

L-1/T-2/ARCH

Date : 31/03/2019

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-1/T-2 B. Arch Examinations 2017-2018

Sub: **ARCH 175** (Art History)

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 Q. No. 4 and any **TWO** from the rest.

1. What is Stucco Art? Write about the four “Pompeian Styles” of Roman wall painting with appropriate illustrations. (3+15+5=23)
2. Describe and illustrate the term ‘Pictorial Narration with the example of ‘Warka Vase’ and ‘Standard of Ur’ of Sumerian Art Style. (11.5+11.5=23)
3. Explain ‘Dipylon Krater’ as an example of geometric Greek Art with simple annotated sketches. (15+8=23)
4. Give short notes on any THREE topics of the following: (8×3=24)
  - (a) Hieroglyph and Statue ‘Khafre Enthroned’.
  - (b) Cave painting.
  - (c) Words that art historians use to describe an artwork.
  - (d) Early Christian Art.

**SECTION - B**

There are **FOUR** questions in this section. Answer Q. No. 8 and any **TWO** from the rest.

5. Write elaborately about the subject matter and theme of the paintings of Shilpacharja Zainul Abedin, Artist Quamrul Hassan and Artist Shahabuddin Ahmed. (23)
6. What are the types of cubism Art? Give explanation with examples. (5+18=23)
7. Describe and illustrate the features of Surrealism and Impressionism Art. (23)
8. Give short notes on any THREE topics of the following: (8×3=24)
  - (a) Minimalism and Suprematism.
  - (b) Chiaroscuro and Sfumato technique of painting.
  - (c) Pop Art and Op Art.
  - (d) Visual Composition in the painting “The Last Supper”.

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-1/T-2 B. Arch Examinations 2017-2018

Sub: **HUM 147** (Introduction to Sociology)

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 do you define industrialization and deindustrialization? (5)  
(b) Write down the important characteristics of capitalism. (8 1/3)  
(c) Illustrate the positive and negative impacts of capitalism on a society. (10)
2. (a) What do you mean by natural green-house and man-made green house? (5)  
(b) How can we save the environment and make it greener? (8 1/3)  
(c) Define with examples 'Orange A' category industry and 'red' category industry. (10)
3. (a) Define social change. What are the major causes of social change? (8)  
(b) Write down different sources of social change. (10)  
(c) Explain Human Resource Development (HRD). (5 1/3)
4. Write short notes on any THREE of the following: (23 1/3)
  - (a) Consequences of global warming
  - (b) Refuse, reduce, reuse and recycle (4R's)
  - (c) Social consequences of industrial revolution
  - (d) Demographic transition theory.

**SECTION - B**

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

5. (a) Explain the elements of sociological imagination proposed by C. Wright Mills with suitable examples. (13 1/3)  
(b) Why is social research important? Identify the steps in doing social research. (5+5)

**HUM 147**

6. (a) Discuss how role theory explains the development of personality of an individual. **(13 1/3)**  
(b) Which of the problems associated with the media troubles you most, and why? **(10)**
7. (a) Explain the characteristics of 'Ideal Type of Bureaucracy' proposed by Max Weber. **(13 1/3)**  
(b) Describe the social impacts of globalization on Bangladesh. **(10)**
8. Write short notes on any **THREE** of the following: **(23 1/3)**  
(a) Social stratification.  
(b) Ethnocentrism.  
(c) Cultural universalism.  
(d) Socialization.
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**SECTION – A**

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

Symbols indicate their usual meaning.

1. (a) Define supply function. (5)  
 (b) What are the main causes of shifting of the supply curve? Explain. (10)  
 (c) Why do demand curves generally slope downward? (8 1/3)

2. (a) Define price elasticity of demand and cross elasticity of demand. What are the determinants of price elasticity of demand? (13 1/3)  
 (b) From the following table calculate elasticity of demand if you move from point A to C and explain what you understand from the result. (10)

POINT	Y	Q
A	5000	500
B	6000	600
C	7000	700

3. (a) Explain the properties of an indifference curve. (10)  
 (b) Explain consumer's equilibrium with the help of budget line and indifference curve. (13 1/3)
4. (a) How is price determined in an economy under competition? What will happen to the price and quantity due to change in supply? (10)  
 (b) From the following demand and supply functions, calculate equilibrium price and quantity and show the result in a graph. (13 1/3)

$$P = 0.20 Q + 10$$

$$P = -0.10 Q + 40$$

- (i) What will happen to the equilibrium price and quantity if government imposes a unit tax of TK 10 per unit?  
 (iii) Describe the change in equilibrium. Show the equilibrium coordinates on the same graph.

