

L-2/T-1/ARCH

Date : 07/01/2013

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-2/T-1 B. Arch. Examinations 2011-2012

Sub : **HUM 111** (English)

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 other **TWO** from the rest.

1. (a) Explain with reference to the context any one of the following: (8)
- (i) "To live anyhow is better than not at all".
- (ii) "In a moment she came out, opened the doors, and invited us in".
- (b) Answer any one of the following: (10)
- (i) Why did the Lawyer break the compact? Critically evaluate the Lawyer's stand.
- (ii) "The Diamond Necklace" illustrates the individual conflict and the consequences of a romantic zeal – Discuss.
- (c) Answer any three of the following: (12)
- (i) How did the messenger god help Odysseus?
- (ii) Why did the banker want to kill the lawyer?
- (iii) Why was Mrs. Fa^urestier astonished to see Matilda after ten years?
- (iv) "I am amazed to see you" – who is amazed to see whom and why?
- (v) Why did Mrs. Matilda Loisel utter a cry of joy in the midst of her poverty?
2. Recast and correct any ten of the following sentences: (20)
- (i) The cluster of grapes are thick.
- (ii) The old president has been defeated and new officers elected.
- (iii) Shormi, you and I should be there in time.
- (iv) I like to swim, playing tennis, and riding.
- (v) The players are going to repeat the performance again.
- (vi) It is I who is to make the call.
- (vii) If I were him I should not accept the post.
- (viii) Walt Whitman occupies a most unique place in literature.
- (ix) We shall combine the three departments into one.
- (x) We haven't scarcely any sugar.
- (xi) Abraham Lincoln was one of the great man in American history.
- (xii) Jamil was an alumna of BUET.

HUM 111 (ARCH)

3. (a) Give the meanings of any ten of the following words: (10)

affluent, tepid, chicanery, bleak, perpetual, sagacity, augment,
garrulous, hamlet, moron, sinuous, repel.

- (b) Make sentences with any ten of the following words: (10)

clemency, limpid, grouchy, facile, smolder, tyro, uncouth,
abject, meticulous, pauper, skeptical, ordeal.

4. Write a précis of the following passage with a suitable title: (20)

An important part of management is the making of rules. As a means of regulating the functioning of an organisation so that most routine matters are resolved without referring each issue to the manager they are an essential contribution to efficiency. The mere presence of carefully considered rules has the double – edged advantage of enabling workers to know how far they can go, what is expected of them and what channels of action to adopt on the one side, and on the other, of preventing the management from the behaving in a capricious manner. The body of rules fixed by the company for itself acts as its constitution, which is binding both on employees and employers, however, it must be remembered that rules are made for people, not people for rules. If conditions and needs change rules ought to change with them. Nothing is sadder than the mindless application of rules which are out-date and irrelevant. An organisation suffers from mediocrity if it is too rule-bound. People working in will do the minimum possible. It is called "working to rule" on just doing enough to ensure that rules are not broken. But this really represents the lowest level of the employer/employee relationship and an organisation afflicted by this is in an unhappy condition indeed. Another important point in rule-making is to ensure that they are rules which can be followed. Some rules are so absurd that although everyone pays lip-service to them, no one really bothers to follow them. Often the management knows this but can do nothing about it. The danger of this is, if a level of disrespect for one rule is created this might lead to an altitude of disrespect for all rules. One should take it for granted that nobody likes rules, nobody wants to be restricted by them, and, given a chance, riots people will try and break them. Rules which cannot be followed are not only pointless, they are actually damaging to the structure of the organisation.

HUM 111 (ARCH)

SECTION – B

There are **FOUR** questions in this section. Answer any **THREE** question including **Q. No. 5** as compulsory.

5. (a) Read the passage carefully and answer the questions that follow:

(30)

Education has always had two objects: on the one hand, to give skill; and on the other, to impart a vaguer thing which we may call wisdom. The role of skill has become very much larger than it used to be and is increasingly threatening to oust the role of wisdom. At the same time it must be admitted that wisdom in our world is useless except for those who realize the great part played by skills, for it is increase of skill that is the distinctive feature of your world.

Although scientific skill is necessary, it is by no means sufficient. A dictatorship of men of science would very soon become horrible. Skill without wisdom may prove to be purely destructive. For this reason, if for no other, it is of great importance that those who receive a scientific education should not be merely scientific, but should have some understanding of that kind of wisdom which, if it can be imparted at all, can only be imparted by the cultural side of education. Science enables us to know the means to any chosen end, but it does not help us to decide upon what ends should be pursued. If you wish to exterminate the human race, it will show you how to do it. If you wish to make the human race so numerous that all are on the very verge of starvation, it will show you how to do that. If you wish to secure adequate prosperity for the whole human race, science will tell you what you must do. But it will not tell you whether one of these ends is more desirable than another. Nor will it give you that instinctive understanding of human beings that is necessary if your measures are not to arouse fierce opposition which only ferocious tyranny can quell. It cannot teach you patience, it cannot teach you sympathy, it cannot teach you a sense of human dignity. These things, insofar as they can be taught in formal education, are most likely to emerge from the learning of history and great literature.

Bertrand Russell

From: Fact and Fiction, 1960

Questions:

- (i) What should, according to the writer, be the aim of education?
 - (ii) What danger does the writer see in the present emphasis on imparting skill?
 - (iii) Why should we study history and great literature?
 - (iv) What is the distinction between 'knowledge' and 'wisdom'? Can the latter be imparted?
 - (v) Does the present system of our education take care of the viewpoints of Russell?
- Explain your view, giving two illustrative examples.

Contd P/4

HUM 111 (ARCH)

6. (a) As the Manager of a department store you have received from one of your customers a letter complaining incivility and inattention when he visited your store. Now, draft a reply expressing regret and promising full investigation. (10)
- (b) Give phonetic transcription of any five of the following words: (10)
- Busy, Uncle, Work, Sure, Bridge, Throw
7. (a) Write a dialogue between two students of your department about the possibility of Bangladesh becoming a middle income country by 2021. (10)
- (b) Write a short essay on any one of the following topics: (10)
- (i) Quantum computer: A Reality in Near Future
- (ii) Letter Writing: A Lost Art
- (iii) Your Favourite Author
8. (a) Transform the following sentences as directed: (Any five) (10)
- (i) We eat so that we may live. (Simple)
- (ii) Begum Rokeya hit the society for its injustice against women. (Compound)
- (iii) One should keep one's promises. (Complex)
- (iv) Decide whether you will sit for the test or not. (Simple)
- (v) Do this, lest a worse thing befall. (Compound)
- (vi) Industry will keep you from want. (Complex)
- (b) Write short notes on any two of the following: (10)
- (i) Index
- (ii) Qualities of a good précis
- (iii) Forwarding Letter
-

L-2/T-1/ARCH

Date : 07/01/2013

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-2/T-1 B. Arch. Examinations 2011-2012

Sub : **HUM 113** (Economics)

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) Mention the characteristics of a perfectly competitive market. Show graphically the 'super normal profit', 'abnormal loss' and 'normal profit' of a firm in a perfectly competitive market. (10 1/3)
- (b) What are the properties of monopoly market, monopolistic market, oligopoly market and monopsony market? (6)
- (c) Show graphically the 'profit' and 'loss' of a monopolist. (7)
2. (a) Derive 'average product' (AP) and 'marginal product' (MP) curves from 'total product' (TP) curve. Show the relationship among AP, MP and TP. (8 1/3)
- (b) Suppose, an arbitrary production equation of Google is (10)
$$TP = 90K^2 - K^3$$
Sketch a graph of total, average and marginal product curves of Google.
- (c) What is the impact of technological development on the production function? (5)
3. (a) Define Gross Domestic Product (GDP) and Gross National Product (GNP). (5)
- (b) Explain the 'value addition', 'income' and 'expenditure' methods to measure Gross Domestic Product (GDP). (12 1/3)
- (c) What are not counted in Gross Domestic Product (GDP)? (6)
4. (a) What do you mean by 'returns to scale'? Explain different types of 'returns to scale'. (6)
- (b) Define 'total cost' (TC), 'average cost' (AC) and 'marginal cost' (MC). Derive AC and MC curves from TC curve. Show the relationships among AC, MC and TC. (7 1/3)
- (c) Given total cost function: (10)
$$TC = 2Q^3 - 36Q^2 + 1500Q$$
Sketch the graphs of 'total cost' (TC), 'average cost' (AC) and 'marginal cost' (MC) curves. Then show the relationship among AC, MC and TC.

