



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

PAPER ID : 181105

Roll No.

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B. Arch.

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

Time : 3 Hours]

[Total Marks : 50

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

1 Define the following :

- (i) Elastic and homogeneous material
- (ii) Isotropic material
- (iii) Poisson's ratio
- (iv) Shear stress and shear strain
- (v) Bulk modulus.

2 Determine the resultant of the forces shown in the diagram below.

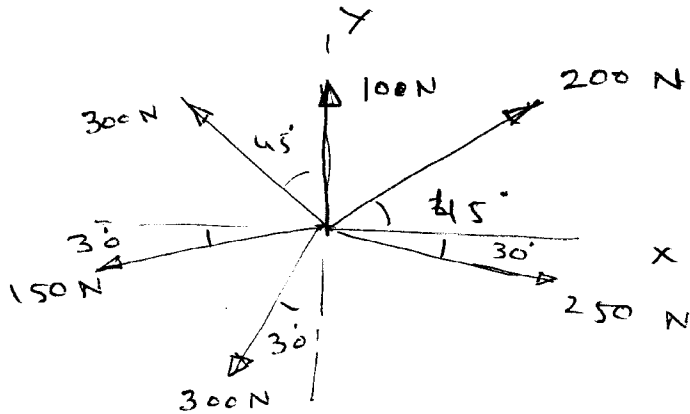


Fig. 1

3 Define the following :

- (i) Equilibrium of concentric forces at a point
- (ii) Law of triangle of forces
- (iii) Law of polygon of forces
- (iv) Moment of couple
- (v) Polar diagram.

- 4 (a) Determine the CG of a triangle of base b and height h by first principle.
- (b) Determine the CG of the triangle shown below.

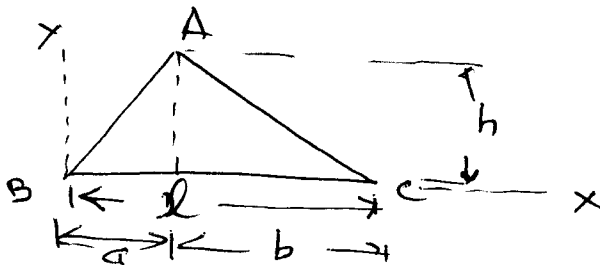


Fig. 2

- 5 (a) Define the Moment of Inertia (M.I.) of continuous areas.
 (b) Determine the M.I. of semicircular lamina about the diameter.
- 6 Determine and draw B.M. and S.E., for the beam shown below :

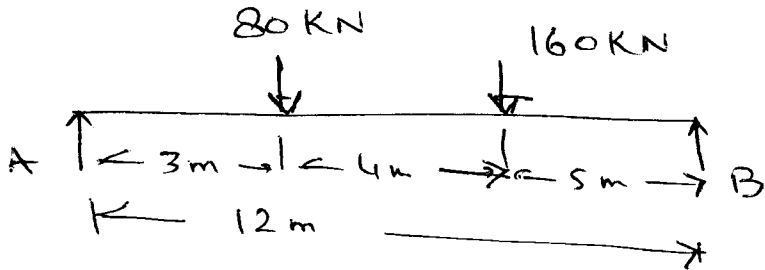


Fig. 3

- 7 Determine the resultant of parallel forces shown below by analytical or graphical method.

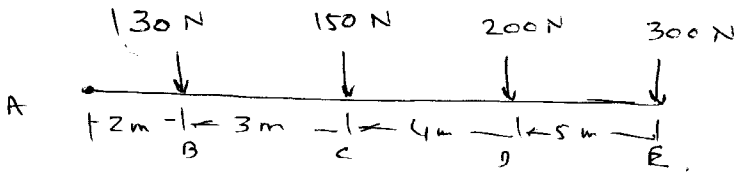


Fig. 4