**HUM 701**

**SECTION - B**

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

5. (a) What are the assumptions of a perfectly competitive market? Explain them. (10)  
 (b) Graphically explain the short run equilibrium of a firm under perfect competition. (13 1/3)
6. (a) Define fixed cost and variable cost. (10)  
 (b) Complete the following table and sketch the graph explaining the relations among the various short run cost curves. (13 1/3)

(1) Quantity of output	(2) Total fixed cost	(3) Total variable cost	(4) Total cost	(5) Average fixed cost	(6) Average variable cost	(7) Average Total cost	(8) Marginal cost
1	80	30					
2	80	40					
3	80	45					
4	80	55					
5	80	75					
6	80	120					

7. (a) When does a firm emerges as a monopolist? (10)  
 (b) From the following revenue and cost functions calculate the profit maximizing level of output and maximum profit. (10)

$$R = 111Q - 2Q^2$$

$$C = \frac{1}{3}Q^3 - 8Q^2 + 122Q + 50$$

- (b) What are the conditions of profit maximization? (3 1/3)
8. (a) What do you understand by division of labour? Explain different types of division of labour. (8 1/3)  
 (b) What are the advantages and disadvantages of division of labour? Explain. (15)

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**SECTION – A**

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

1. Write short notes on (Any Four) of the followings: (4×5=20)
  - (a) Mannesmann System Connector.
  - (b) Mero System Connector.
  - (c) Unistrut System Connector.
  - (d) Welded rod space frame.
  - (e) Cylindrical Space frame.
  
2. (a) What do you understand by the terms ‘Space Structure’ ‘Truss’ and ‘Space Frame’? (15)  
(b) ‘The human hip bone is a highly expressive space structure’ – Explain with neat sketches. (10)
  
3. (a) Why and how a folded paper can support a certain load? How it can support more loads- Explain with neat sketches. (15)  
(b) Explain with neat sketches how a folded plate works. (10)
  
4. (a) What is Space-frame dome? How it can reduce cost of a structure? –Explain with neat sketches. (15)  
(b) What are the differences between Prof. Bauersfeld and Buckminster Fuller dome? (10)

**SECTION - B**

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

5. Specify the following buildings materials related to construction work. (Any Four) (4×5=20)
  - (a) CEB as building Material.
  - (b) Cord wood Walling.
  - (c) Roofing with Hollow Blocks.
  - (d) Adobe construction System.
  - (e) Straw bale Walling.

**ARCH 605**

6. (a) What is metal? Where metal is inevitable and why? (15)  
(b) Write short note on metal alloy with reference to architecture. (10)
7. (a) What are the major uses of plastic in construction industry? How one can recycle plastics? (15)  
(b) What are the similarities and dissimilarities between Rubber and Plastic? (10)
8. (a) What is prefabrication? Why modular co-ordination is important in prefabrication? (15)  
(b) What are the advantages and disadvantages of prefabrication? (10)
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**SECTION – A**

There are **FOUR** questions in this section.

Question No. 4 is compulsory and answer any **TWO** from the rest.

1. (a) What are the constituents of good brick clay? (15)  
(b) Explain the process of Brick burning. (10)
  
2. (a) How many ways stones may be classified? Describe the geological classification of stones. (10)  
(b) What are the important building stones available in Bangladesh? (10)  
(c) Name different vacuities of stones for various types of construction. (5)
  
3. (a) What is the crudest form of iron? State its characteristics. (5)  
(b) What are the other forms of Iron? Elaborate them. (10)  
(c) Explain the properties and uses of different types of steel. (10)
  
4. (Any Two)  
(a) Describe different types of Portland cement. (10)  
(b) What are the important varieties of Timber available in Bangladesh? (10)  
(c) Mention names, properties and uses of nonferrous metal used in Building industry. (10)

**SECTION - B**

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

5. (a) Write short notes on (Any Two) (5×2=10)
  - (i) Purposes and uses of paints and varnishes.
  - (ii) Classification of Paints depending on common uses.
  - (iii) Terracootta
  
- (b) Discuss briefly the constitutions of Paints. (10)



## ARCH 165

6. (a) Discuss about the principle constitutions of Glass and narrate their various functions. (10)
- (b) Mention the different commercial forms of Glass and explain their characteristics and uses. (15)
7. Name the different types of Boards used as alternative to wood as finish materials. Explain their characteristics (Any Five). (25)
8. (a) Explain different categories of Plastics. (5)
- (b) Elaborate on use of plastic in building industry. (10)
- (c) With neat sketches, discuss different types of Tiles as finish materials. (10)
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L-1/T-2/ARCH

Date : 14/03/2019

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-1/T-2 B. Arch Examinations 2017-2018

Sub : **ARCH 155** (Climate and Design)

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 Q. No. 1 and any **TWO** from the rest.

1. Write short notes on any TWO of the following: (10×2=20)
  - (a) Sot-air temperature
  - (b) Thermal balance of human body
  - (c) Climatic features of warm-humid climate.
  
