B. Arch. Examination 2021-22

(Even Semester)

ARCHITECTURAL STRUCTURES - II

Time : Three Hours]   *[Maximum Marks : 50*

Note :– (i)   Attempt all questions.

(ii)   Use of calculator is allowed.

1.   Fill in the blanks of the following :   10×1=10

(a)   Cantilever beam is fixed at .... end.

(b)   Forces acting in trusses are loaded on .... only.

(c)   Graphical methods are used in analysis of ....

(d)   Slenderness ratio of long column is more than ....

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(e)   Deflection is maximum at .... in cantilever beam.

(f)   Shear stress measurement unit is ....

(g)   Measurement unit for critical load is ....

(h)   .... gave theory for long columns.

(i)   Middle third rule is for ....

(j)   If $m < 2j - 3$, the truss is known as ....

2.   Define any three of the following :   15

(a)   Shear stress and bending stress distribution curve for a beam of circular cross-section.

(b)   Types of columns.

(c)   Method of sections for truss analysis.

(d)   Deflection in cantilever beam.

(e)   Centre of parallel forces.

3.   Answer any one part of the following :   5
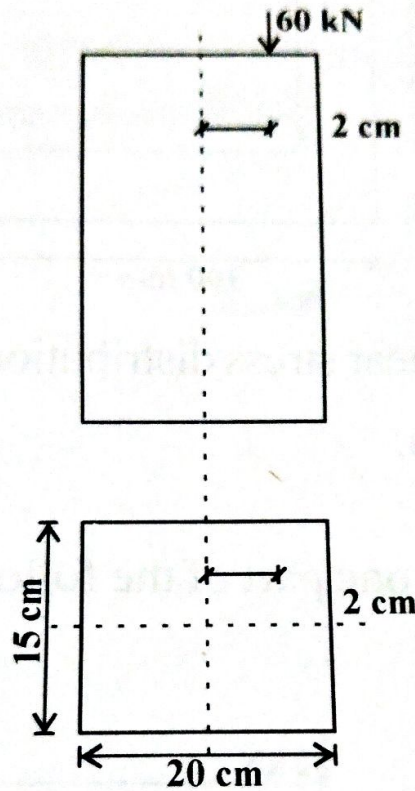
(a)   Find buckling load for a column with both ends fixed and having 10 m length. The cross section is circular with 800 mm diameter.

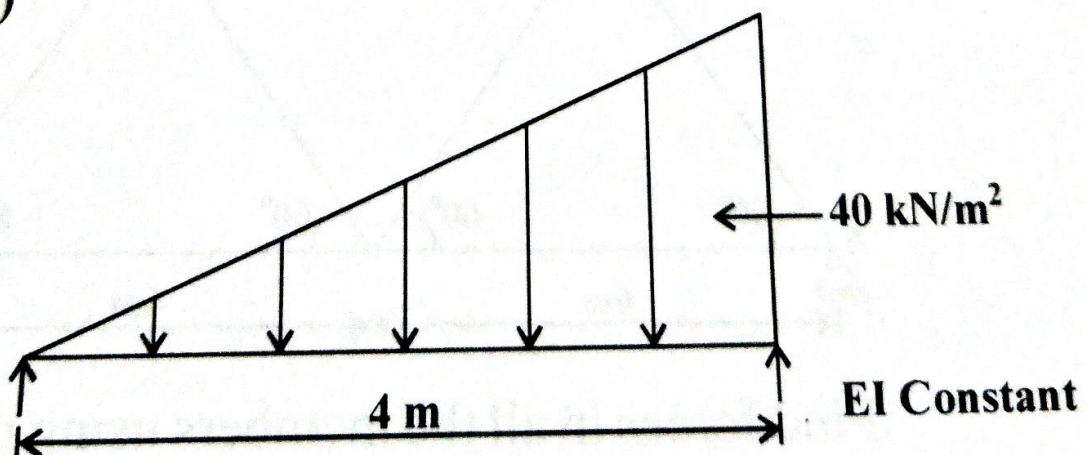(b) Describe the procedure of determining centre of parallel forces.

4. Attempt any one part of the following : 5

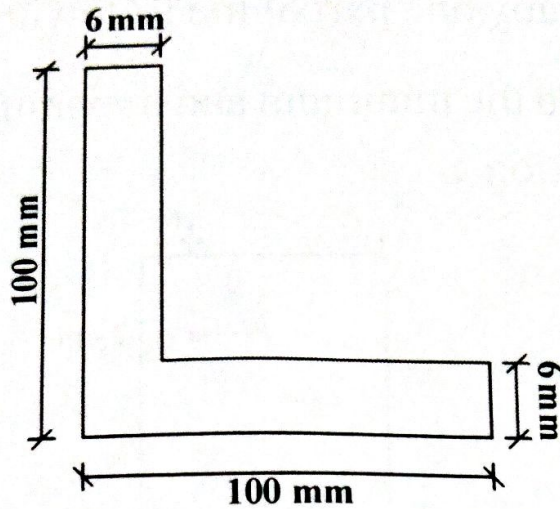(a) Find the minimum and maximum stresses in the section :

(b)

Find deflection.

5. Attempt any one part of the following :   5

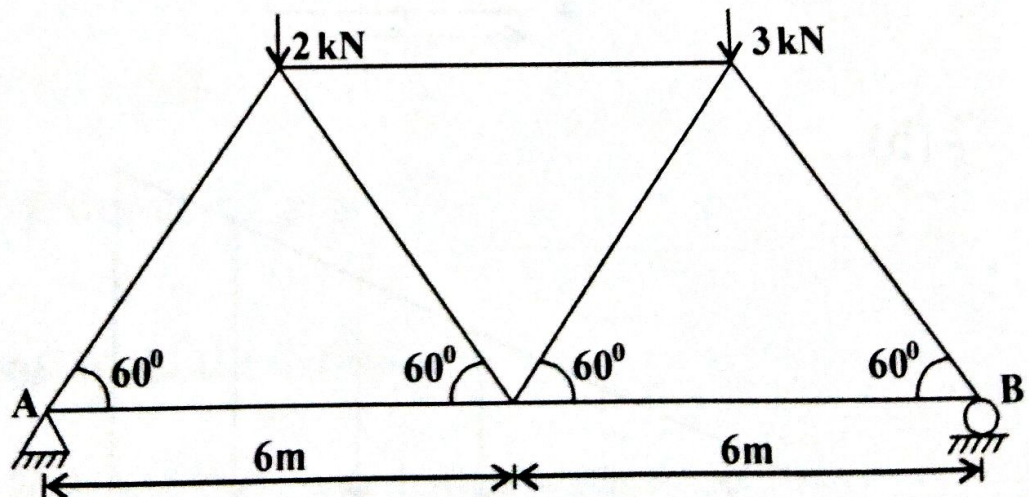 (a)   Find CG :

  (b)   Find shear stress distribution for hollow circular section.

6. Attempt any one part of the following :   5

  (a)

Find forces in all the members using method of joints.

(b) Elaborate method of joints and sections for analysis of truss.

7. Attempt any one part of the following : 5

(a) List all the end conditions of columns with proper diagram and formulae.

(b) Find slenderness ratio limit for mild steel. Assume other details.

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