.B i) Answer any three questions from each section in separate script.
ii) Figures in the right margin indicate full marks.
iii) Use graphs if necessary

Section-A

1.(a)Define : i. Diaphragm ii. Braced frame iii. Base shear iv. Storey v. Tower vi. Space frame vii. Story shear 15

(b) Describe different types of Plan irregularities and vertical irregularities. 20

2. (a)What are the practical considerations that should be taken into account when laying out shear walls in concrete buildings? 08

(b)The shear wall layout for a three-story building and the unfactored north-south lateral seismic loads acting on the building are shown in figure below. Design the north-south shear walls for the seismic loads as shown in figure 2(b). Given: f'c=4000 psi, fy=60000psi 27

3.(a) What are the causes and effects of earthquake? 12

(b) Briefly describe different basic structural systems. 15

(c) Show the general requirements and lap splice requirement of flexure member in special moment resisting frame. 08

4.(a) Describe different characteristics that are desired for an earthquake resistant buildings. 12

(b)What is meant by shear wall? Write down the advantages of shear wall. 10

(c) What are the different techniques for designing earthquake resisting structures? Describe base isolation technique. 13

Section-B

5. (a) Define column. Classify column according to length, shape and reinforcement. 07

(b) A RCC slab of 15'X15' is to be supported by two square tied columns designated as column-A and column-B. The slab having a thickness of 5 inch has to carry a service live load of 65 psf in addition with its self-weight. The design specification required that 2/3 of the slab load is to be carried by column-A. Design column-A using fc'=3500psi and fy =50000psi. Follow USD method. 28

6. (a) Why the strength reduction factors for columns are more conservative than those in beams? 07

(b) Design a spiral reinforced, circular column for p=450 kips with an eccentricity e=5.5'' using concrete of the fc=4ksi and steel of fy=60ksi. (Minimum two trial is required) 28

7. (a) What is an interaction diagram? Sketch an interaction diagram and describe its various features. 10

(b) Differentiate between flat plate and flat slab. Write down the relative advantages and disadvantages of flat plate over conventional RCC frame. 15

(c) Mention the ACI code provisions for designing a flat slab. 10

8. Design an interior panel of a flat slab having drop panel and column capital. The columns are 22ft on centre on both directions, and capital is 3ftX3ft at the bottom of the drop panel. The slab carries a uniform live load of 50psf and extra dead load of 50psf for interior partition wall along with 0.5kip/ft load on grid line for permanent partition wall, 20psf floor finish in addition to its self-weight. Assume fc'=3000psi; fy=72.5ksi. 35

Moments in slab with drops:

Column strip	Middle strip
$+0.20M_o$	$0.15M_o$
$-0.50M_o$	$0.15M_o$

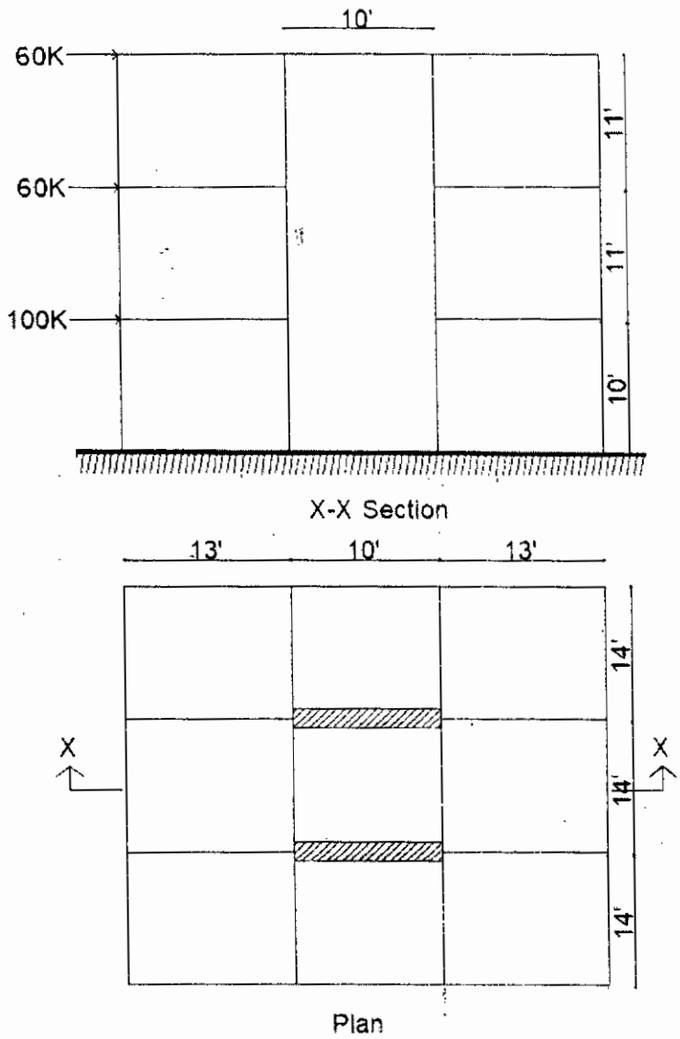


Figure for question 2(b)

Khulna University of Engineering and Technology
Department of Architecture
B.Arch 3rd Year 2nd Term Regular Examination, 2019
Course no: CE-3223 Course title: Plumbing

Full Marks: 210 **Time:3 Hours**

N.B i) Answer any three questions from each section in separate script.

ii) Figures in the right margin indicate full marks.

