

**SECTION – A**

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

1. Discuss briefly any **Three** of the following: **(3×10=30)**
  - (a) Byzantine Dome Construction
  - (b) Climatic influence on Romanesque architecture.
  - (c) Basilican Church layout
  - (d) Palladian Motif
2. (a) Describe the architectural characteristics of the Romanesque Period using proper sketches and examples. **(10)**  
(b) Compare the Eastern architectural style with the Western architectural style with necessary sketches and examples. **(10)**
3. (a) Explain the structural innovations in the Gothic Period with necessary sketches. **(10)**  
(b) Compare English Gothic architecture with French Gothic architecture. **(10)**
4. (a) Explain the effects of Humanism in architecture in the Renaissance period. **(10)**  
(b) Distinguish the Purist style from the Mannerist or Proto-Baroque style in the High Renaissance period citing examples. **(10)**

**SECTION – B**

There are **FOUR** questions in this section. Answer **Q. 1** and any **TWO** from the rest.

5. Discuss briefly any three of the following: **(3×10=30)**
  - (a) Greek Theatre
  - (b) Geological influence on Roman Architecture
  - (c) Greek Acropolis
  - (d) Roman Walls, Vaults and Buttresses
6. (a) Compare the different **ORDERS** of the Roman and Greek period with proper sketches. **(10)**  
(b) Discuss the various types of optical corrections made by the Greeks to overcome optical illusions created in their temples. **(10)**
7. (a) Compare the Roofing System of the Roman period with that of the Greek period. **(10)**

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- (b) Describe "The Pantheon" with necessary sketches to establish the architectural characteristics of the Roman period. (10)
8. (a) The Aegean period is known for constructing several large and great palaces. Describe the "Palace of Knossos" to explain the architectural characteristics of the Aegean Period. (10)
- (b) Distinguish the architectural characteristics of the Greek period with relevant sketches and examples. (10)

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**SECTION – A**

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

1. Classify Visual Art of two dimensional media with example. (30)
2. What is Art and what are the purpose and functions of Art? (5+15=20)
3. Define sculpture. Discuss the different methods of making sculpture with example. (5+15=20)
4. Discuss the relevance of ART Appreciation subject in architecture studies. (20)

**SECTION – B**

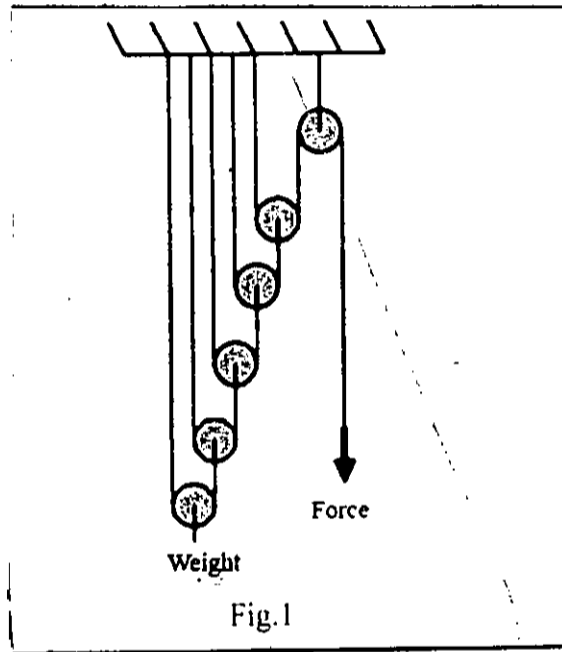
There are **FOUR** questions in this section. Answer **Q. No. 5** and any **TWO** from the rest.

5. What do we look for in art? Describe briefly, the history of Environmental Art. What are the major characteristics features of Bio Art? (10+10+10=30)
  6. What is the philosophy behind Nano Art? Describe the process and special features of Conceptual Art. (5+15=20)
  7. Discuss the socio-cultural relevance of Performance Art? Depict the salient features of Installation Art? Give an example of an Installation Art. (10+10=20)
  8. Write short notes on any TWO of the following: (10×2=20)
    - (a) Computational art
    - (b) Hyper realism
    - (c) Interactive Art
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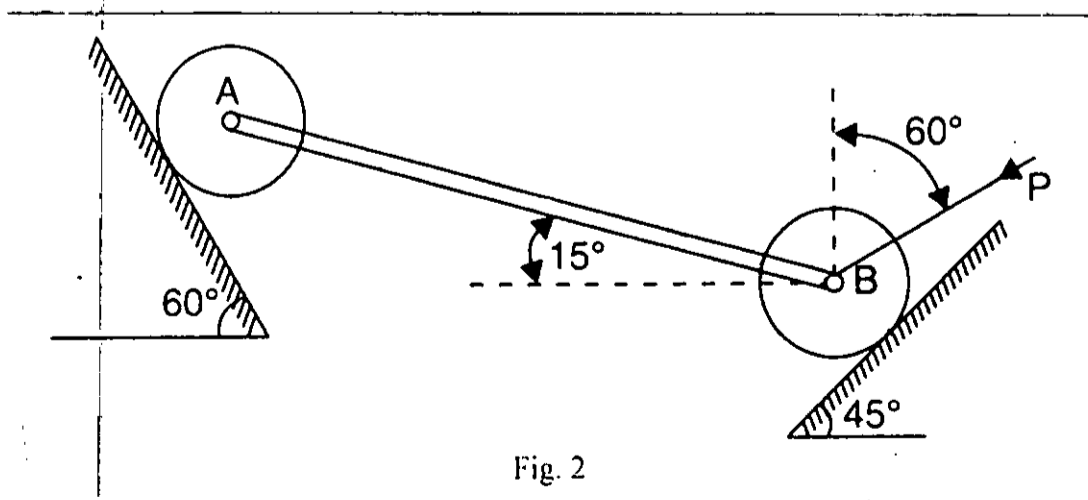
**SECTION - A**