Contd P/2

HUM 113

SECTION - B

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

5. (a) Explain graphically the concepts of marginal utility and total utility. (7)
(b) Narrate the assumptions of the cardinal theory of consumer equilibrium. (3 1/3)
(c) Describe the cardinal theory of consumer equilibrium. (13)
6. (a) Discuss the factors that affect the demand for a commodity in general. (9)
(b) What is meant by market demand? Explain graphically. (5 1/3)
(c) (i) Calculate the equilibrium price and equilibrium quantity from the following demand and supply functions and show the result in a graph. (9)
- $QD_x = 4000 - 400P_x$
 $QS_x = -500 + 500P_x$
- (ii) If a per unit tax of Tk. 0.90 is imposed, how will it affect the equilibrium price and quantity?
(iii) If Government provides a subsidy of Tk. 2 per unit, what will happen to the equilibrium price and quantity?
7. (a) Illustrate how the supply of a commodity depends on the state of technology. (5 1/3)
(b) Define income elasticity of demand and write down its formula. "A commodity may be luxury at 'low' levels of income, a necessity at 'intermediate' levels of income and an inferior commodity at 'high' levels of income" - Explain the statement with suitable example. (10)
(c) What is meant by cross elasticity of demand? Write down the formula for cross elasticity of demand and give suitable example. (8)
8. (a) What are the assumptions of indifference curve analysis? (3 1/3)
(b) Explain the concepts of 'marginal rate of substitution' and 'budget line'. (10)
(c) Discuss the properties of indifference curve. (10)
-

L-2/T-1/ARCH

Date : 31/12/2012

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-2/T-1 B. Arch. Examinations 2011-2012

Sub : **CE 265** (Structure I : Mechanics)

Full Marks : 140

Time : 3 Hours

The figures in the margin indicate full marks.

USE SEPARATE SCRIPTS FOR EACH SECTION

Amr
31-12-12

SECTION - A

There are **NINE** questions in this section. Answer any **SEVEN**.

1. Determine the resultant of the concurrent force system as shown in Fig. 1. (10)
2. Three sphere A, B and C are arranged as shown in Fig. 2. Weight of sphere A is 500 lb and radius is 8 inch. Weight of sphere B is 2000 lb and radius is 12 inch and weight of sphere C is 1200 lb and radius is 10 inch. Calculate the surface reactions on sphere A from both vertical and horizontal walls. (10)
3. Determine the resultant force (magnitude, direction and point of application) acting on the beam of Fig. 3. (10)
4. A car B which weighs 30 kip is balanced by a weight A as shown in Fig. 4. What should be the weight A if there is no friction at any point? (10)
5. In the system of sheaves as shown in Fig. 5, what force F will hold a weight of 800 lb in equilibrium? What will be the tension in cables A, B and C? (10)
6. Calculate the member forces of the following member of the truss shown in Fig. 6. bc, bg, bh, hg. (10)
7. A parabolic cable carries a load of 200 lb per horizontal foot supporting at two ends 100 ft apart and one support is 20 ft higher than the other. The sag measured from the lower support is 8 ft. Determine the tension at the anchors. Also calculate the total length of the cable. (10)
8. A glass rod AB as shown in Fig. 7 weight 0.5 lb and is 6 inch long. It is placed in a glass tumbler C in a position of equilibrium. If the tumbler is 2.5 inch in diameter and if all the surfaces are smooth, what is the angle θ ? (10)
9. The beam AB is loaded as shown in Fig. 8. Equilibrium is maintained by the weight $W = 4000$ lb suspended from a pulley. What should be the diameter of the pulley? (10)

Contd P/2

CE 265

SECTION - B

There are **NINE** questions in this section. Answer any **SEVEN**.

10. An area is bounded by the parabola $x^2 = 8y$, y-axis and the line $y = 4$ (Fig. 9). Determine the centroid (\bar{x}, \bar{y}) of this area by integration. (10)
11. Determine the centroid of the area shown in Fig. 10. (10)
12. Calculate \bar{x} for the hemisphere shown in Fig. 11. (10)
13. For the shaded region in Fig. 12, compute the moment of inertia, I_x about x-axis. (10)
14. Compute the minimum radius of gyration (γ_{\min}) for the section in Fig. 13. (10)
15. For the block in Fig. 14, find the value of θ for impending motion upwards. Use $W = 100$ lb, friction co-efficient = 0.3. Also state whether the motion will be sliding or tripping. (10)
16. For the system in Fig. ¹⁵~~13~~, $W_A = 80$ lb, $W_B = 120$ lb, friction co-efficient for contact surface between A and B is 0.25 and for B and the floor is 0.33. Determine P to move the block B and also the tension in the cable. (10)
17. A wedge B is inserted between a fixed surface A and a movable block C which weighs $W_c = 5000$ lb, (see Fig. 16). For all slipping surfaces, let $f = \frac{1}{3}$. If there is a horizontal resistance acting on C of $R = 8000$ lb, what force Q will impose impending motion of C? (10)
18. A ladder AB with a load of $W = 500$ lb as shown in Fig. 17 is held in impending motion toward, the right by the horizontal force Q. If $f_A = 0.2$ and $f_B = 0.3$, what is the value of Q. (10)
-