2. (a) Critically explain the earth-sun relationship. (15)  
(b) How the earth-sun relationship affects the amount of radiation received on the earth? (10)
  
3. (a) Analyze Global wind pattern. (20)  
(b) Evaluate the influence of topography on air flow. (5)
  
4. (a) Discuss the heat exchange processes of buildings. (15)  
(b) How the 'comfort zone' of the bioclimatic chart is being modified by the effects of air movement and radiation? (10)

**SECTION - B**

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

5. Elaborate the concept of cross ventilation, shadow angles and thermal gradients in the architectural design of a building with sketches. (23 1/3)
  
  6. What is conductance? How the total conductance of a multilayer body can be calculated? Critically explain 'Heat flow rate' and 'Conductivity'. (23 1/3)
  
  7. What are the functions of ventilation? How orientation, position and controls of openings create impact on indoor air flow? (23 1/3)
  
  8. Evaluate the role of the site planning, form, envelop and external spaces of a building in Dhaka to achieve indoor thermal comfort of the occupants. (23 1/3)
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**SECTION - A**

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

1. (a) What are the factors those play a key role in Ergonomics? (4)
- (b) State the different principles of Ergonomics. Describe physiological and anthropometric background of ergonomics. (13  $\frac{1}{3}$ )
- (c) Define the social significance of Ergonomics. (6)
2. (a) What are the advantages of sitting posture in compare to other postures. (4)
- (b) State different effective position for reading tasks with the necessary sketches. (9  $\frac{1}{3}$ )
- (c) What are the guidelines for a comfortable prolonged standing posture? (10)
3. (a) What are the recommendations for improving the working environment while sitting activity occurs. (15  $\frac{1}{3}$ )
- (b) What are the guidelines to create optimum circumstances for lifting. (8)
4. Write short notes on (any Two): (23  $\frac{1}{3}$ )
  - (a) Lifting techniques
  - (b) Hand and arm posture
  - (c) Biomechanical background

**SECTION - B**

There are **FOUR** questions in this section. Answer Question No. 8 and any **TWO** from the rest.

5. (a) Define the methods to be applied to reduce the adverse effect of environmental factors while considering indoor activities. (5)
- (b) Describe the Guidelines on noise in brief. (8)
- (c) What are the measures to prevent vibration in case of indoor activities? (10)

## ARCH 601

6. (a) What are the guidelines on thermal comfort to be maintained designing the work place? (13)
- (b) Explain different measures to control the adverse effect of hot and cold climate to ensure a healthy work condition. (10)
7. What is visual information? Describe the methods to improve the perception of visual information through proper application of Diagrams and Characters. (23)
8. Write short notes on any Three: (8+8+8=24)
- (a) Hearing Conservation
  - (b) Guidelines on vibration
  - (c) Guidelines on brightness difference
  - (d) User-population relationship
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**L-1/T-1/ARCH**

**Date : 01/10/2018**

**BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA**

**L-1/T-1 B.Arc. Examinations 2017-2018**

**Sub : ARCH 603 (Design in the Tropics)**

**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 Question No. 1 and any **TWO** from the rest.

1. Write short notes on the followings (Any TWO): (2×10=20)
  - (a) Earth-Sun relationship
  - (b) Sol-air temperature
  - (c) Thermal gradients.
2.
  - (a) What are the climatic zones of tropical climate? (5)
  - (b) Differentiate the climate characteristics between warm-humid and hot-dry climate. (20)
3.
  - (a) What are the suitable variables of thermal preference? (10)
  - (b) Describe the regulatory mechanisms of a human body? (15)
4. Describe the following features of shelters of hot-dry climate: (8 1/3 ×3=25)
  - (a) Form and Planning
  - (b) External spaces
  - (c) Roof, wall and openings.

**SECTION - B**

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

5. Write short notes on the following (any two): (2×10=20)
    - (a) Wind Tower
    - (b) Sources of Heat gain in Buildings.
    - (c) Thermal Mass
  6.
    - (a) What are the various phases of environmentally sensitive design approach? (10)
    - (b) How 'Passive Design' can lower the energy demand of a building in a tropical country like Bangladesh? (15)
  7. Discuss the strategies to control heat gain by a building in terms of: (25)
    - (a) Building form and external finishes
    - (b) Landscaping
    - (c) Building envelope
  8. What are the levels of Passive Solar Urban Design? Discuss various strategies of each level. (25)
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L-1/T-1/ARCH

Date : 01/10/2018

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-1/T-1 B.Arch Examinations 2017-2018

Sub : **ARCH 703** (Art Appreciation)

Full Marks: 140

Time : 3 Hours

USE SEPARATE SCRIPTS FOR EACH SECTION

The figures in the margin indicate full marks.

