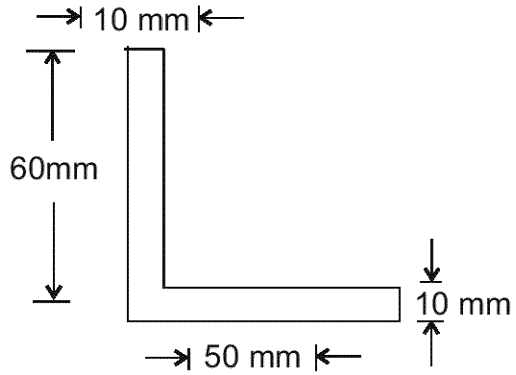
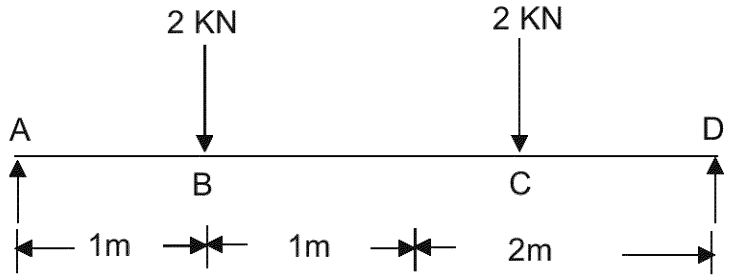
magnitude of the force.

Q.4 Find the centroid of the following lamina.



Q.5 Find the reactions for the given simply supported beam.



Q.6 A cantifever beam of span 6m carries u.d.l. of 2 KN/m over the whole span of the beam. Draw S.F.D. and B.M.D. for this beam.

Q.7 Draw stress-strain curve for mild steel.

No. of Printed Pages : 4
Roll No. .....

120245

4th Sem. / Architectural Assistantship

Subject : Structural Mechanics

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Very Short Answer type questions. Attempt any 15 parts. (15x2=30)

Q.1 a) Mechanics.

b) Force system.

c) Free body diagram.

d) Parallel force.

e) Moment of a force.

f) Strain.

g) Factor of safety.

h) Shear stress.

i) Centroid.

j) Moment of inertia.

k) Dead load.

l) Roller support.

m) Uniformly distributed load.

n) Tension.

o) Neutral axis.

p) Section Modulus.

q) Point of contraflexure.

r) Temperature stress.

SECTION-B

Note: Short answer type questions. Attempt any ten parts 10x4=40

Q.2 i) Define force. Write units of force.

ii) Define polygon law of forces.

iii) Explain Lami's theorem.

iv) Differentiate between clockwise and anticlockwise moments.

v) Define stress. Write different types of stresses.

vi) Define Hooke's law.

vii) A tensile force of 20 KN is acting on a rectangular bar of X-sectional area 2500

mm^2. Find the magnitude of stress induced.

viii) Explain parallel axis theorem.

ix) Draw the diagrams of different types of beams.

x) Define bending moment and shear force.

xi) Draw the B.M.D. for a simply supported beam of span 'l' with a point load 'w' at its centre.

xii) Draw the diagrams of different types of supports.

xiii) Write any four assumptions in the theory of simple bending.

xiv) Define perfect frame. Write the condition for a perfect frame.

xv) Write the units of following:-

Moment, Strain.

SECTION-C

Note: Long answer type questions. Attempt any three questions. 3x10=30

Q.3 Forces of 6N and 8N are acting at a point. The angle between these forces is 60°. Find the