= 3 =

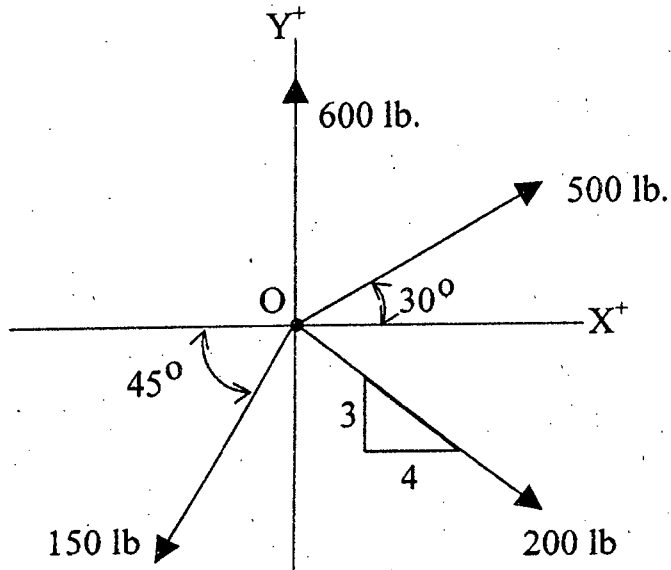


Fig. 1

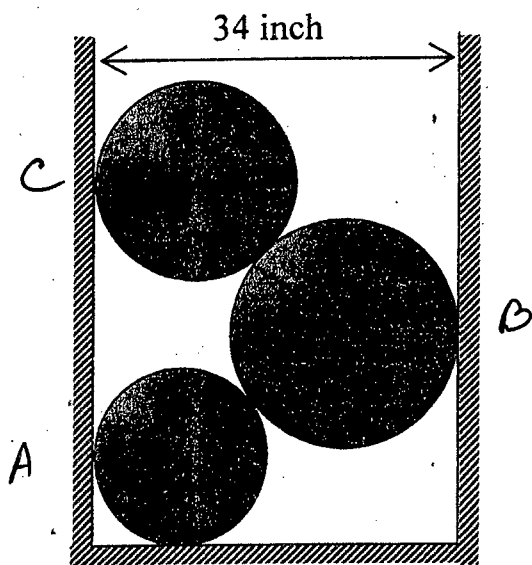


Fig. 2

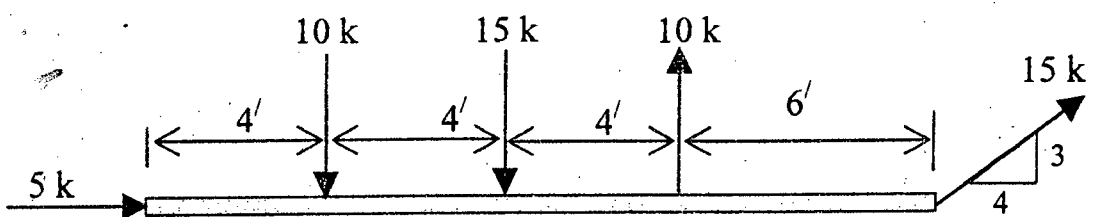


Fig. 3

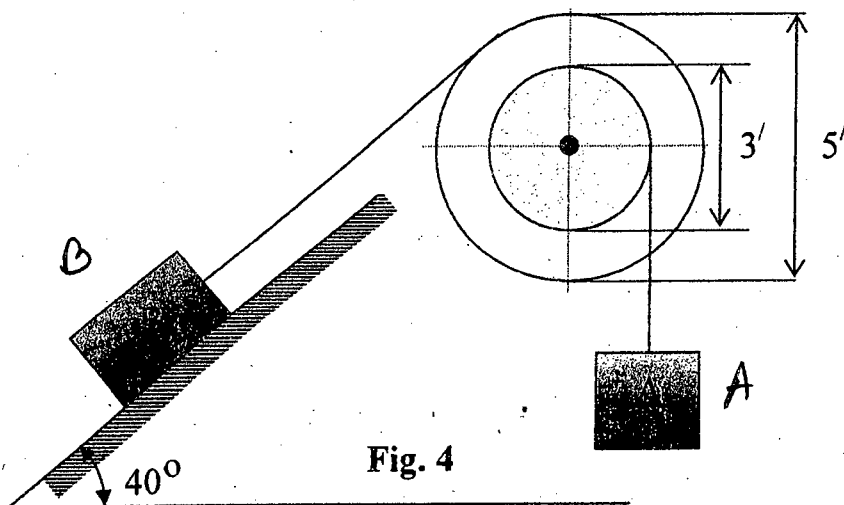


Fig. 4

= 4 =

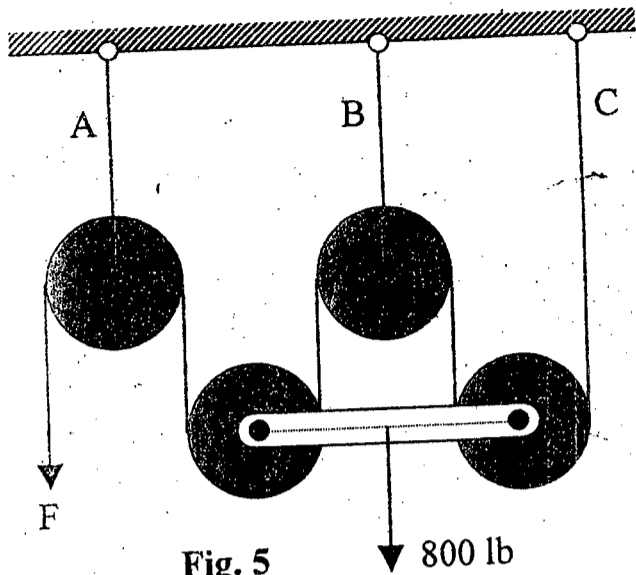


Fig. 5

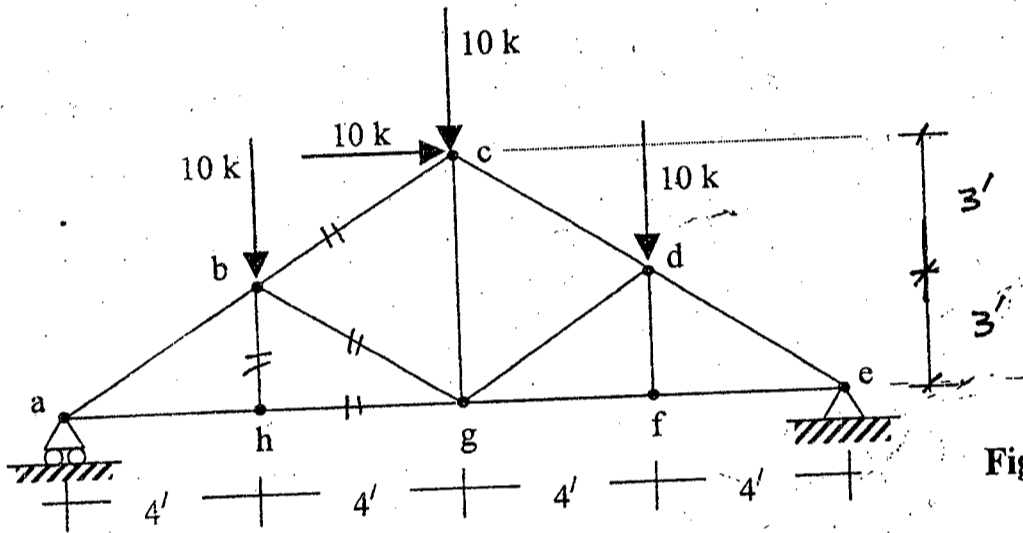