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

1. (a) With the proper free body diagram, calculate the mechanical advantage of the pulley system shown in Fig. 1. Consider the pulleys as frictionless. (10)

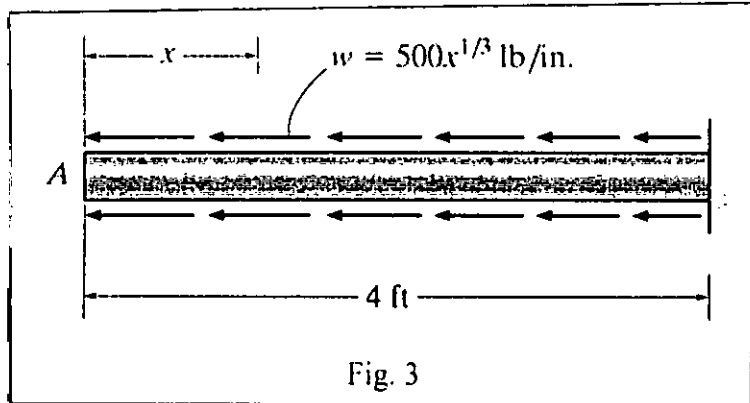


- (b) Fig. 2 shows the cylinders, A of weight 100 N and B of weight 50 N, resting on smooth inclined planes. They are connected by a bar of negligible weight hinged to each cylinder at their geometric centers by smooth pins. Find the forces P, as shown, that hold the system in the given position. (13 1/3)

