

Printed Pages : 4



NAR-103

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 181113

Roll No.

--	--	--	--	--	--	--	--	--	--

B. Arch.

(SEM. I) (ODD SEM.) THEORY
EXAMINATION, 2014-15

ARCHITECTURAL STRUCTURES - I

Time : 3 Hours]

[Total Marks : 50

- Note :**
- (1) Attempt any **five** questions.
 - (2) Assume any missing data.

- 1 (a) Write short notes on the following : 5
- (i) Elasticity
 - (ii) Axial stress and strain
 - (iii) Hook's law
 - (iv) Shear stress and shear strain
 - (v) Modulus of elasticity
- (b) Draw stress strain curve for mild steel and 5
mark yield point proportional limit, permanent set, break point.

- 2 (a) Define the centre of Gravity of plane figures. 5
 (b) Find the centre of gravity of a channel section 5
 100 mm \times 50 mm \times 15 mm.

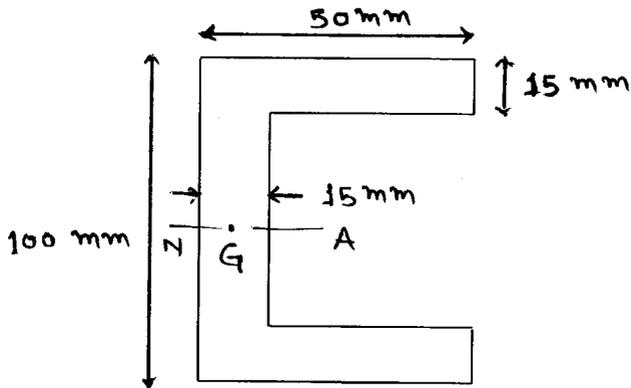


Fig.

- 3 (a) Define the theorem of perpendicular axis ? 3
 (b) Find the moment of inertia of a T-section 7
 with flange as 150 mm \times 50 mm and web as
 150 mm \times 50 mm about X-X and Y-Y axis
 through the centre of gravity of the section.

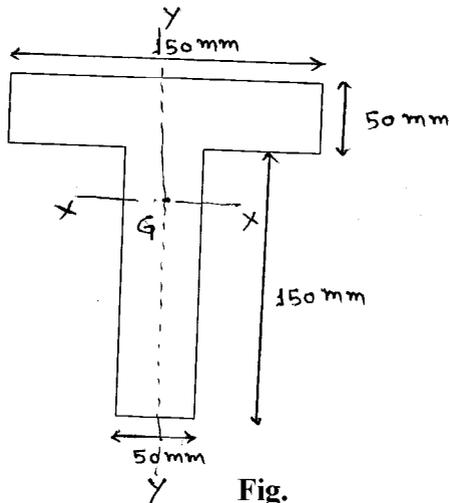


Fig.

2

- 4 A cantilever beam of 1.5 m span is loaded as shown in fig. Draw the shear force and bending moment diagrams. 10
- shown in fig. Draw the shear force and bending moment diagrams.

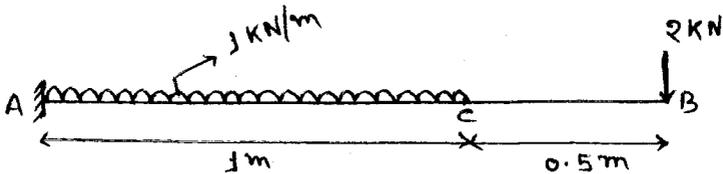


Fig.

- 5 Define the section modulus in the beams and draw the shear stresses distribution of the following section and mark shear centre in each section. 10
- the shear stresses distribution of the following section and mark shear centre in each section.

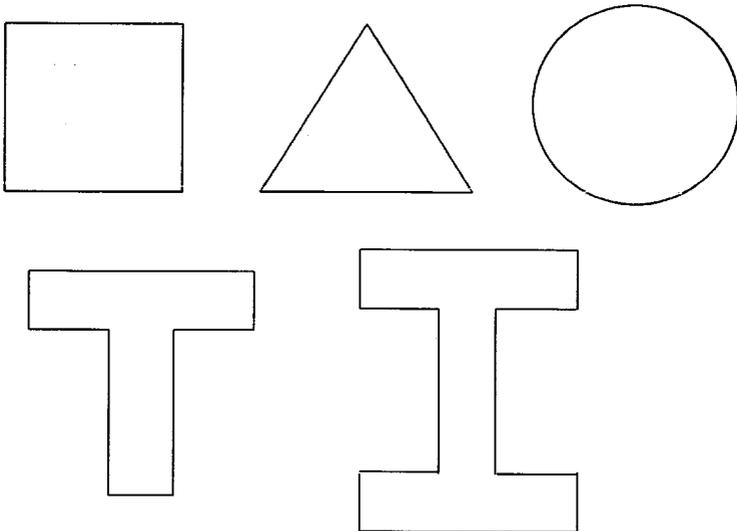


Fig.

- 6 Determine the centre of gravity and moment of inertia about the diameter AB of a semi circular lamina.

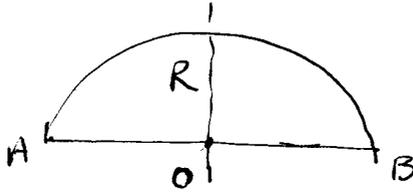


Fig.

- 7 Define middle third rule in direct and bending stress in the column section given below :

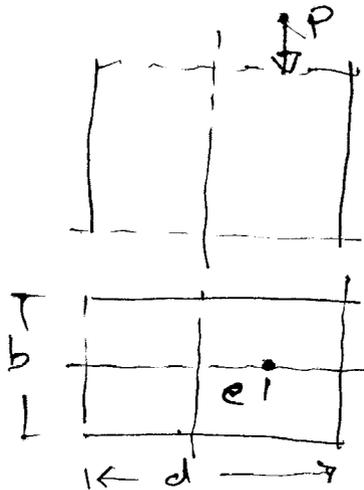


Fig.