Fig. 6

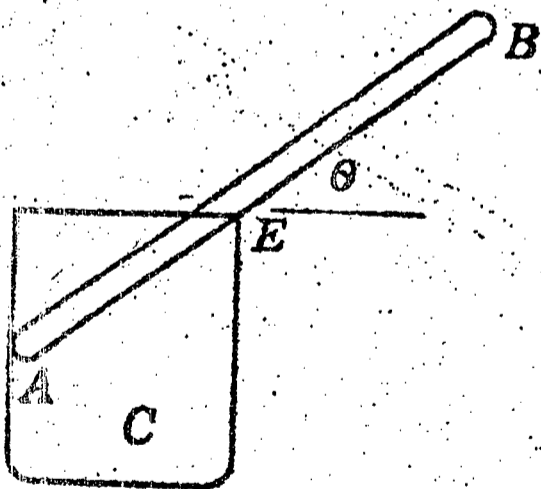


Fig-7

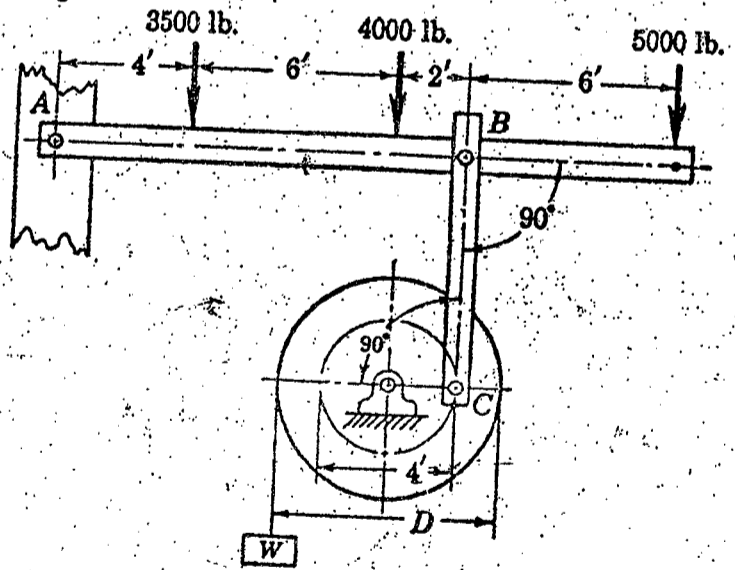


Fig. 8

Fig.: 9

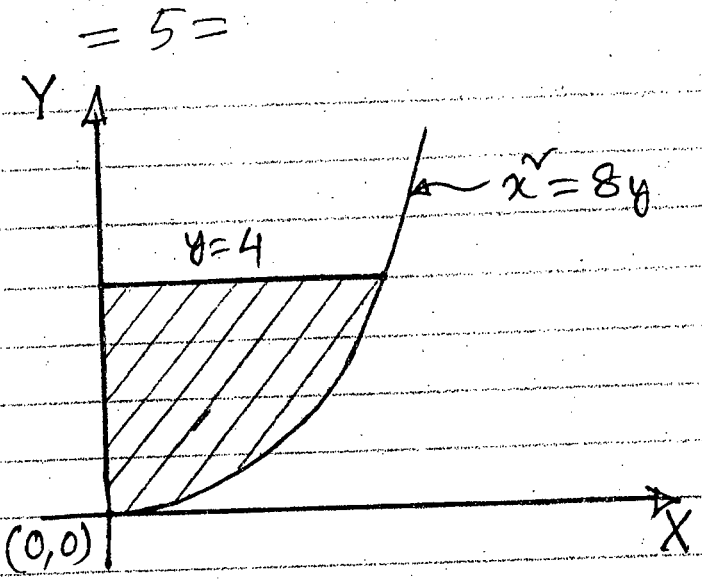


Fig.: 10

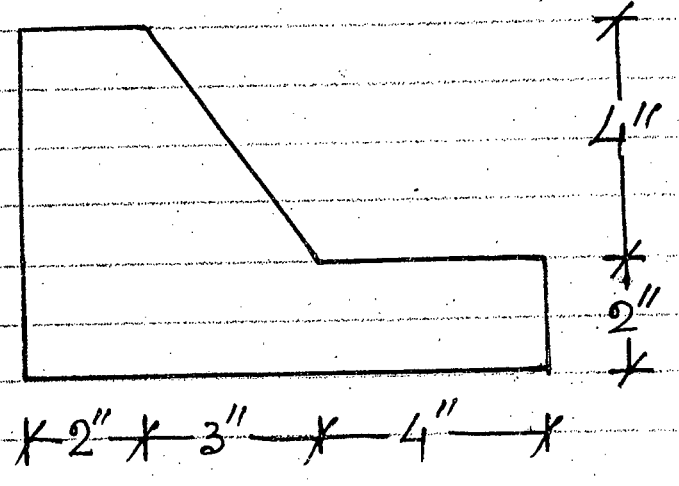


Fig.: 11

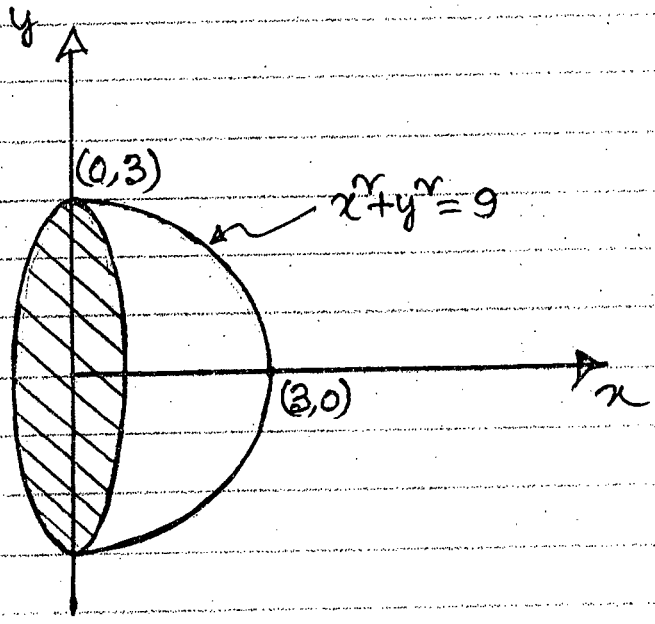
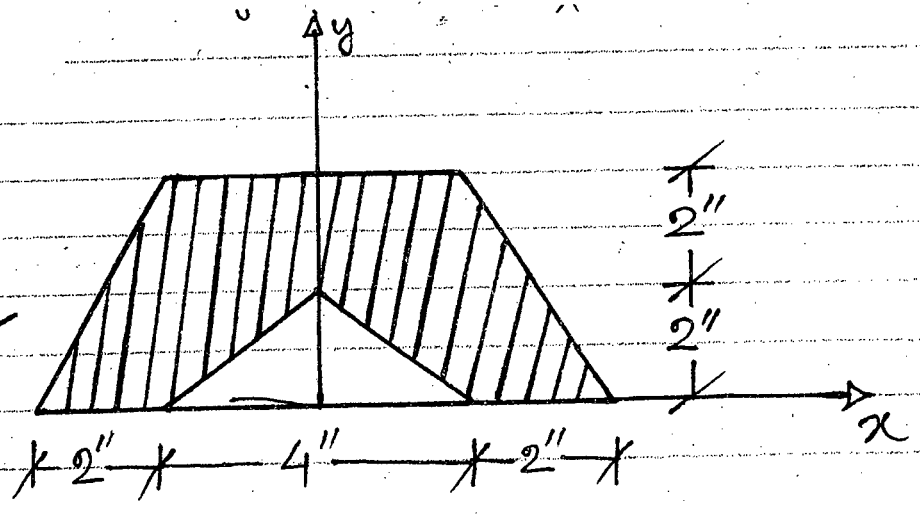


