B.Arch. Fourth Semester (Architecture) (CGS)

10032 : Architectural Structure - III : 04 AR 05

P. Pages : 2 **AV - 2732**

Time : Three Hours * 0 2 3 9 * Max. Marks : 80

Notes : 1. All question carry equal marks.
2. Due credit will be given to neatness and adequate dimensions.
3. Assume suitable data wherever necessary.
4. Illustrate your answer necessary with the help of neat sketches.
5. Use of pen Blue/Black ink/refill only for writing the answer book.

1. A fixed Beam AB of length 10m carries a point load of 180 kN and 140 kN at a distance of 3m and 6m from right end B. Find the fixed end moments and reactions at the supports. Draw BM and SF diagrams. **16**

OR

2. Draw the resultant SF and BM diagrams for the fixed beam as shown in fig. 1. **16**

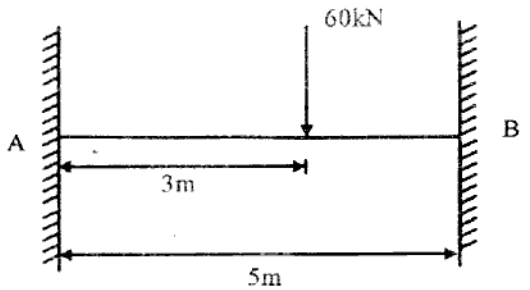

Fig. 1

3. Find moments at supports using theorem of three moments for beam shown in fig. 2. Also draw SFD & BMD. **16**

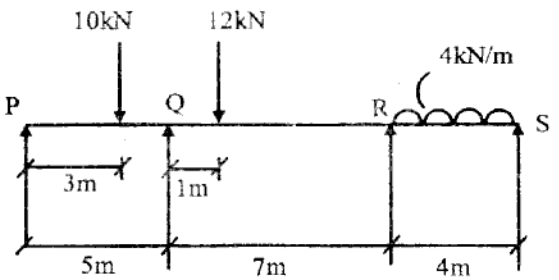

Fig. 2

OR

4. Draw SFD and BMD for continuous beam shown in fig. 3 and determine moments at supports. **16**

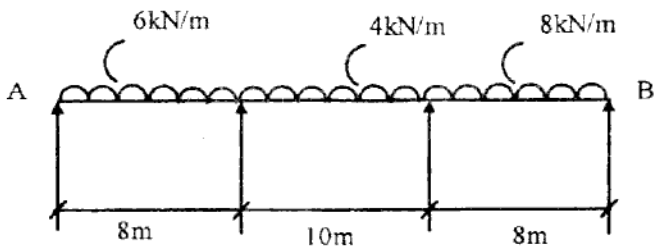

Fig. 3

5. By using moment distribution method, find fixed end moments of A, B, C & D for portal frame shown in fig. 4. **16**

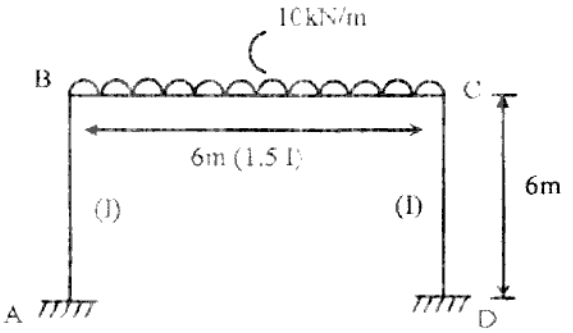

Fig. 4

OR

6. Analyze the portal frame shown in fig. 5 by moment distribution method. **16**

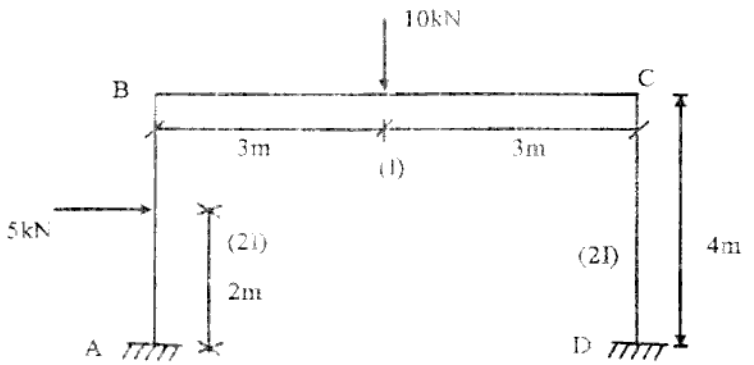

Fig. 5

7. Find the support moments and the reactions at the supports for the beam shown in fig. 6. **16**

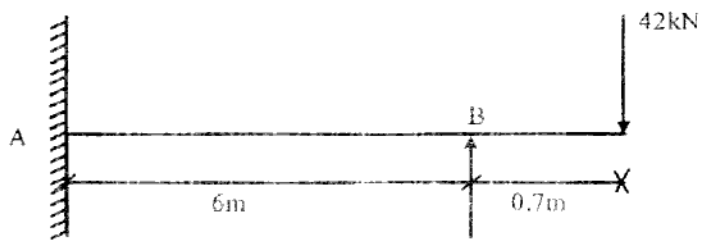

Fig. 6

OR

8. Find the support moments and support reactions for the beam shown in fig. 7. **16**

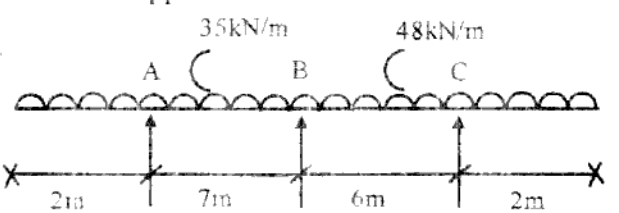

Fig. 7

9. Explain the various methods of soil improvement and also explain necessity of soil improvement. **16**

OR

10. Write a short note on : "Failure of Foundation systems and the remedial measures for it". **16**

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