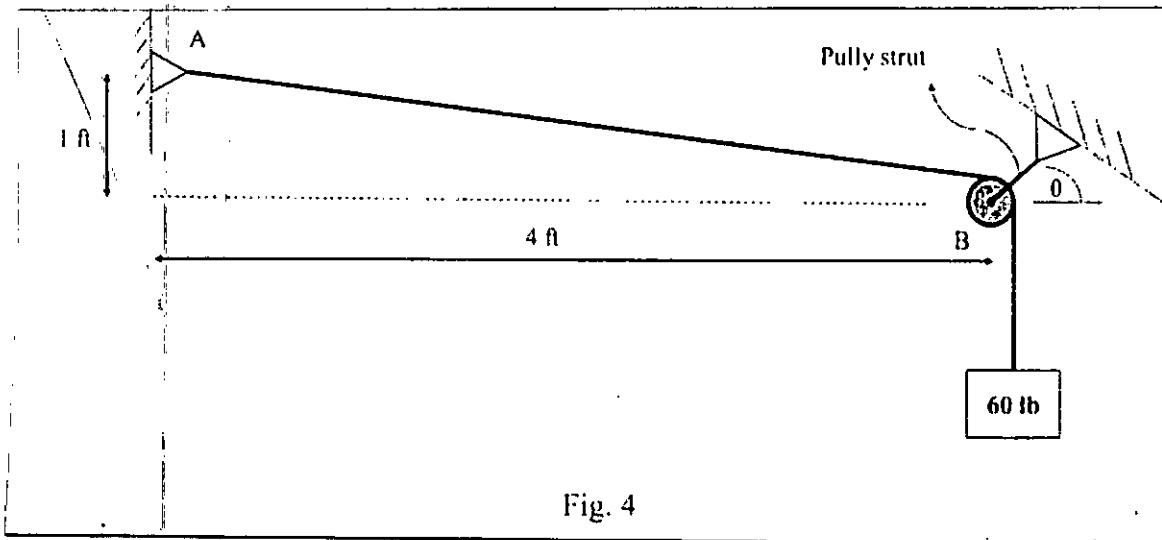


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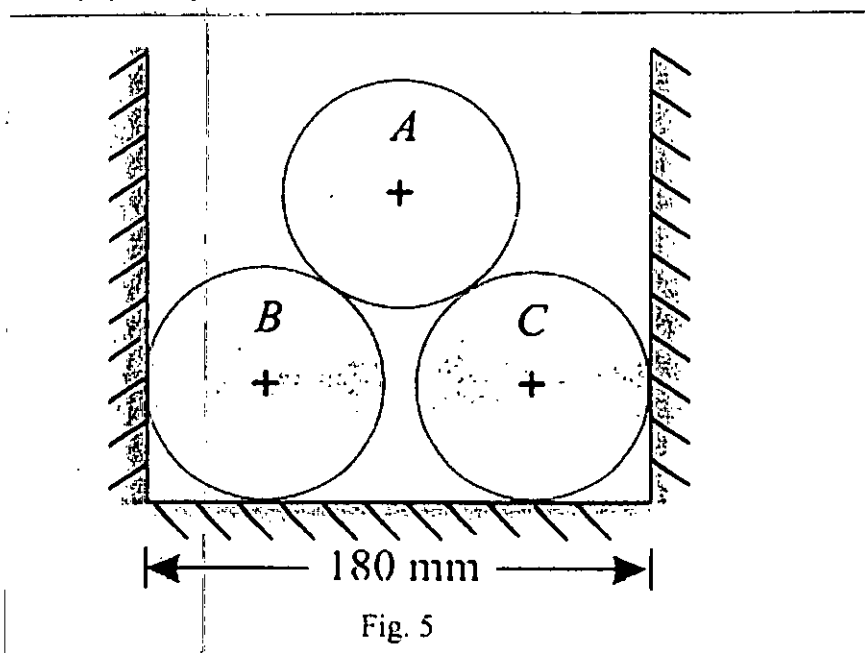
2. (a) The bar shown in Fig. 3 has a cross-sectional area of  $3 \text{ in}^2$  and a modulus of elasticity of  $35 \times 10^3 \text{ ksi}$ . Determine the displacement of its end A when it is subjected to the distributed loading,  $w$ . (10)



- (b) A 60-lb block is suspended from a cable-pulley system, as shown in Fig. 4. Determine the force in the pulley strut and the corresponding angle,  $\theta$ . Ignore the size of the pulley. (13  $\frac{1}{3}$ )



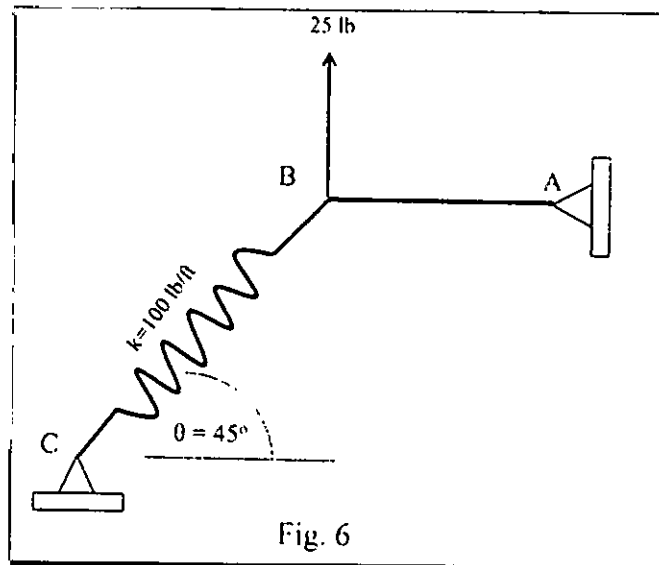
3. (a) Briefly discuss the classification of force systems with examples. (10)  
 (b) Three cylinders weighing 100 N each and of 80 mm diameter are placed in a channel of 180 mm width as shown in Fig. 5. Determine the reactions exerted by (13  $\frac{1}{3}$ )  
 (i) the cylinder A on B at the point of contact  
 (ii) the cylinder B on the base and  
 (iii) the cylinder B on the wall.



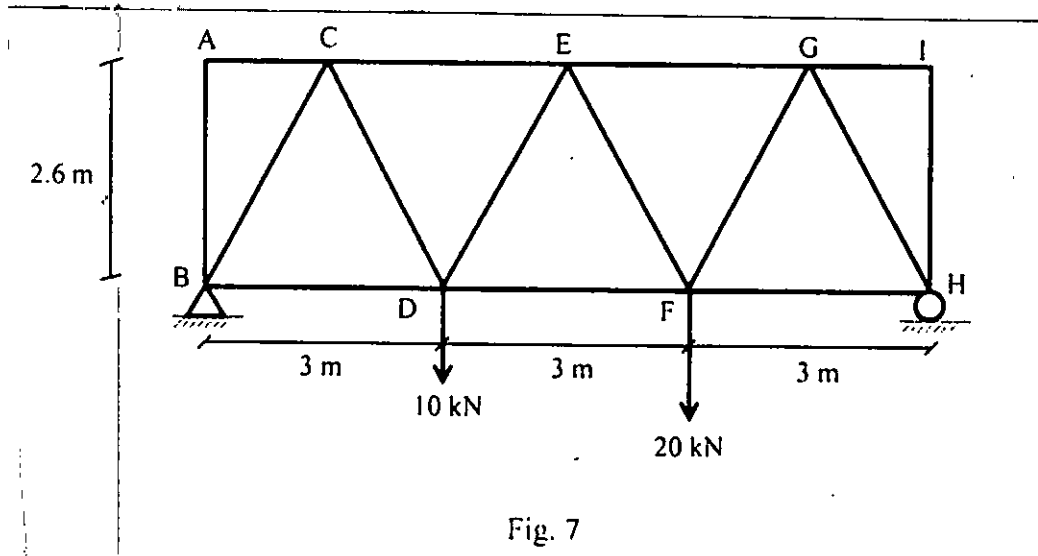
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4. (a) A vertical force of 25 lb is applied to the ends of cable AB and spring BC, as shown in Fig. 6. For the condition of equilibrium, determine the forces  $F_{AB}$  and  $F_{BC}$ . Also calculate the stretch in spring BC if it has a stiffness of  $k = 100 \text{ lb/ft}$ . (10)