**SECTION - A**

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

1. Define sculpture and discuss the traditional means of making sculpture. (17 1/2)
2. What are the functions and types of drawing? Discuss with example. (17 1/2)
3. What are the processes of Relief in Printmaking? Give a short note on Intaglio process of printmaking. (17 1/2)
4. How do you appreciate and analysis Visual Art? Explain with examples. (17 1/2)
5. Write short notes on any two following painting Medias. (8 3/4 + 8 3/4)
  - (a) Gouache
  - (b) Acrylic
  - (c) Fresco

**SECTION - B**

There are **FIVE** questions in this section. Answer Question No. 6 and any **THREE** from the rest.

6. What is contemporary art? Write short notes on any FOUR of the following. (4×6 1/4 =25)
  - (a) Generative Art
  - (b) Environmental Art
  - (c) Interactive Art
  - (d) Bio Art
  - (e) Computational Design.
7. What is Computational Art? Describe the process and salient features of Computational Art. (15)
8. Give a short account of the Modern Art movement in Bengal. (15)
9. "They were dubbed 'impressionist' by a critic who objected to the sketchy quality of their painting." Here who were indicated by the critic? Short notes on the painting style, criticized: (15)
10. What is Conceptual Art? Write short history and philosophy behind Conceptual Art. (15)

**SECTION - A**

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

1. (a) What are the assumptions of a perfectly competitive market? Explain. (10)  
 (b) Explain the closing down point of a firm under perfect competition. (3 1/3)  
 (c) From the following revenue and cost functions, calculate the profit maximizing level of output and maximum profit. (10)
- $$R = 100Q - Q^2$$
- $$C = \frac{1}{3}Q^3 - 7Q^2 + 111Q + 90$$
2. (a) What do you understand by division of labour? Explain different types of division of labour. (8 1/3)  
 (b) What are the advantages and disadvantages of division of labour? Explain. (15)
  3. (a) What do you understand by localization of industries? What are the causes of localization of industries? (10)  
 (b) Explain the advantages and disadvantages of localization of industries. (13 1/3)
  4. (a) What are the methods of measuring national income? Explain any two of them. (10)  
 (b) What are the problems of measuring national income in a developing country like Bangladesh? Explain (13 1/3)

**SECTION - B**

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

5. (a) Clarify the concept of utility in Economics and explain the law of diminishing marginal utility with numerical as well as graphical presentations. (10)  
 (b) What do you know about the demand function of a commodity? Describe the common factors that affect the demand for a commodity. (13 1/3)

## HUM 701/ARCH

6. (a) Define market demand and market supply curves. Explain how the interactions between market demand and market supply curves determine equilibrium price and output of a commodity. (13  $\frac{1}{3}$ )
- (b) Given respectively the demand and supply functions of a commodity X  
 $Q_{dx} = 920 - 25P_x$  and  
 $Q_{sx} = 450 + 9P_x$   
where,  $P_x$  is the price of the commodity. Find the equilibrium price and quantity of the commodity X. If the Government imposes a VAT of tk.3 per unit, what would be the new equilibrium price and quantity? What is the proportion of the VAT that the consumers will bear? (10)
7. (a) Define different types of elasticity of demand and describe their importance in Economics. (10)
- (b) What is an indifference curve? Illustrate the optimal consumption point of a consumer with the help of indifference curves and budget line. (13  $\frac{1}{3}$ )
8. Write short notes on any THREE of the following: (23  $\frac{1}{3}$ )
- (a) 'Change in supply' and 'Change in quantity supplied'
  - (b) Fundamental economic problems
  - (c) Substitution effect and income effect of a price change
  - (d) Factors that affect elasticity of demand
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**SECTION – A**

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

1. (a) Explain why psychology is called a scientific study of behavior and mental processes. (6)  
(b) Delineate the functions of different branches of psychology. (17 1/3)
2. (a) Compare between sensation and perception processes. (6)  
(b) How do we perceive objects and shapes according to Gestalt Laws? (17 1/3)
3. (a) What are the major theories of human motivation? (6)  
(b) How can we motivate people to use Maslow's need hierarchy theory? (17 1/3)
4. (a) What is meant by emotion? (6)  
(b) Why and how do we experience different emotions? (17 1/3)

**SECTION - B**

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

5. (a) What criteria should be fulfilled for a behavior to be learned? (6)  
(b) How and why do we learn by rewards and punishments? (17 1/3)
  6. (a) Draw and label a clear diagram of the 3-stage model of human memory. (6)  
(b) Why and how do we forget information? (17 1/3)
  7. (a) What are the basic components of emotional intelligence? (6)  
(b) Describe the basic theoretical orientations of intelligence. (17 1/3)
  8. (a) How do psychologists test or measure personality? (6)  
(b) Discuss the 'Big Five' model of personality? (17 1/3)
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