Fig.: 12



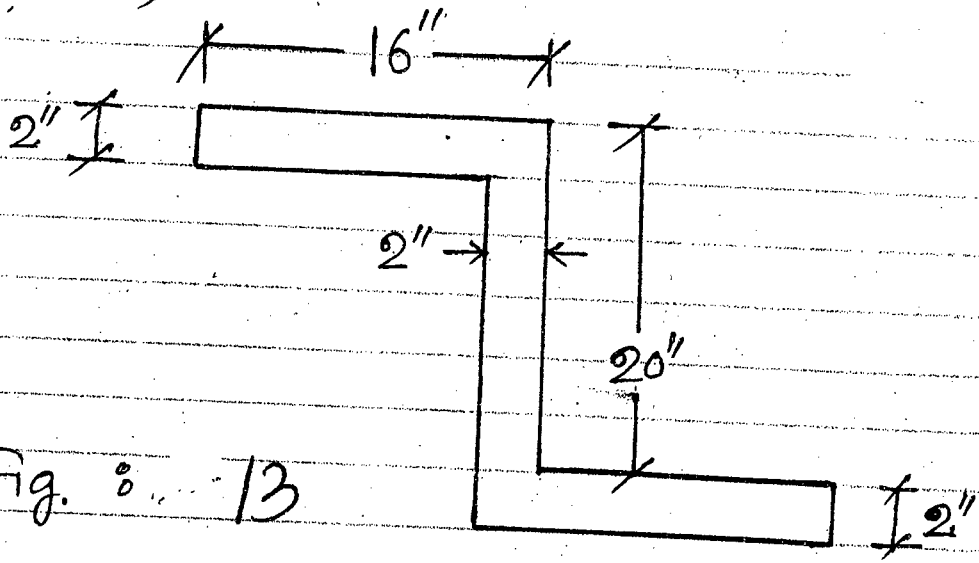


Fig. : 13

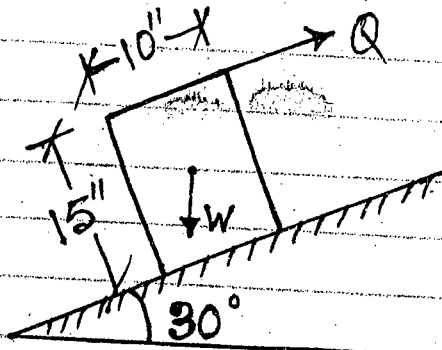


Fig. : 14

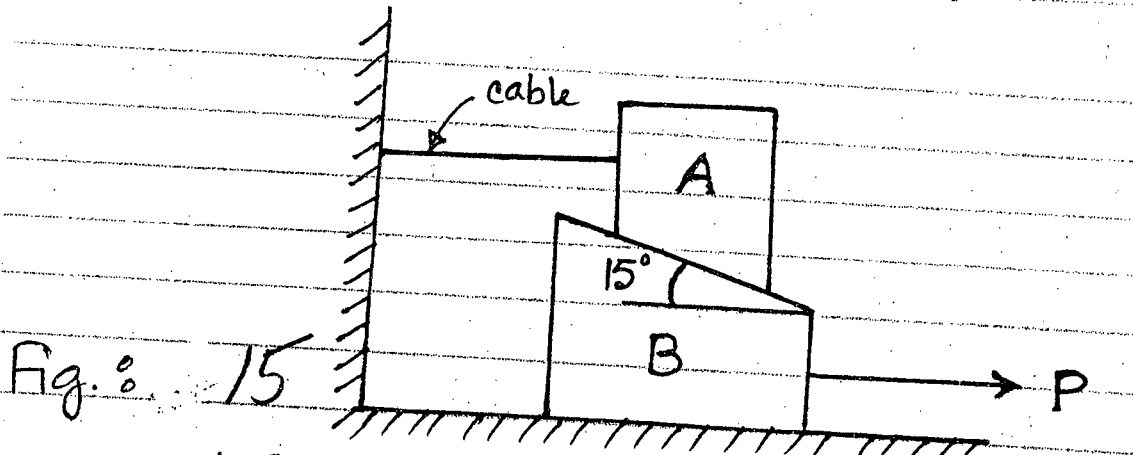


Fig. : 15

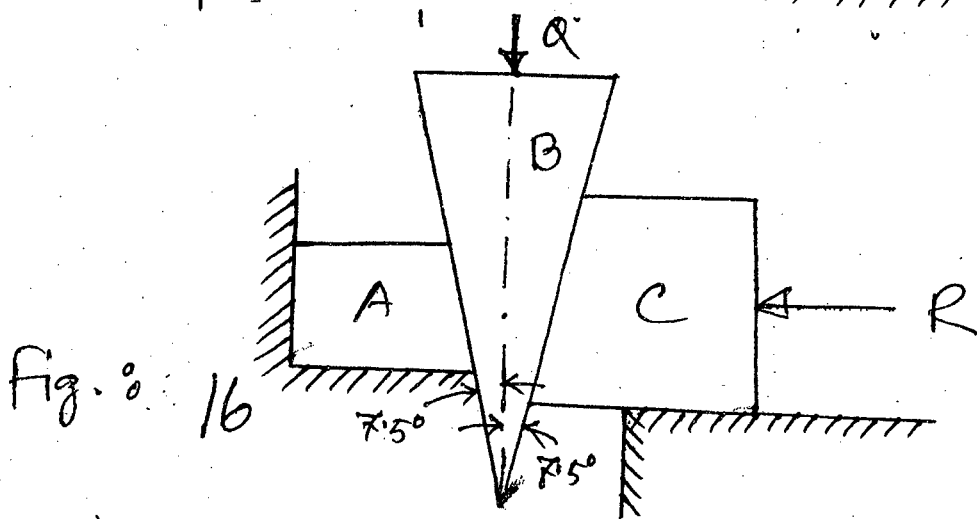


Fig. : 16

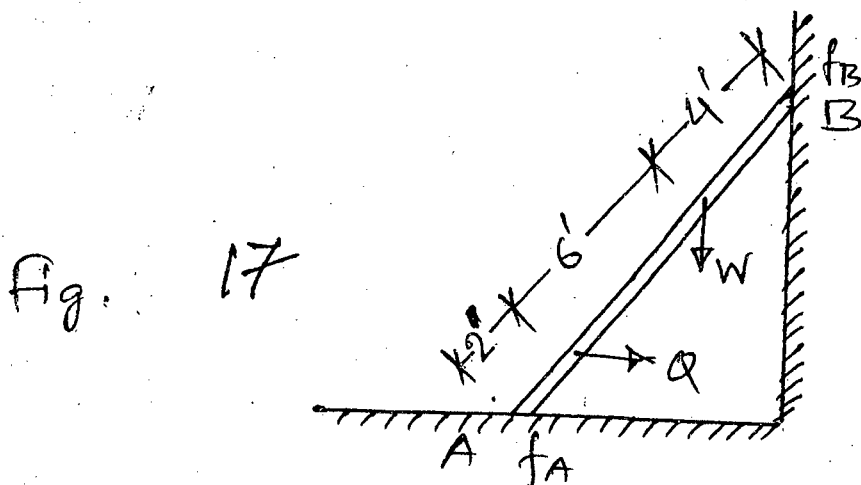


Fig. : 17

Morning

L-2/T-1/ARCH

Date : 31/12/2012

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-2/T-1 B. Arch. Examinations 2011-2012

Sub : **CE 265** (Structure I : Mechanics)

Full Marks : 140

Time : 3 Hours

The figures in the margin indicate full marks.

USE SEPARATE SCRIPTS FOR EACH SECTION

*Checked
Araf*

SECTION - A

There are **NINE** questions in this section. Answer any **SEVEN**.

1. Determine the resultant of the concurrent force system as shown in Fig. 1. (10)
2. Three sphere A, B and C are arranged as shown in Fig. 2. Weight of sphere A is 500 lb and radius is 8 inch. Weight of sphere B is 2000 lb and radius is 12 inch and weight of sphere C is 1200 lb and radius is 10 inch. Calculate the surface reactions on sphere A from both vertical and horizontal walls. (10)
3. Determine the resultant force (magnitude, direction and point of application) acting on the beam of Fig. 3. (10)
4. A car B which weighs 30 kip is balanced by a weight A as shown in Fig. 4. What should be the weight A if there is no friction at any point? (10)
5. In the system of sheaves as shown in Fig. 5, what force F will hold a weight of 800 lb in equilibrium? What will be the tension in cables A, B and C? (10)
6. Calculate the member forces of the following member of the truss shown in Fig. 6. bc, bg, bh, hg. (10)
7. A parabolic cable carries a load of 200 lb per horizontal foot supporting at two ends 100 ft apart and one support is 20 ft higher than the other. The sag measured from the lower support is 8 ft. Determine the tension at the anchors. Also calculate the total length of the cable. (10)
8. A glass rod AB as shown in Fig. 7 weight 0.5 lb and is 6 inch long. It is placed in a glass tumbler C in a position of equilibrium. If the tumbler is 2.5 inch in diameter and if all the surfaces are smooth, what is the angle θ ? (10)
9. The beam AB is loaded as shown in Fig. 8. Equilibrium is maintained by the weight $W = 4000$ lb suspended from a pulley. What should be the diameter of the pulley? (10)

Contd P/2

= 2 =

CE 265

SECTION - B

There are **NINE** questions in this section. Answer any **SEVEN**.

10. An area is bounded by the parabola $x^2 = 8y$, y-axis and the line $y = 4$ (Fig. 9). Determine the centroid (\bar{x}, \bar{y}) of this area by integration. (10)

11. Determine the centroid of the area shown in Fig. 10. ✓ (10)

12. Calculate \bar{x} for the hemisphere shown in Fig. 11. ✓ (10)

13. For the shaded region in Fig. 12, compute the moment of inertia, I_x about x-axis. (10)

CE 265

14. Compute the minimum radius of gyration (y_{min}) for the section in Fig. 13. **(10)**

15. For the block in Fig. 14, find the value of θ for impending motion upwards. Use $W = 100$ lb, friction co-efficient = 0.3. Also state whether the motion will be sliding or tripping. **(10)**

16. For the system in Fig. 13, $W_A = 80$ lb, $W_B = 120$ lb, friction co-efficient for contact surface between A and B is 0.25 and for B and the floor is 0.33. Determine P to move the block B and also the tension in the cable. **(10)**

17. A wedge B is inserted between a fixed surface A and a movable block C which weighs $W_c = 5000$ lb, (see Fig. 16). For all slipping surfaces, let $f = \frac{1}{3}$. If there is a horizontal resistance acting on C of $R = 8000$ lb, what force Q will impose impending motion of C? **(10)**

= 4 =

CE 265

18. A ladder AB with a load of $W = 500$ lb as shown in Fig. 17 is held in impending motion toward, the right by the horizontal force Q . If $f_A = 0.2$ and $f_B = 0.3$, what is the value of Q .

(10)

F. 116
14.01.13

L-2/T-1/ARCH

Date: 19/11/2012

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-2/T-1 B. Arch. Examinations 2011-2012

Sub : **ARCH 231** (Environmental Design II : Visual and Sonic Environment)

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. Answer the following questions: (3×6=18)
 - (a) When the vector-scalar ratio is 2, for an illumination vector value of 200 lux, what is the scalar illumination value?
 - (b) Express the relationships of the various factors that affect glare through a formula.
 - (c) What is the contrast between the walls of a space having reflection factors of 0.6 and 0.3?
 - (d) Write an equation relating the reflection factor of a surface and its value on the Munsell Scale.
 - (e) For a visual task that requires 300 lux what should be the Daylight Factor in a space, under Dhaka's Design Sky Illumination Level?
 - (f) What should be the reflection coefficient of a window that absorbs 8% of incident light, but requires to transmit 80%?

2.
 - (a) Discuss the various components of the visual field. (6)
 - (b) What are the key External Visual Factors and how are they related? Discuss in details. (20)

3.
 - (a) Explain the use of the BRE Protractors in determining SC and ERC of DF for a space. (16)
 - (b) Differentiate between the lighting conditions of a clear blue sky and a CIE sky. (10)

4.
 - (a) What is Supplementary Lighting? Discuss its benefits, uses and characteristics. (16)
 - (b) Briefly discuss the major architectural features for promoting daylight penetration into interiors. (10)