- (b) Determine the forces in the members EG, EF, and DF of the truss shown in Fig. 7. (13 1/3)



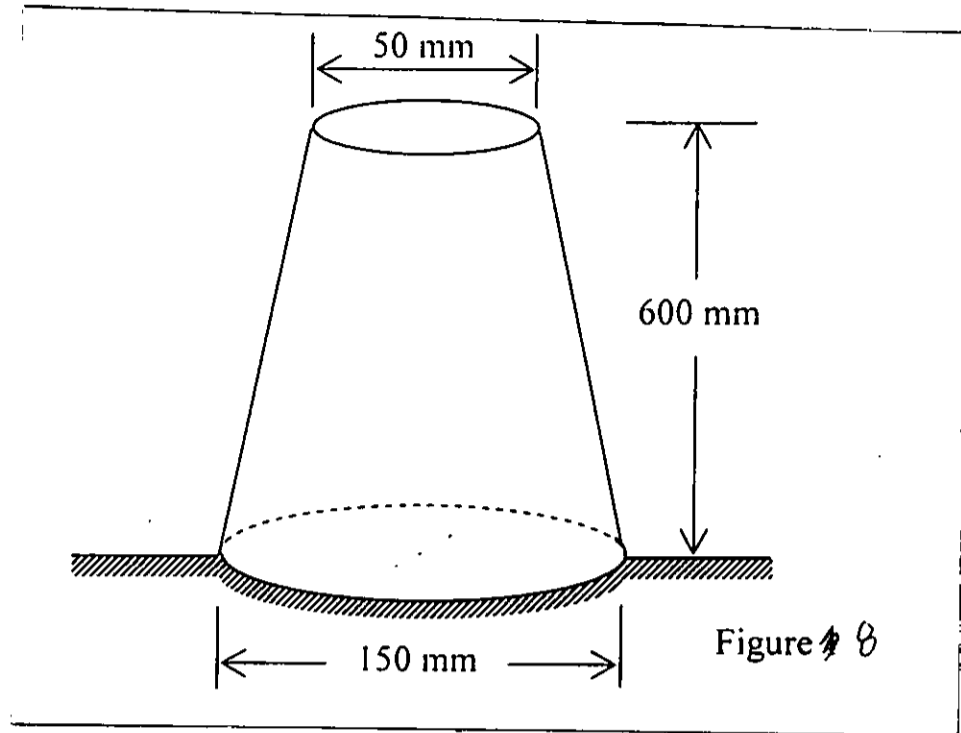
**SECTION - B**

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

5. (a) The dimensions of a solid cone supported at one end on a rigid base are shown in the Figure 8. Determine the deflection of the top due to self-weight of the body. The unit weight of the material is  $\gamma$ ; the elastic modulus is  $E$ . (10 1/3)

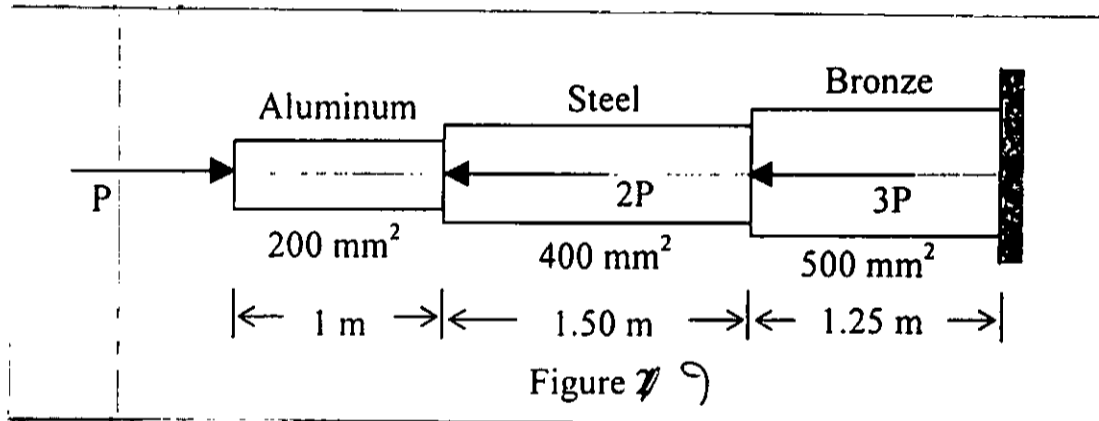
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(b) A steel tube is rigidly attached between an aluminum rod and a bronze rod as shown in Figure 9. Axial loads are applied at the positions indicated. Find the maximum value of P that will not exceed a stress in aluminum of 80 MPa, in steel of 150 MPa, or in bronze of 100 MPa.

