CBCS SCHEME

USN | | | | | | | | | | |

17CV52

Fifth Semester B.E. Degree Examination, Dec.2019/Jan.2020
Analysis of Indeterminate Structures

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

Module-1

1 Analyse the beam completely by slope deflection method relative to support A support B sinks by 1mm and support C rises by 0.5 mm. Take EI = 30000 kN-m2. Refer Fig.Q1. Draw BMD, SFD and Elastic curve.

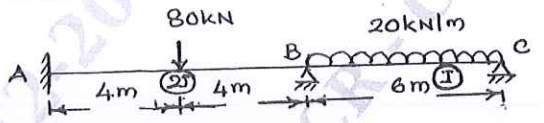

Fig.Q1 **(20 Marks)**

OR

2 Analyse the given frame by slope deflection method. Draw SFD, BMD and elastic curve. Refer Fig.Q2.

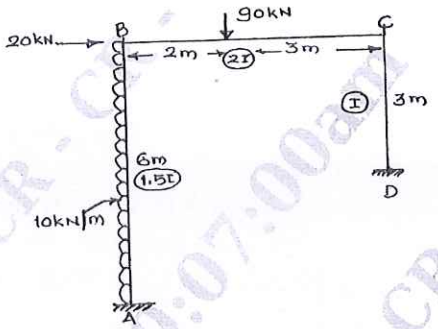

Fig.Q2 **(20 Marks)**

Module-2

3 Analyse the beam shown in Fig.Q3 by moment distribution method. Draw BMD, SFD and elastic curve.

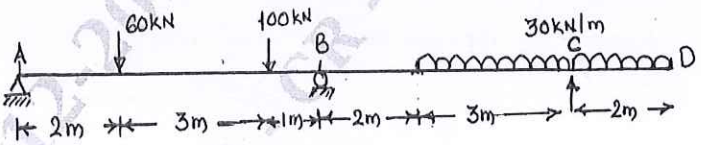

Fig.Q3 **(20 Marks)**

OR

4 Analyse the frame by moment distribution method. Draw BMD, SFD and elastic curve. Refer Fig.Q4.

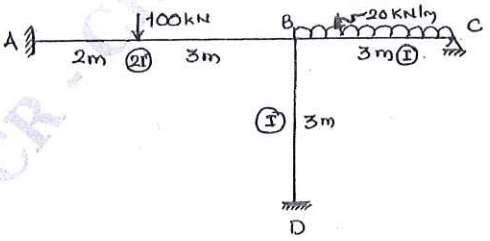

Fig.Q4 **(20 Marks)**

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Module-3

5 Analyse the three span continuous beam shown in Fig.Q5 by using Kani's method. Draw BMD, SFD and elastic curve.

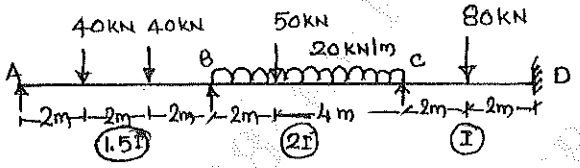

Fig.Q5 **(20 Marks)**

OR

6 Analyse the portal frames shown in Fig.Q6 by using Kani's method. Draw BMD, SFD and elastic curve.

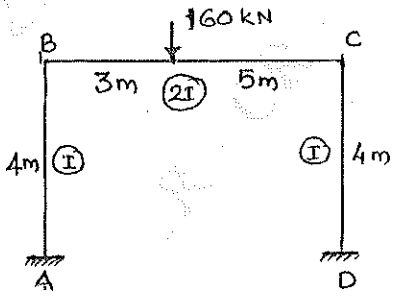

Fig.Q6 **(20 Marks)**

Module-4

7 Analyse the continuous beam shown in Fig.Q7 by flexibility method using system approach. Support B sinks by 5 mm sketch BMD, SFD and elastic curve. Take EI = 15×10^3 kN-m^2.

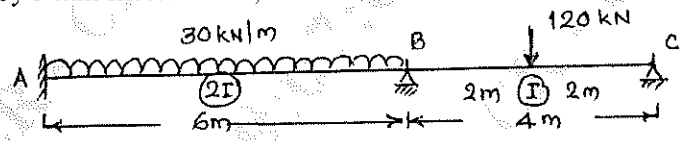

Fig.Q7 **(20 Marks)**

OR

8 Analyse the pin jointed plane truss shown in Fig.Q8 by using flexibility matrix method. Assume $\frac{L}{AE}$ for each member = 0.025 mm/kN. Tabulate the member forces.

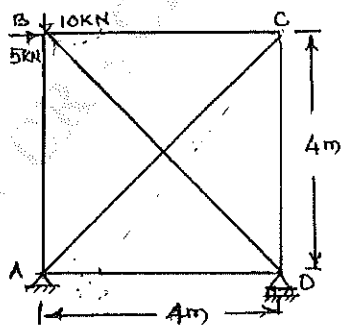

Fig.Q8 **(20 Marks)**

Module-5

9 Analyse the frame shown in Fig.Q9 by stiffness matrix method and draw BMD, SFD and Elastic curve. Assume EI is constant throughout.

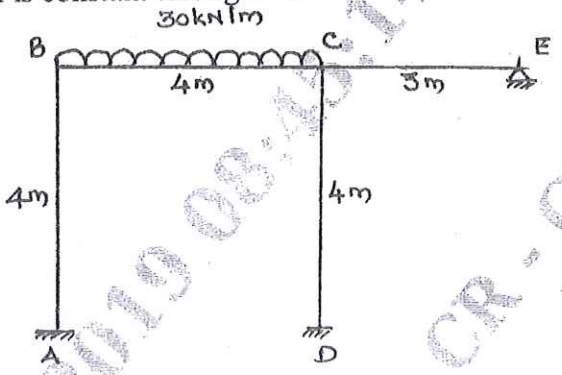

Fig.Q9 **(20 Marks)**

OR

10 Analyse the continuous beam shown in Fig.Q10 by using stiffness matrix method.

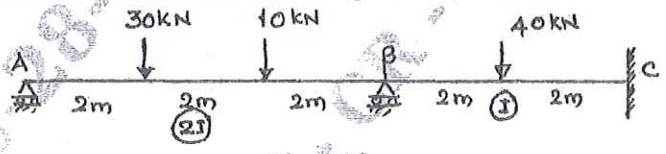

Fig.Q10 **(20 Marks)**

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