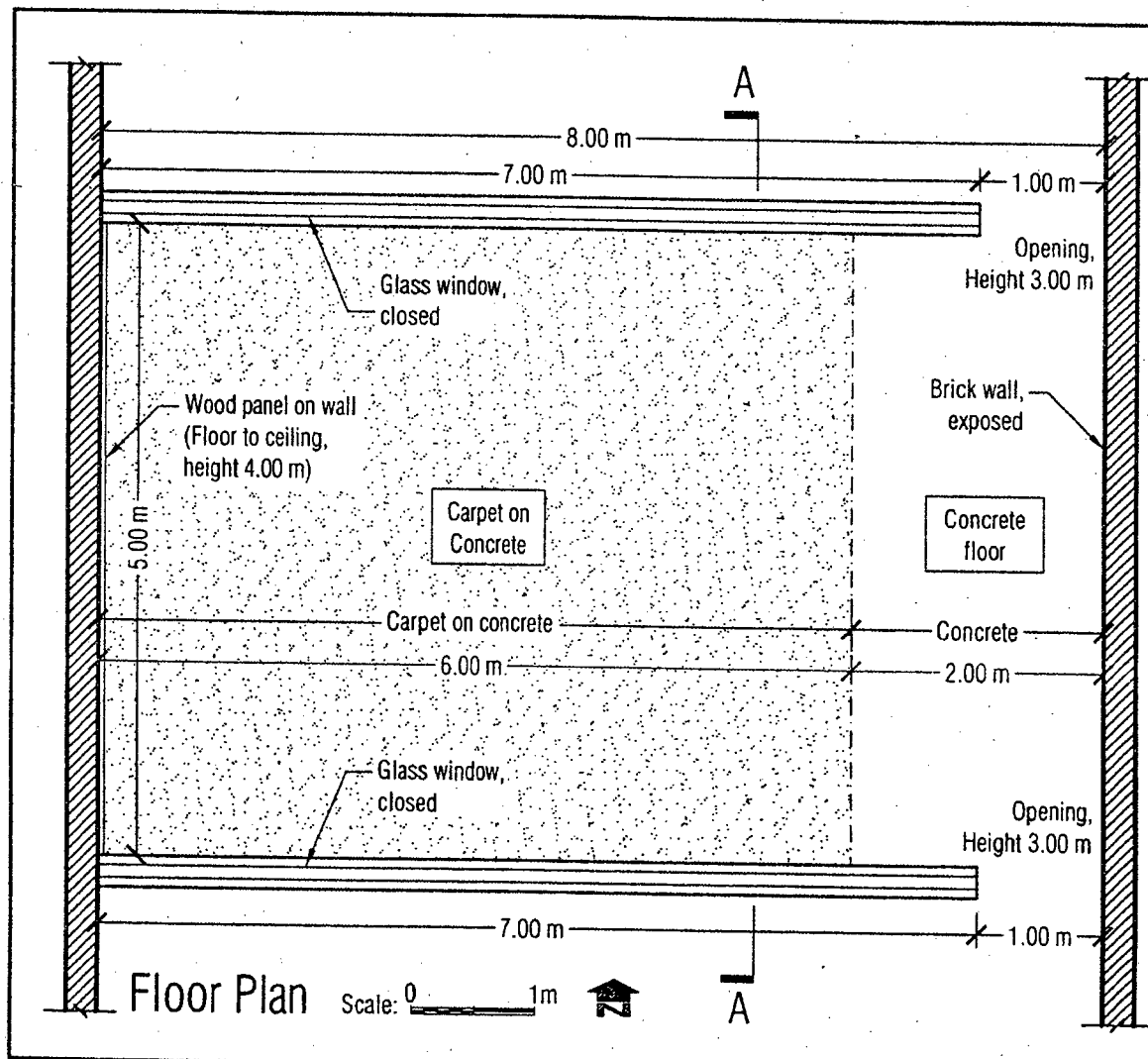
Contd P/2

ARCH 231

SECTION - B

There are **FIVE** questions in this Section. Answer Q. No. 5 and any **THREE** from the rest.

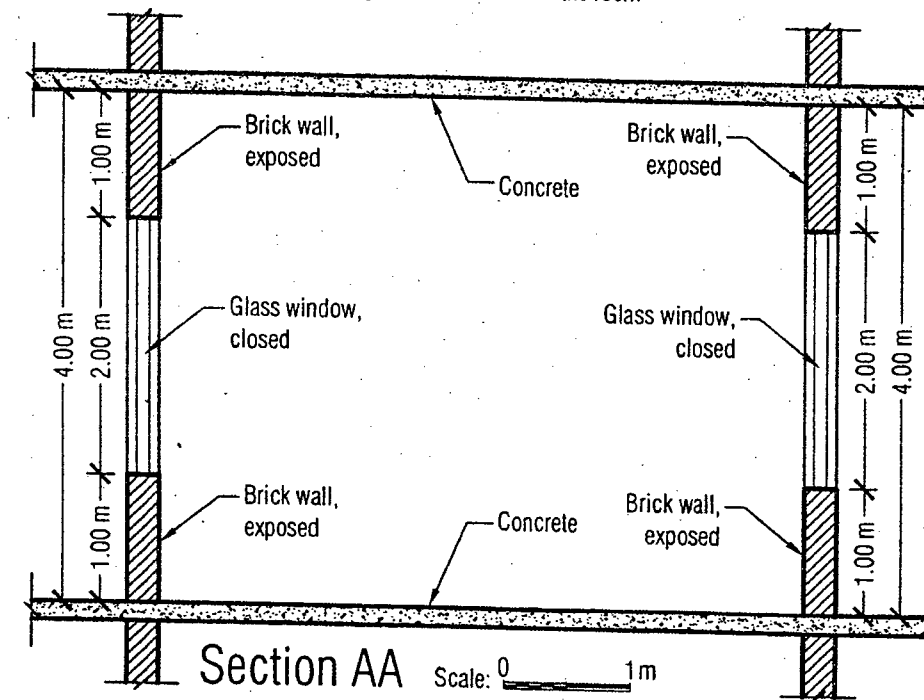
5. (a) Write short notes on the following (any THREE) (4×3=12)
(i) Sound (ii) Noise (iii) Acoustics (iv) Reverberation Time
- (b) Calculate the Reverberation Time (RT) at 500 Hz for the room shown in Fig. 1. (10)
6. (a) In an enclosed space, how does sound behave in terms of absorption, reflection and diffusion? (4×3=12)
(b) Explain the statement: "Architectural means should ensure acoustic performance of a space, while electro-acoustics would only supplement". (4)
7. (a) What are the effects of diffraction, refraction and transmission of sound in a space? (4×3=12)
(b) What is Sound Transmission Class (STC)? (4)
8. (a) Elaborate the following singular phenomena: (4×3=12)
(i) Echo (ii) Colouration (iii) Whispering Gallery (4)
(b) How a flatter echo is created in a space?
9. (a) Describe with figures how noise transmission can be controlled through air-condition duct. (6)
(b) What are the general requirements for acoustic design? Provide examples of recommended RT in spaces for speech and music. (3+3=6)
(c) In schematic plans, show examples of 'poor' and 'good' acoustic treatments for a space of circular plan. (4)
-



Materials	Absorption Coefficient		
	250 Hz	500 Hz	1 kHz
1 Concrete	0.01	0.02	0.02
2 Carpet on concrete	0.06	0.14	0.37
3 Glass	0.25	0.18	0.12
4 Wood panel on wall	0.25	0.20	0.17
5 Brick, exposed	0.03	0.03	0.04

Note: Ignore absorption by the volume of air in the room

Fig. 1



Sushant
7/1/2013

L-2/T-1/ARCH

Date : 07/01/2013

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-2/T-1 B. Arch. Examinations 2011-2012

Sub : **ARCH 265** (Building Technology)

Full Marks : 140

Time : 3 Hours

The figures in the margin indicate full marks.

USE SEPARATE SCRIPTS FOR EACH SECTION

SECTION – A

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

1. Write short notes on any four:

(7×4=28)

- (a) Types of stones
- (b) Stone Masonry Types
- (c) Mechanical Properties of Metal
- (d) Noble Metal
- (e) Metal Alloys and use of Metal.

2. What are the modular co-ordination design rules? Show with sketches the graphic conventions of modular co-ordination.

(14)

3. What is a Geodesic dome? Why Backminister Fuller's Geodesic dome is different from Baversfeld's dome. What are the characteristics of a space frame dome?

(14)

4. What are dome homes? What are the disadvantage of dome homes? Name some large dome structures of the world.

(14)

5. What is a tensile structure? Sketch the Olympic Stadium in Munich and show how tensile structures are used here. Show the example of linear and three dimensional structures with tension members.

(14)

SECTION – B

There are **FIVE** questions in this section. Answer **Q. 6** and any **THREE** from the rest.

6. Write short notes on the followings (Any Four):

(7×4=28)

- (a) Recycling of plastics
- (b) Synthetic Rubber
- (c) Latex
- (d) Thermoplastics and thermosetting plastics
- (e) Uses of Rubber.

Contd P/2

ARCH 265

7. What are indigenous materials? Why should we use indigenous materials? What are the advantages and disadvantages of indigenous materials? (14)
 8. Explain the structural principle of space frame. Why it is important in long span structure? Name and sketch a real life successful space frame project. (14)
 9. What is a truss? Sketch Bowstring truss, King post truss and lenticular truss. What are the advantages of truss in longspan structure? (14)
 10. What is a Folded plate? Show with neat sketches how the strength of a folded plate increases. How it can contribute in low cost structures. (14)
-

SECTION - A

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

1. (a) Define brick masonry. (5) 15
 (b) Describe the important rules for brick bonding. (20)
2. (a) What is pile foundation? (5)
 (b) Discuss with sketches the following types of pile foundation: (20)
 (i) Bearing pile
 (ii) Friction pile
 (iii) Battered pile
 (iv) Sheet pile
 (v) Compaction pile
3. (a) What is brick bond? (5)
 (b) Describe and draw the elevation of the following brick bonds: (20)
 (i) English bond
 (ii) Flemish bond
 (iii) Stack bond
 (iv) Flemish garden wall bond
 (v) Silver lock bond
4. (a) Write the significance of pointing. (5)
 (b) Draw and describe the following types of joints: (15)
 (i) Flush joint (ii) Weather joint (iii) Recessed joint
 (iv) Concave joint (v) Projecting joint
 (c) Which joint is suitable for the weather of Bangladesh? – Discuss. (5)