(10)

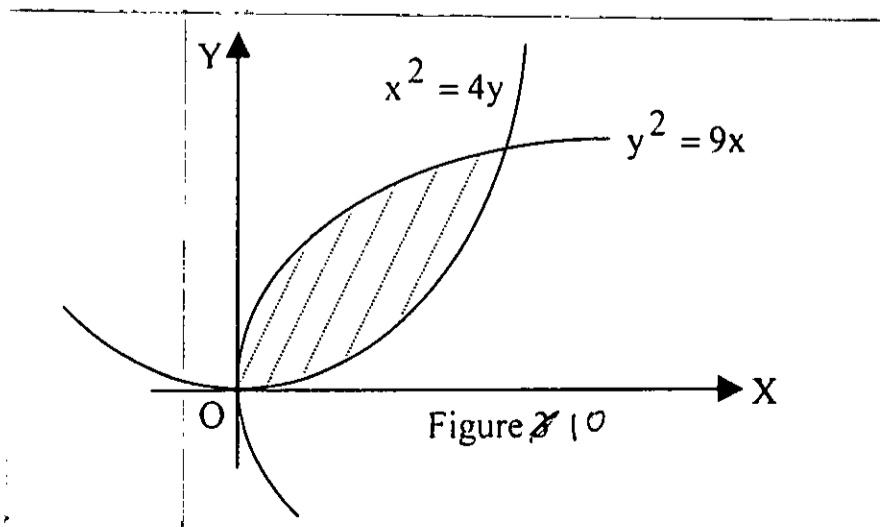


(c) What do you mean by 'modulus of resilience' and 'modulus of toughness'?

(3)

6. (a) Determine moment of inertias of the shaded area as shown in Figure 10 with respect to X and Y axes. (linear unit is in inch unit).

(11 1/3)

