

F 3667

(Pages : 4)

Reg. No.....

Name.....

B. TECH. DEGREE EXAMINATION, NOVEMBER 2014

Fifth Semester

Branch : Civil Engineering

CE 010 506—STRUCTURAL ANALYSIS-I (CE)

(New Scheme—2010 Admission onwards)

[Regular/Improvement/Supplementary]



Time : Three Hours

Maximum : 100 Marks

Part A

*Answer all questions.
Each question carries 3 marks.*

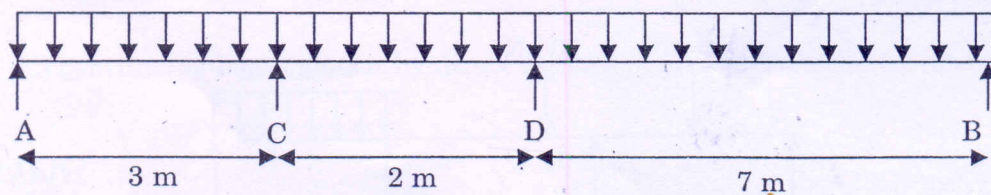
1. Differentiate perfect and imperfect frame.
2. Define Flexural Rigidity of Beams.
3. State relative merit of moment distribution method over slope deflection method.
4. Define carry over factor.
5. Write the three moment equation for general case.

(5 × 3 = 15 marks)

Part B

*Answer all questions.
Each question carries 5 marks.*

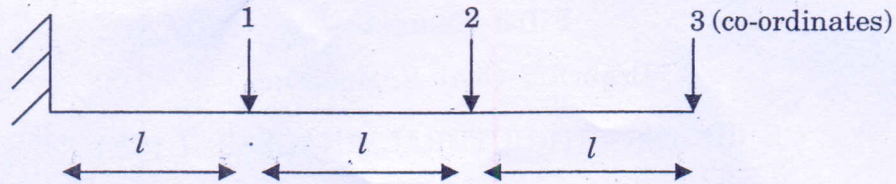
6. A continuous beam shown in Fig. has a span of 12 m. and supports a transverse load of 15 kN/m. Draw the free body diagrams of portions AC, DB and CD.



7. Explain Clapyron's theorem of three moments in detail.
8. What are all the steps involved in compatibility method and equilibrium method ?

Turn over

9. Develop the flexibility matrix for the cantilever with the co-ordinates as shown in the Fig. below.



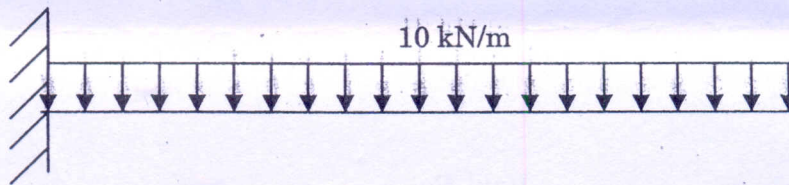
10. Briefly explain the historical development of the Finite Element Model analysis.

(5 × 5 = 25 marks)

Part C

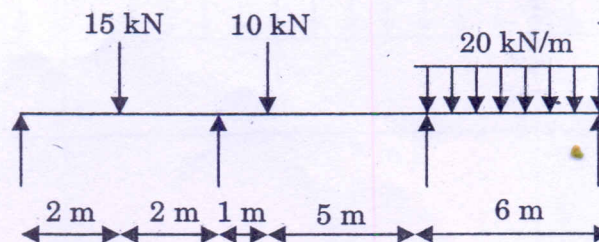
Answer all questions.
Each question carries 12 marks.

11. Calculate the moments for the given beam using method of consistent deformation.

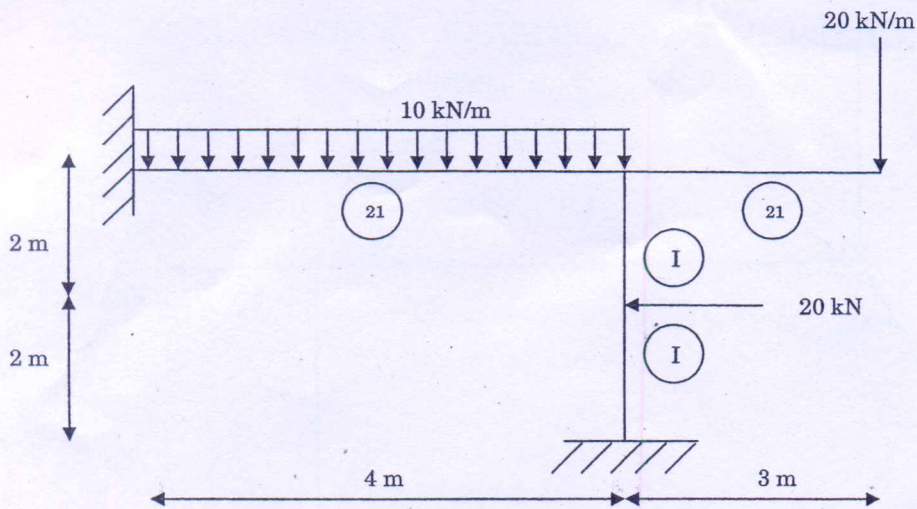


Or

12. Determine the Shear force and B.M. of the given continuous beam shown in the Fig. below. Use theorem of three moment.

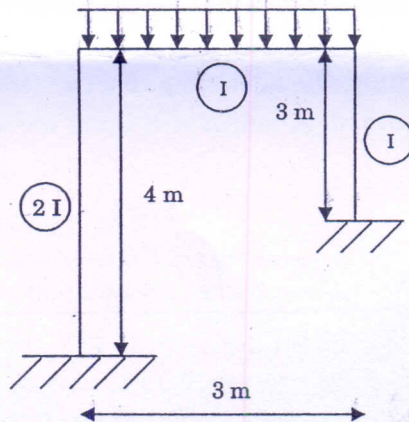


13. Plot B.M.D. and deflected shape of the following structure using slope deflection method.

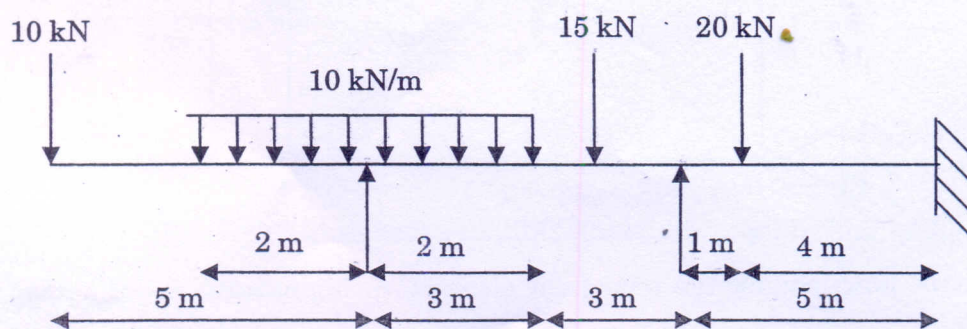


Or

14. Analyze the portal frame loaded as shown in the Fig. below. Use moment distribution and sketch B.M.D. and S.F.D.



15. Analyze the continuous beam shown by direct stiffness method. Take EI as constant.



Or

Turn over