ARCH 261

SECTION – B

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

5. (a) Draw an axonometric view to show 3 different kinds of windows and 1 exterior door on the south façade of a building (2 storey). Justify your selection and placement of these building components. (24)
- (b) What kind of door should be used for a patient's cabin in a hospital? Give reasons with necessary illustrations. (6)
6. (a) Draw plans of four different kinds of stairs. (6)
- (b) Draw a detailed section of a stair and show the different technical terms used in it. (14)
7. (a) State four important issues to be considered in the elevator selection process. (6)
- (b) Draw a sectional perspective of a traction elevator (Geared) showing different parts of its functioning system. (14)
8. (a) Draw the plan, elevation and section to convey the profile of an escalator. (10)
- (b) Draw a detailed plan and section of a residential toilet. Show the fixtures and dimensions. (10)
-

D. Pitah

L-2/T-1/URP

Date : 17/12/2012

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-2/T-1 BURP Examinations 2011-2012

Sub : **PLAN 291** (Statistics for Planners I)

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) Define nominal, ordinal and interval level of measurement with two examples each. (9)
- (b) Write the name of three most commonly used frequency diagrams. (3)
- (c) Explain independent and dependant variable with an example. (3)
- (d) The daily minimum temperature recorded in a weather reporting station is given below for 100 days in °F. Construct a frequency distribution table using a class interval 5 °F. Show the distribution by a Histogram and Cumulative frequency curve and from that find in how many days that minimum temperature was: (20)
 - (i) 35 °F or higher
 - (ii) Below 45 °F
 - (iii) 65 °F and above but less than 75 °F

Data

43	41	45	47	42	38	44	48	68	45	70	30	43	42	39
58	62	50	55	60	63	55	63	58	59	61	63	54	52	59
63	51	52	31	54	54	55	41	51	54	55	60	62	61	64
63	51	37	31	36	54	49	41	54	38	40	43	42	48	50
45	48	47	47	49	58	55	39	42	47	48	42	45	49	50
74	31	51	52	51	48	51	59	58	60	49	50	56	52	55
47	50	56	52	55	32	33	51	50	57					

2. (a) If the skewness of data is significantly pronounced, explain why the "mean" would not be an appropriate measure to describe the central tendency of data. (3)
- (b) The mean of marks in statistics of 100 students of a class was 72. The mean of marks of boys was 75. There were 70 boys in the class. Find out the mean of marks obtained by the girls in the class. (12)
- (c) Following table 1 provides data on monthly income and age of sample of household head of two neighbourhoods of Dhaka. (14+6)

PLAN 291

Contd ... Q. No. 2(c)

Table 1

Dhanmondi		Shajahanpur	
Mean income	Tk. 75,000	Mean income	Tk. 45,000
Standard deviation of income	Tk. 7500	Standard deviation of income	Tk. 4500
Mean age of household head	50 years	Mean age of household head	48 years
Standard deviation of age of household head	10 years	Standard deviation of age of household head	16 years

(i) Compare the relative dispersion of income and age of sample household heads drawn from the two neighbourhoods.

(ii) Interpret the result.

3. (a) Two hundred students of class eight were enrolled in a math competition program. To test their math knowledge, every one was asked to answer 35 questions. The maximum number of correct answers by each student has been recorded and organized into the following frequency distribution:

(20)

No of correct answer	No of student
0 – 4	10
5 – 9	37
10 – 14	50
15 – 19	68
20 – 24	30
25 – 29	5

Find the following:

- (i) Determine the range
- (ii) The Variance
- (iii) The standard deviation
- (iv) Interquartile range and quartile deviation. Interpret them

(b) The mean age of workers in a industry is 24. Their median of age is 19 and mode is 16. Determine the coefficient of skewness for the distribution of ages if the calculated standard deviation is 5. Explain your finding and nature of the distribution of the age of workers.

(15)

= 3 =

PLAN 291

4. (a) The following data shows distribution of marks of English examination obtained by 100 students.

Marks in Examination	Frequency
60 – 62	5
63 – 65	18
66 – 68	42
69 – 71	27
72 – 74	8

- (i) Calculate the first four moments about the mean for the distribution. (14)
- (ii) Find the moment coefficient of skewness and interpret the finding. (7)
- (iii) Explain the above distribution in terms of peakedness. (8)
- (b) What terms are used to denote low and high value of Kurtosis? (2)
- (c) How skewness and Kurtosis values lead to further investigation in a research work? (4)

SECTION – B

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

5. (a) A recent study randomly selected 335 persons who have migrated to Dhaka during the last five years. The table below shows the distribution of the migrants by original location (from where they migrated) and the purposes of migration.

Purpose of migration	Original Location		Total
	Other Urban Areas	Rural Areas	
Job	200	100	300
Higher Studies	25	10	35
Total	225	110	335

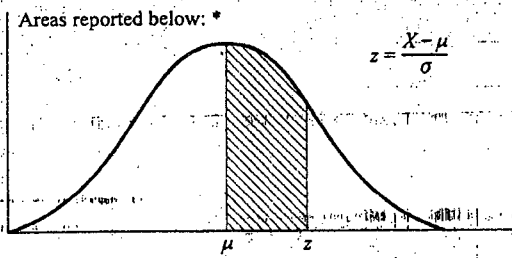
If a person is selected randomly, what is the probability that the person –

- (i) migrated from other urban areas? (7)
- (ii) migrated to Dhaka for higher studies? (7)
- (iii) migrated from other urban area or his purpose of migration was higher studies? (7)
- (iv) migrated from rural area and his purpose of migration was doing job in the city? (7)
- (v) migrated from other urban area given that his purpose was to do higher studies? (7)

PLAN 291

6. (a) Forty percent of the residents of a neighbourhood in Dhaka are opposed to the widening of a road that runs through the neighbourhood. In a random sample of ten residents, what is the probability that the number opposed to the widening is exactly five? (17 1/2)
- (b) The mean number of accidents in a factory is 0.20 per week. What is the probability that in a particular week there is no accident? (17 1/2)
7. (a) Assume that yearly incomes of rickshawpullers in a city are normally distributed with a mean (μ) of Tk. 77,685/- and standard deviation (σ) of Tk. 13,751/-. What percentage of rickshawpullers in the city –
- (a) earns more than Tk. 100,000 in a year? (10)
- (b) earns less than Tk. 60,000 in a year? (10)
- (c) earns between Tk. 75000 and 95,000 in a year? (15)
8. (a) From a random sample of 60 buses, BRTA calculated the mean number of passengers per kilometer to be 4.1 and standard deviation to be 1.2 passengers per kilometer. Construct a 95 percent confidence interval for the mean number of passengers per kilometer for the population. (17 1/2)
- (b) A simple random sample of 800 units generates a sample proportion $P = 0.70$. Provide a 99% confidence interval for the population proportion. (17 1/2)

+ Two Annexure



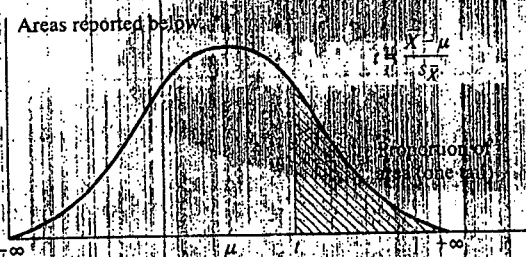
Proportions of Area for the Standard Normal Distribution