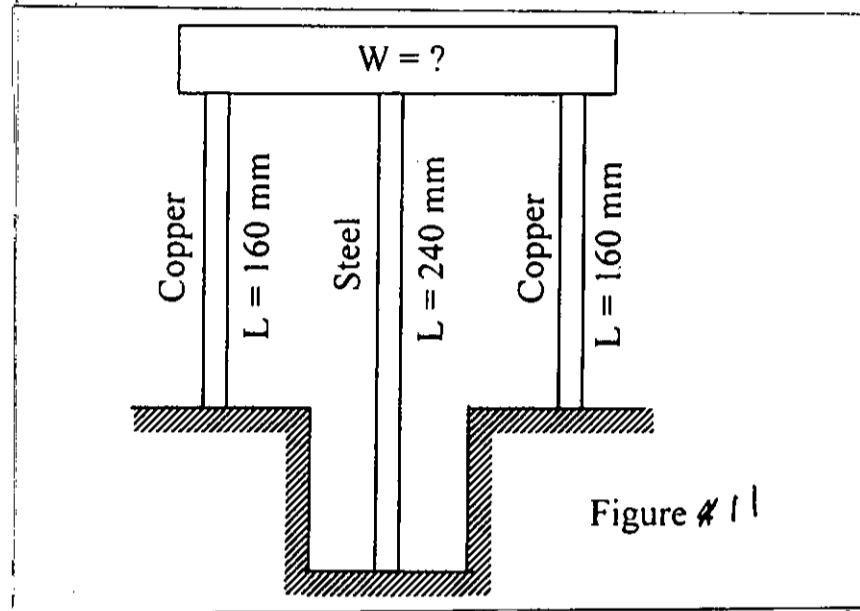


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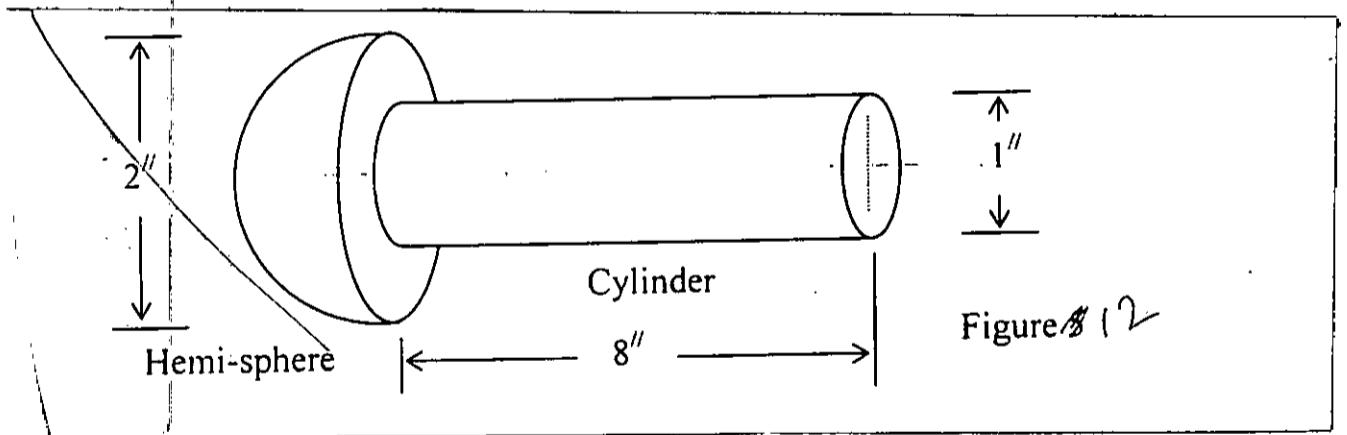
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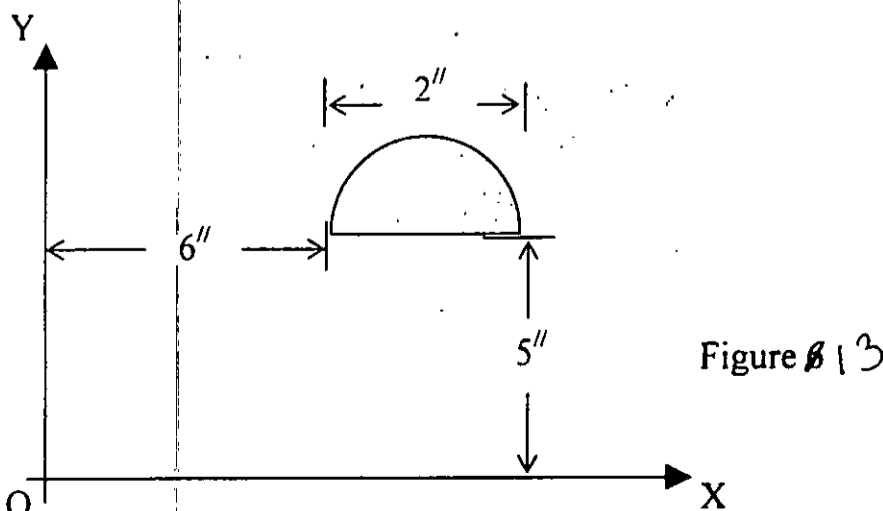
(b) A rigid block of weight  $W$  is supported by three symmetrically spaced rods as shown in Figure 11. Each copper rod has an area of  $900 \text{ mm}^2$ ;  $E = 120 \text{ GPa}$ ; and allowable stress is  $70 \text{ MPa}$ . The steel rod has an area of  $1200 \text{ mm}^2$ ;  $E = 200 \text{ GPa}$ ; and the allowable stress is  $140 \text{ MPa}$ . Determine the largest weight  $W$  which can be supported. (12)



7. (a) Determine the location of center of gravity for the composite volume as shown in Figure 12. (8 1/3)



(b) Determine the volume of torus generated by revolving the semi-circular area (see Figure 13) through  $360^\circ$  about X-axis and Y-axis. (5)



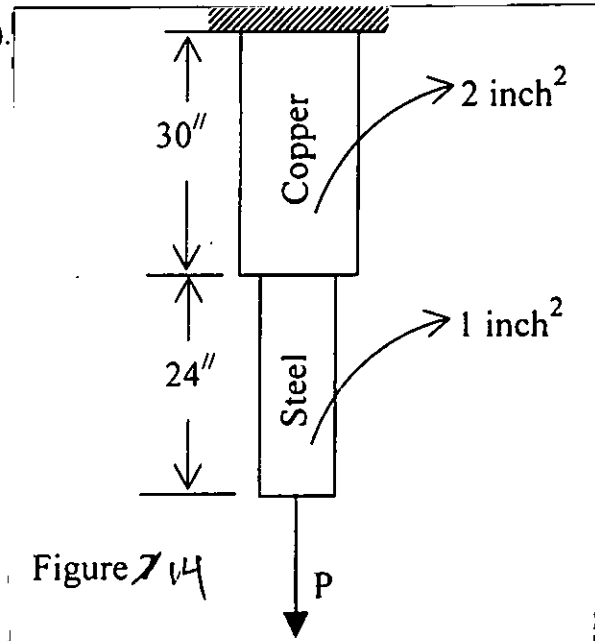
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**Contd ... Q. No. 7**

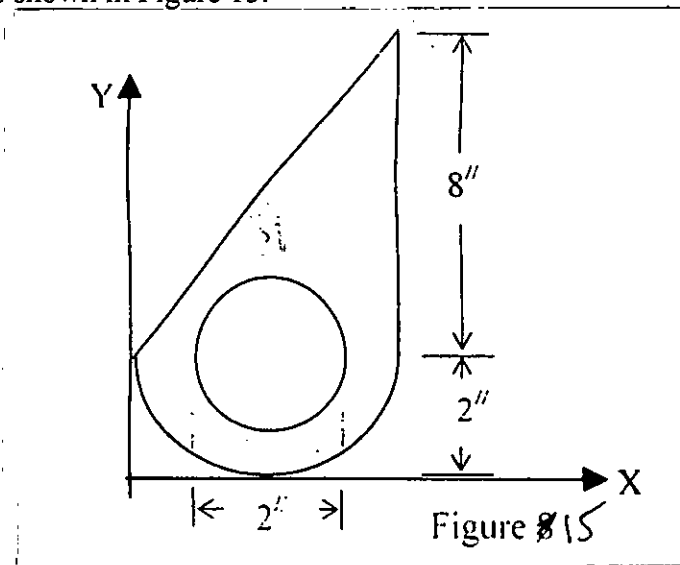
(c) An axial force 'P' is hung on the end of the bar assembly (see Figure 14). This load causes the bar to elongate 0.040 inch. Determine the load 'P'. Given,  $E = 30000$  ksi (for steel) and  $E = 15000$  ksi (for copper).