Section-A

1. (a) Why knowledge about water supply system is necessary for an Architect? 08
   (b) What are the objectives of water supply? Enumerate and explain briefly the essential elements of a water supply system for a city with the help of a neat sketch. 15
   (c) Enumerate the general considerations for planning a municipal water supply system. 12

2. (a) Discuss briefly how the quantity of water in a water supply scheme for a city is determined pointing out clearly the influence of each factor contributing to it's consumption. 09
   (b) Describe the elements of fire-fighting system. 09
   (c) According to Kuichling, how many fire streams may be called into use at the same time in a city with a population of 64,000? 09
   (d) Write short note on surface water source of Bangladesh. Mention the importance of groundwater for water supply in Bangladesh. 08

3. (a) State the methods of making population estimations. Which method do you consider best for population estimation in Bangladesh ? The population data of a upazila town is supplied below "**Table 3(a)**" 15

Year	1960	1970	1980	1990	2000
Population (thousands)	200	230	280	350	450

Calculate the population in 2020 and 2050 by least square parabola method.

   (b) What is **aquifer**? Draw the hydraulics of flow in a well through an unconfined aquifer. 08
   (c) What are the components of pipe system? In constructing an elevated circular R.C.C. tank if the cost per sqft. Of the shell is 1.5 times to that of the floor, what should be the most economical dimensions of the tank : Assume thickness of the floor = thickness of the shell 12

4. (a) What are the main purposes of transmission and distribution systems? 05
   (b) Describe the various layouts of distribution network in a water supply system with neat sketch and state their advantages and disadvantages. 15
   (c) Calculate the flow in the following pipe network for the inflow and outflow shown in the diagram using the **Hardy Cross method**. "**Figure 4(c)**" 15

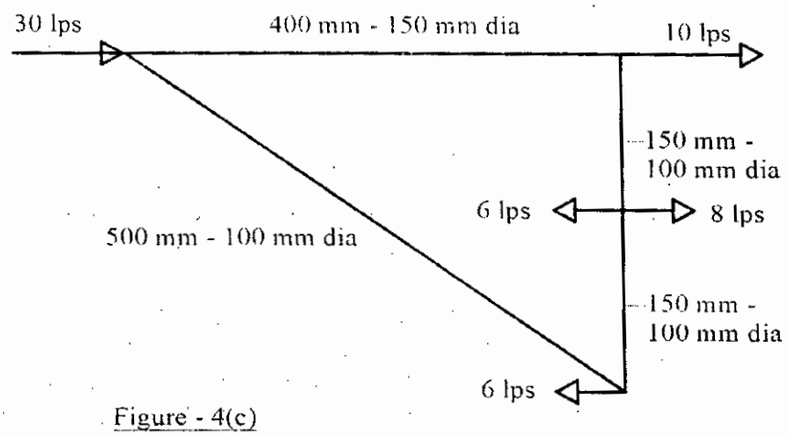


Figure - 4(c)

Section-B

5. (a) What is plumbing system? Briefly describe different types of pipes for drainage system. 10

(b) Distinguish between : (i) **Coupling and reducer** 15
(ii) **Valves and Elbows**
(iii) **Unions and Tees**
(iv) **PEX and PVC**
(v) **Brass and Cross**

(c) What is dielectric unions? Briefly describe various types of valves. 10

6. (a) What is saddle ? Describe the mechanism of globe valve with neat sketches. 10

(b) Define the following terms : (i) **Stack** 10
(ii) **Wastewater**
(iii) **Sewage**
(iv) **Sullage**
(v) **Vent pipe**

(c) What is traps? Describe the classification of traps based on the use. 10

(d) Distinguish between sewage and sullage. 05

7. (a) Show the following plumbing systems of drainage with diagram: 10
(i) **Single stack**
(ii) **One-pipe system**

(b) What is septic tank ? Why and where is it used ? 07

(c) What are STP screenings and Grit ? Write down the factors affecting self-purification of rivers/streams 11

(d) Draw a neat sketch of full sewage system with a large septic tank. 07

8. (a) What are the obstacles in plumbing work for multi-storied building? 10

(b) Define the following terms : (i) **Vertical Piping** 10
(ii) **Vent**
(iii) **Fire protection**
(iv) **Drainage**
(v) **Complex high rise structure**

(c) What are the design procedures of plumbing system for a 10 storey residential apartment? Determine **entrance loss, bending loss, contraction loss** and **friction loss** 15
by using following data ;
V_2=1.5 m/s,
K=Bending factor = 0.35 ,
f = frictional coefficient = 0.55 ,
l = length of pipe = 1 m ,
d = diameter of pipe = 0.25 mm