z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	.0000	.0040	.0080	.0120	.0160	.0199	.0239	.0279	.0319	.0359
0.1	.0398	.0438	.0478	.0517	.0557	.0596	.0636	.0675	.0714	.0753
0.2	.0793	.0832	.0871	.0910	.0948	.0987	.1026	.1064	.1103	.1141
0.3	.1179	.1217	.1255	.1293	.1331	.1368	.1406	.1443	.1480	.1517
0.4	.1554	.1591	.1628	.1664	.1700	.1736	.1772	.1808	.1844	.1879
0.5	.1915	.1950	.1985	.2019	.2054	.2088	.2123	.2157	.2190	.2224
0.6	.2257	.2291	.2324	.2357	.2389	.2422	.2454	.2486	.2518	.2549
0.7	.2580	.2612	.2642	.2673	.2704	.2734	.2764	.2794	.2823	.2852
0.8	.2881	.2910	.2939	.2967	.2995	.3023	.3051	.3078	.3106	.3133
0.9	.3159	.3186	.3212	.3238	.3264	.3289	.3315	.3340	.3365	.3389
1.0	.3413	.3438	.3461	.3485	.3508	.3531	.3554	.3577	.3599	.3621
1.1	.3643	.3665	.3686	.3708	.3729	.3749	.3770	.3790	.3810	.3830
1.2	.3849	.3869	.3888	.3907	.3925	.3944	.3962	.3980	.3997	.4014
1.3	.4032	.4049	.4066	.4082	.4099	.4115	.4131	.4147	.4162	.4177
1.4	.4192	.4207	.4222	.4236	.4251	.4265	.4279	.4292	.4306	.4319
1.5	.4332	.4345	.4357	.4370	.4382	.4394	.4406	.4418	.4429	.4441
1.6	.4452	.4463	.4474	.4484	.4495	.4505	.4515	.4525	.4535	.4545
1.7	.4554	.4564	.4573	.4582	.4591	.4599	.4608	.4616	.4625	.4633
1.8	.4641	.4649	.4656	.4664	.4671	.4678	.4686	.4693	.4699	.4706
1.9	.4713	.4719	.4726	.4732	.4738	.4744	.4750	.4756	.4761	.4767
2.0	.4772	.4778	.4783	.4788	.4793	.4798	.4803	.4808	.4812	.4817
2.1	.4821	.4826	.4830	.4834	.4838	.4842	.4846	.4850	.4854	.4857
2.2	.4861	.4864	.4868	.4871	.4875	.4878	.4881	.4884	.4887	.4890
2.3	.4893	.4896	.4898	.4901	.4904	.4906	.4909	.4911	.4913	.4916
2.4	.4918	.4920	.4922	.4925	.4927	.4929	.4931	.4932	.4934	.4936
2.5	.4938	.4940	.4941	.4943	.4945	.4946	.4948	.4949	.4951	.4952
2.6	.4953	.4955	.4956	.4957	.4959	.4960	.4961	.4962	.4963	.4964
2.7	.4965	.4966	.4967	.4968	.4969	.4970	.4971	.4972	.4973	.4974
2.8	.4974	.4975	.4976	.4977	.4977	.4978	.4979	.4979	.4980	.4981
2.9	.4981	.4982	.4983	.4983	.4984	.4984	.4985	.4985	.4986	.4986
3.0	.4987									
3.5	.4997									
4.0	.4999									

*Example: For $z = 1.96$, shaded area is 0.4750 out of the total area of 1.0000.

APPENDIX 5

Student's *t* Distribution



Proportions of Area for the *t* Distributions

	0.05	0.025	0.01	0.005	<i>df</i>	0.10	0.05	0.025	0.01	0.005
18	1.730	1.784	2.101	2.378	18	1.730	1.784	2.101	2.378	2.378
19	1.728	1.782	2.093	2.361	19	1.728	1.782	2.093	2.361	2.361
20	1.725	1.779	2.086	2.345	20	1.725	1.779	2.086	2.345	2.345
21	1.723	1.777	2.080	2.331	21	1.723	1.777	2.080	2.331	2.331
22	1.721	1.775	2.074	2.319	22	1.721	1.775	2.074	2.319	2.319
23	1.719	1.773	2.069	2.307	23	1.719	1.773	2.069	2.307	2.307
24	1.718	1.772	2.064	2.297	24	1.718	1.772	2.064	2.297	2.297
25	1.716	1.771	2.060	2.287	25	1.716	1.771	2.060	2.287	2.287
26	1.715	1.770	2.056	2.279	26	1.715	1.770	2.056	2.279	2.279
27	1.714	1.769	2.052	2.271	27	1.714	1.769	2.052	2.271	2.271
28	1.713	1.768	2.048	2.263	28	1.713	1.768	2.048	2.263	2.263
29	1.711	1.767	2.045	2.256	29	1.711	1.767	2.045	2.256	2.256
30	1.710	1.766	2.042	2.250	30	1.710	1.766	2.042	2.250	2.250
40	1.703	1.764	2.021	2.204	40	1.703	1.764	2.021	2.204	2.204
60	1.700	1.761	2.000	2.160	60	1.700	1.761	2.000	2.160	2.160
120	1.689	1.758	1.980	2.117	120	1.689	1.758	1.980	2.117	2.117
∞	1.682	1.756	1.960	2.076	∞	1.682	1.756	1.960	2.076	2.076

The shaded area to represent 0.05 of the total area of 1.0, value of *t* with 10 degrees of freedom is 1.812. This is taken from Table III of Fisher and Yates, *Statistical Tables for Biological, Agricultural and Medical Research*, 6th ed., 1974, published by Chapman & Hall, London (previously published by Oliver & Boyd, Edinburgh), by permission of the authors.

Diploma

L-2/T-1/URP

Date : 24/12/2012

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-2/T-1 B. Sc. Engineering Examinations 2011-2012

Sub : **PLAN 211** (Urban Planning Principles)

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) What do you mean by urban planning? What are the main objectives of urban planning? (10)
(b) Explain the major land use components of a town. (15)
(c) What are the major types of land use in town centre? Draw the different types of plan of town centre design. (10)
2. (a) What are the functions of town centres? (10)
(b) Discuss the different design criteria of town centres. (15)
(c) Explain the two alternative ideas for the shape of town centres. (10)
3. (a) "Open spaces are considered as the lungs of the cities" – Explain. (5)
(b) Write down the classification of open space. Briefly describe all types of open space. (15)
(c) Illustrate the space requirement, size and distribution of different types of open space. (15)
4. (a) Write down the concept of neighborhood planning. (10)
(b) Discuss the characteristic of a residential neighborhood. (10)
(c) Explain the size and density standards for planning a residential neighborhood. (15)

SECTION – B

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

5. (a) Kevin Lynch has proposed a theory for "Good City Form". What are the dimensions of a good city form? (9)
(b) Ecological value of land use stem from various conceptions of the role of the natural environment in human affairs. Briefly discuss those concepts. (9)
(c) Explain how "multiple nuclei" theory differs from "concentric zone" theory. (17)

Contd P/2

PLAN 211

6. (a) Discuss the appropriate intervention method and management tools for conservation of heritage site. Illustrate your answer in reference to conservation approach in old Dhaka. (20)
- (b) Briefly discuss the "Transfrontier Responsibility" concept of sustainable development and explain how over exploitation of resources of rich countries are distorting regional economies and eco-system. (15)
7. (a) Distinguish between the terms "Urban Growth" and "Urbanization Level". (5)
- (b) As a developing country in Asia, the pace of urbanization in Bangladesh is fast. Explain how its urbanization trend differs from "first world" countries. (16)
- (c) Briefly discuss the major consequences of unplanned expansion of urban areas in Bangladesh. (14)
8. (a) What are the different types of commercial centers. (8)
- (b) Briefly discuss the stages involved in the process of planning of shopping centers. (17)
- (c) Write short notes on: (10)
- (i) Restoration
 - (ii) Adaptive reuse
-

Shamim ara
17.12.2012

L-2/T-1/ARCH

Date : 17/12/2012

BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-2/T-1 B. Arch. Examinations 2011-2012

Sub : **PLAN 219** (Basic Planning)

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) Write down the sequential steps of a planning process. (12)
(b) What are the differences between inter and intra regional planning? (6)
(c) What is planning? Explain with example. (5 1/3)
2. (a) Discuss the criticisms of the three models of spatial structures of cities. (9)
(b) Describe about the main components of Multiple Nuclei Theory with necessary diagram. (14 1/3)
3. (a) Why is it necessary to consider the society and environment during a spatial planning? (12)
(b) What is physical and economic planning? Explain with necessary example. (8)
(c) How does the pattern of land uses can influence the urban landscape? (3 1/3)
4. (a) "Planning is a process which helps to balance between the unlimited requirements of people and the available limited resources" – discuss. (15)
(b) How can a planner determine the appropriate location of different facilities in a plan? (4 1/3)
(c) Name the elements of a plan. (4)

SECTION – B

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

5. (a) Give three examples of principal town development during Cretan civilization (3000 B.C. to 1200 B.C.). (12)
(b) Distinguish between the various characteristics of Nile Valley and Indus Valley civilization. (11 1/3)

Contd P/2

PLAN 219

6. (a) Describe the functions of Acropolis and Agora according to Classic period city design. (10)
- (b) What are the ~~function~~^{functions} of a city as an Economic Center? Differentiate between urban and rural settlement. (3+3=6)
- (c) Discuss about World's first cities with the starting of Ancient period around 3500 B.C. (7 1/3)
7. (a) How the land economy is transformed to money economy in neo-classic period? (7)
- (b) What were the basic differences between the ruling period of King Hammurabi and Nebuchadnezzar during Babylonian civilization? (8)
- (c) Elaborate the town plan of the mediaval period and their dwellings. (8 1/3)
8. (a) Describe the trend of changes in city growth, form and character after Industrial revolution. (13 1/3)
- (b) What do you know about the origin and evolution of settlement and cities? (10)
-