(10)

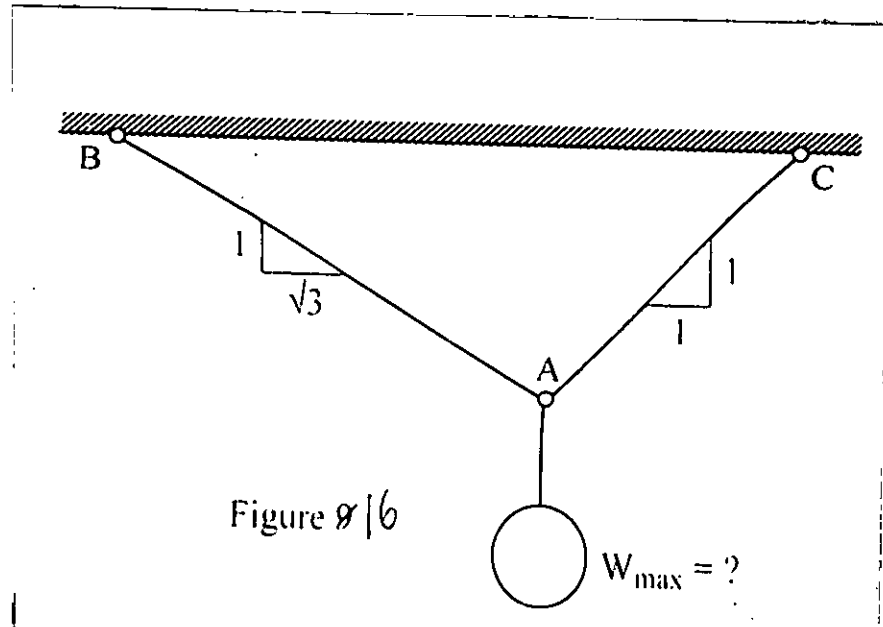
8. (a) Locate the position of centroid and moment of inertias about centroidal axes of the composite figure as shown in Figure 15.

(9 1/3)



(b) Determine the largest weight W which can be supported by two wires shown in Figure 16. The stresses in wires AB and AC are not to exceed 100 MPa and 150 MPa, respectively. The cross-sectional areas of the two wires are  $400 \text{ mm}^2$  for wire AB and  $200 \text{ mm}^2$  for wire AC.

(14)



BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY, DHAKA

L-2/T-1 B.Sc. Engineering Examinations 2022-2023

Sub: **HUM 705 (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** any other **two** from the rest.

1. (a) Explain with reference to the context any one of the following: (8)
- (i) "A low hum came from the mean little cottage."  
(ii) " All these things, which another woman of her station would not have noticed, tortured and angered her."
- (b) Answer any one of the following: (10)
- (i) Trace the changes in the character of the Lawyer during the fifteen years of his confinement in 'The Bet'.  
(ii) How did the loss of the necklace change Matilda's life?
- (c) Answer any three of the following: (12)
- (i) Why did Laura find the workmen extraordinarily nice?  
(ii) How is Matilda received at the party?  
(iii) Contrast Laura with the value members of her family in 'The Garden Party.'  
(iv) Give a brief description of the party arranged by the banker.  
(v) When and how does Matilda come to know about the loss of the necklace?
2. Recast and correct any ten of the following sentences: (20)
- (i) The car was alongside of the garage  
(ii) I don't like to hear a fire whistle blow because they really upset me.  
(iii) He must of known the answer.  
(iv) I should have liked to have heard Caruso sing.  
(v) I have no appetite at all to study.  
(vi) We shall leave early, providing that the weather is good.  
(vii) Jenny and me are the first in line.  
(viii) Erosion is where the soil is washed away.  
(ix) The mechanic turned the motor up.  
(x) He is working at a NGO.  
(xi) The reason I am ill is because I ate two much.  
(xii) Mr. Hasan is a professional cashier.

