

BHARATI VIDYAPEETH INSTITUTE OF TECHNOLOGY

Question Bank (K-Scheme)

Name of subject: Theory of Structure Unit Test: II Subject code: 315313

Course: CE Semester: V

Unit III (Continuous Beam)

2 Marks

1. Define Continuous Beam.
2. Effect of Continuity on Continuous beam.
3. Write Clapeyrons equation for beam.
4. Explain the concept of Imaginary span.
- 5.
6. Define slope & deflection of beam

4 Marks

1. A continuous beam ABC is simply supported at A, B and C. Span AB carries a UDL of 20KN/M over a span of 6 m and span BC carries a central point load of 40KN. Find support moments by using clapeyrons theorem of three moments and draw BMD.
2. A continuous beam ABC is fixed at A and supported over B and C such that span AB is 8 m and BC is 6 m. Span AB carries a UDL of 12KN/M and a point load of 48KN acts at the Centre of BC. Using clapeyrons theorem, find support moments and draw BMD.
3. A continuous beam ABCD is supported at A, B and C with CD as overhang. Span AB is loaded with a point load of 12KN applied at Centre of AB, span BC is loaded with a point load of 12KN applied at 3 m from C and there is a point load of 2KN at point D. Span AB=6m, BC=8m, CD=1m. Find support moments by TMT and draw BMD.
4. A continuous beam ABCD is fixed at A and simply supported at B and C, CD is overhang. Span AB and BC is 6 m, CD is 2 m. Span AB carries a UDL of 20KN/m and span BC carries a point load of 40KN at Centre also there is a point load of 30KN at point D, find support moments and draw BMD by theorem of three moments.
5. A beam AB is fixed at A and B carries a UDL of 20KN/M over a span of 5 m. Find support moments and drop BMD by using Clapeyrons theorem of three moments.
6. A continuous beam ABC of different moment of inertia carries a central point load of 100KN on span AB, a UDL of 25KN/m is acting over the entire span BC. AB=6m, BC=4m. M.I of section AB is twice that of section BC. A and C are simple supports. Find support moments and drop BMD by using Clapeyrons theorem of three moments.

Unit IV (Moment Distribution Method)

2 Marks

1. Define a) Carry over moment b) carry over factor
2. Define stiffness factor and write the value of stiffness factor for one end simply supported and other is fixed.
3. Define distribution factor.
4. Define symmetrical frame with sketch.

4 Marks

1. A beam ABC is Simply supported at A, B and C span. AB carries a UDL of 12KN/m and span BC carries a central point Load of 40KN. AB is 4 m, BC is 4 m. Calculate support moments and draw BMD by using moment distribution method.
2. A beam ABC is fixed at A and supported over B,C. Span AB carries a udl of 10KN/m over a span of 5 m and span BC carries a point load of 20KN at 1 m from point C. Calculate support moments by using moment distribution method also draw BMD.
3. A continuous being ABCD is simply supported over A, B and C. Span AB carries a UDL of 2KN/M over a span of 6 m and span BC carries a point load of 10KN at 5 m from point C and there is a point load of 4KN at point D. Calculate support moments by using moment distribution method and draw BMD.
4. A beam ABC is fixed at A and supported over B. Span AB carries a UDL of 20KN/m over a span of 3 m and a point load of 30 kN at point C. Find support moments and draw BMD by using moment distribution method.
5. A beam ABC is fixed at A and C and supported over B, span AB is 5 m and carries a UDL of 20KN/m over entire span, BC is 5 m and carries a central point load of 100KN, find support moments and draw BMD by using moment distribution method.

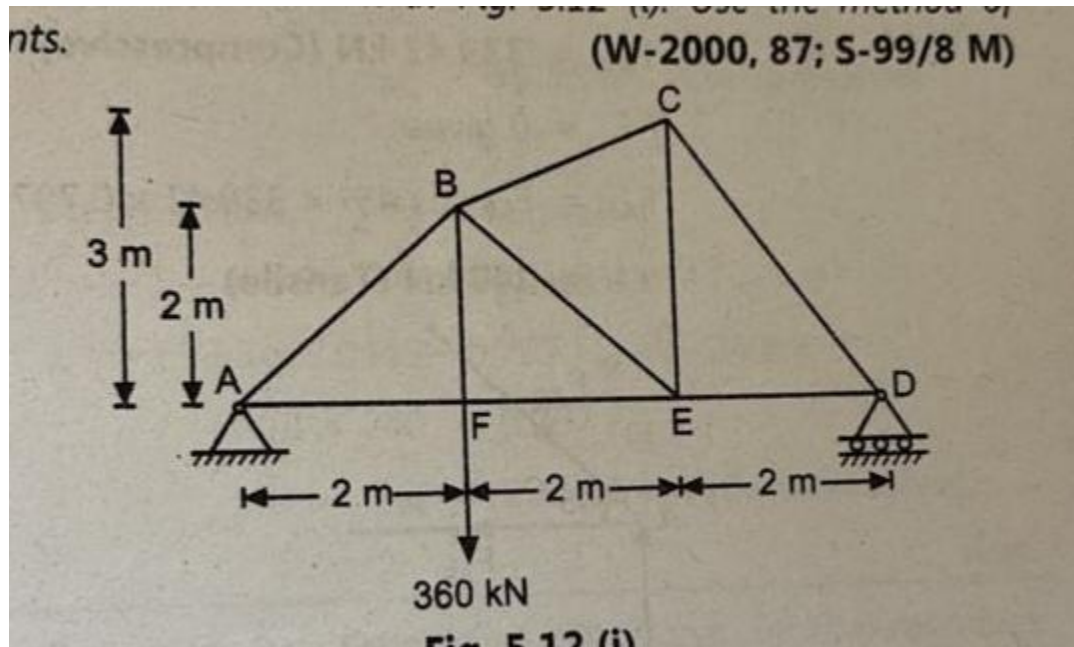
Unit V (Simple Trusses)

2 Marks

1. Define Redundant frame with sketch
2. Assumptions in the analysis of Frame.
3. Draw Sketches of any four perfect trusses.

4 Marks

1. Determine the forces in the members of Truss as shown in fig by using method of joints.



2. Determine the forces in the members of Truss as shown in fig by using method of joints.

