

B.Sc. (F & S) Sem.-2 Examination

CC - 203

Mechanics of Solid & Town Planning

June 2022

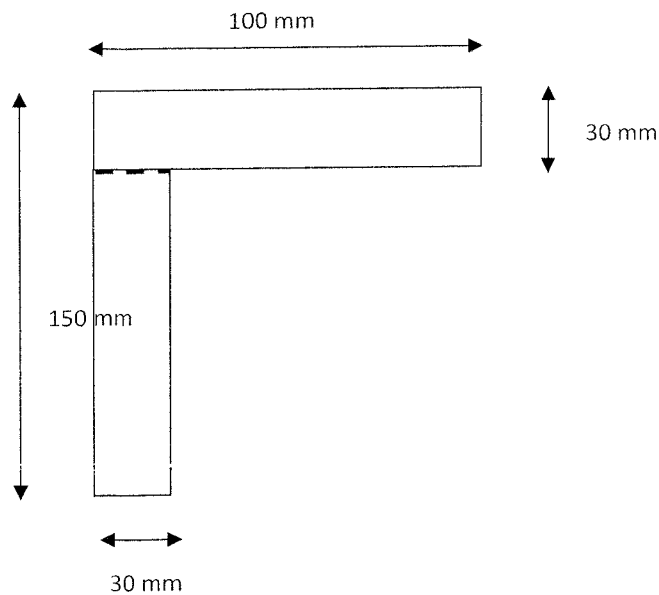
Time : 2-00 Hours]

[Max. Marks : 50

Instructions :- All questions in Section-I carry equal marks.
 Attempt any three questions in Section-I.
 Questions in Sections-II is compulsory.
 Scientific calculators are allowed.

Section-I

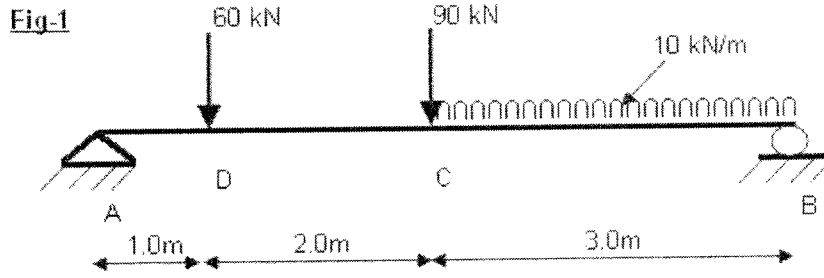
- Q-I A** Write down the methods to find out the resultant of number of forces acting on an object. Explain any one method of It. 7
- B** Explain types of Beam with its reaction forces. 7
- Q-II A** Define Moment of force. Explain types of moment of force. 7
- B** Find out a center of gravity of a 100 mm x 150 mm x 30 mm section. 7



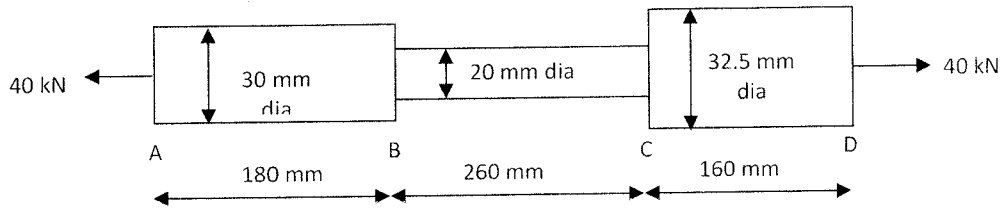
- Q-III A** Explain different types of material with example. 7
- B** Draw the shear force and bending moment diagram for the given figure. 7

P.T.O

E-542-2



- Q-IV A** Define Stress & Strain. Explain types of stress with figure. 7
- B** Find the stresses in the three parts & total extension of the bar for the axial pull of 40 kN. Take $E = 1.05 \times 10^5 \text{ N/mm}^2$. 7



- Q-V A** What is the function of masonry wall in a building? List out the properties of the wall and draw a diagram of panel wall. 7
- B** Give types of roads in urban area and describe Arterial road, Local road and streets 7
- Q-VI A** According to NBC in how many categories the building has been classified? and what are the two basic parts of building and component of building? 7
- B** What should be the quality of a good wall? Define Load bearing, Non load bearing, partition wall and party wall. Also draw a figure of Face wall. 7
- Q-VII** What is a pile foundation and how it differs from pier foundation? 7
- A** Draw a figure of simple pile. 7
- B** What are the important features you will consider for selection of site for urban development. 7
- Q-VIII** What information should be indicated in the building plan for 7
- A** multistory flats and for hospitals and special risk? 7
- B** Explain foundation, walls & columns and floor structure of building. 7

Section II

- Q-IX MCQs** 8
- 1 An agency which changes or tends to change the position of rest or of uniform motion of the body is known as _____. 7
- A. Moment B. Shear Stress

E542-3

- C. Force
D. Friction
2. Which comes under vertical transportation?
A. Stairs
B. Ramps
C. Ladders
D. All
3. A point of a body through which the resultant of the distributed gravity forces act irrespective of the orientation of the body is known as _____.
A. Centroid
B. Center of Mass
C. Center of Gravity
D. All of these
4. If independent footings of two columns are connected by beam, it is called _____.
A. Strap footing
B. Simple footing
C. Spread footing
D. Combined footing
5. A material undergoes a continuous deformation during the period of loading and the deformation is permanent and the material does not regain its original shape on the removal of loading is known as _____.
A. Rigid Material
B. Plastic Material
C. Elastic Material
D. None of them
6. A roof having sloping top surface is called _____.
A. Flat roof
B. Terraced roof
C. Pitched roof
D. Curved roof
7. A wall, self supporting, carrying no other vertical loads but subjected to lateral loads is known as _____.
A. Party wall
B. Panel wall
C. Partition wall
D. Curtain wall
8. For building having height between 13 M to 25M, the minimum water capacity of underground tank should be _____.
A. 69000 Ltrs
B. 79000 Ltrs
C. 89000 Ltrs
D. 99000 Ltrs

—X—