**HUM 705**

3. Give meanings of and make sentences with any ten of the following words: (20)  
Astray, Benchmark, Castigate, Drench, Flounder, Hubbub, Impromptu, Lustrous, Munch, Outrageous, Posterity, Ratify.
4. Write précis of the following passage with suitable title: (20)  
Men are not made in the same mould, like a lot of bricks. It would have ill-suited the wants of the world if it had been so. Consequently, even in the same country, men differ in disposition and inclination and manners and opinions, more probably than they do in face or form. And between the people of different countries the contrast is even more striking. We have then also, different sentiments, different sympathies, different hopes, different ways together. It will always be so. So long as there are different minds, there will be different views on all matters that admit of opinion. So long as there are different degrees or latitude and longitude as well as differing circumstances there will be different interests, different attachments and different habits. It behoves us, therefore, to cultivate a generous spirit of forbearance towards those, of whatever race, who may think differently and act differently, from ourselves. Even though we may be convinced that they are wrong, if we know them to be sincere, we should still bear with them and give them credit for their sincerity. (collected)

**SECTION - B**

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

5. (a) Read the following passage carefully and answer all the questions given below: (30)  
The use of Generative Artificial Intelligence (GAI) such as ChatGpT and Midjourney, has recently garnered a lot of attention. For example, ChatGpT can generate detailed responses to questions related to diverse domains, and Midjourney can create images or drawings based on user's requests or descriptions. The generated texts or images are almost indistinguishable from those created by humans, which is both impressive and concerning. While these applications offer the potential for creating quality articles or artworks, their misuse could lead to serious problems in education and social security.  
From an academic research perspective, several publishers have recently introduced new policies in response to the growing use of GAI applications by authors. For example, Elsevier has developed a new AI author policy to ensure the integrity of the scholarly record and to provide clear guidance to authors, readers, reviewers, and editors of their journals. According to the new policy, author must declare that they use GAI technologies solely to enhance readability and language, not to replace essential researching tasks such as data interpretation or drawing conclusions. Authors must supervise and control the use of GAI applications and review and edit the results to ensure accurate reporting. Additionally as GAI applications serve as research or learning tools in studies, they cannot be listed as co-author of a paper.

**HUM 705**

(Contd ..... Q. No. 5)

According to some sources, a crucial application of AI in educational settings is enabling personalized learning. With the help of AI technologies, it has become possible to provide individual learners with guidance or support based on their learning performances and needs. This is why previous studies on AI in education (AIED) mainly focused on using AI technologies to enhance learners abilities in memorizing, comprehending, applying, analyzing, and assessing. The emergence of GAI could even shift the educational objective to the highest cognitive level, which is creativity.

Despite the concerns and controversies, there is no doubt that using GAI applications in educational settings is becoming a new trend of technology-enhanced learning. Several scholars have pointed out the potential of GAI based learning including promoting learner's creativity, critical thinking, and problem solving performances. To remove the barriers of adopting GAI applications in schools, it is important to develop guidelines or templates of GAI-based learning. To further depict the effectiveness and potential of GAI-based learning, more quality studies are required.

Questions:

- (a) What concerns are there in academia about the use of ChatGpT? Discuss in the light of your reading the passage.
  - (b) What do you understand by personalized learning? Discuss how GAI can help personalized learning.
  - (c) Why are GAI receiving more attention recently? Write in your own words.
  - (d) What might be a suitable title of the passage? Why do you think so?
6. (a) Assume that you are the purchase officer of a newly opened bank. You need to buy some furniture items for the bank. Write a letter inviting quotation mentioning the items you want to buy (Provide necessary details of the items). (10)
- (b) Write phonetic transcription of the following words: (any five) (10)  
woman; child; bank; vision; shame; basic;
7. (a) Write a dialogue between two friends about price hike of daily commodities during the Ramadan. (10)
- (b) Write an argumentative essay on any one of the following topics: (10)
- (i) Should parents limit the screen time for kids?
  - (ii) Is technology isolating us?
  - (iii) Do sports hurt academic performance in teenagers?

**HUM 705**

8. (a) Transform the following sentences as directed (any five): (10)

- (i) When I was coming to campus I saw many boys hurrying away. (Simple)
- (ii) Never stop in case of failure. (Complex)
- (iii) Despite all luxuries she was unhappy. (Compound)
- (iv) In today's world nobody can deny the importance of English. (Complex)
- (v) Incompetent teachers should not be recruited for teaching English. (Active)
- (vi) We have to identify the causes of our students' failure. (Passive)

(b) Write short notes on any two of the following: (10)

- (i) Different kinds of report
- (ii) Pure vowel sounds
- (iii) Organization of a paragraph

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

1. (a) Why psychology is called a scientific study of behaviour and mental process? (6)  
(b) How do you apply the knowledge of psychology as a student of architecture? (17 1/3)
2. (a) Differentiate between sensation and perception? (6)  
(b) Why did Gestalt psychologists say "the whole is greater than the sum of its parts"? (17 1/3)
3. (a) Draw and label Abraham Maslow's need hierarchy theory of motivation. (6)  
(b) Discuss the theories of emotion. (17 1/3)
4. (a) Define personal space and territoriality. (6)  
(b) How is environmental psychology related to architectural design? (17 1/3)

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

5. (a) What is the difference between practical and emotional intelligence? (6)  
(b) Describe the basic theoretical orientations of intelligence. (17 1/3)
  6. (a) Discuss briefly main personality tests. (6)  
(b) Discuss "Big Five" model of personality. (17 1/3)
  7. (a) What are the basic differences between classical and operant conditioning? (6)  
(b) Discuss Bandura's social learning theory. (17 1/3)
  8. (a) Draw the 3-stage structure of human memory with appropriate labelling. (6)  
(b) Why do we forget information? (17 1/3)
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