Code No: RT31012 **R13** SET - 1

III B. Tech I Semester Supplementary Examinations, May - 2016

STRUCTURAL ANALYSIS – II

(Civil Engineering)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1 a) Explain about Eddy's Theorem. [4M]

b) State the assumptions in Portal method. [3M]

c) What are the important characteristics of a cable? [3M]

d) What is distribution theorem? [4M]

e) What is the moment generated when any support sinks by an amount of δ in any fixed beam of span L and flexural rigidity EI? [4M]

f) Differentiate between Degree of static and kinematic indeterminacies. [4M]

PART -B

2 Calculate the reactions and Maximum Bending Moment for the given three hinged parabolic arch as shown in fig.1 [16M]

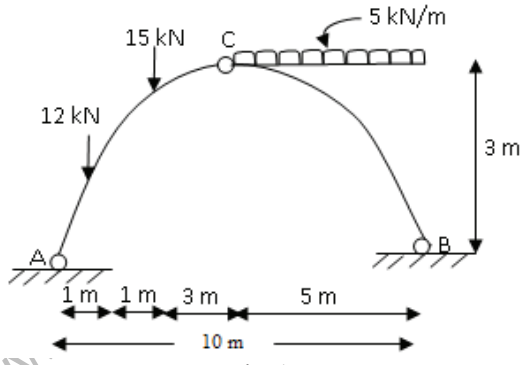

Fig.1

3 Analyse the frame shown in fig.2 by using Portal method. [16M]

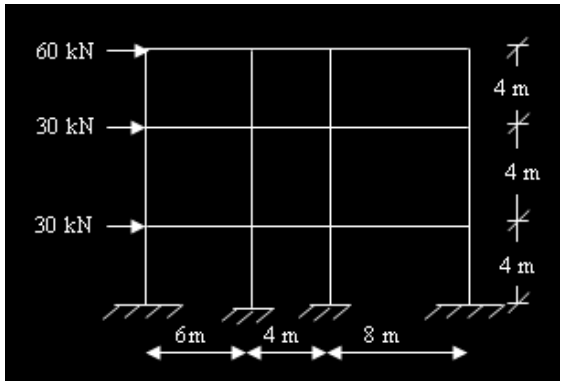

Fig.2

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4 A suspension bridge of 120 m spam has two girders supported by two cables having a central dip of 12 m. The road way has a width of 6 m. The dead load on the bridge is 5kN/m^2 while the live load is 10 kN/m^2 which acts on the left half of the span. Determine the shear force and bending moment in the girder at 30 m from the left end. Find also the maximum tension in the cable for the position of live load. [16M]

5 Draw BMD for the Continuous beam shown in fig.3 by using Moment Distribution method. [16M]

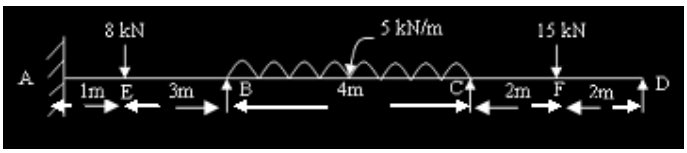

Fig.3

6 Analyse the frame shown in fig.4 by using Kani's method. [16M]

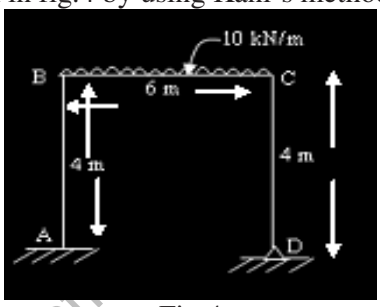

Fig.4

7 Draw BMD for the beam shown in fig.5 by using Flexibility method. [16M]

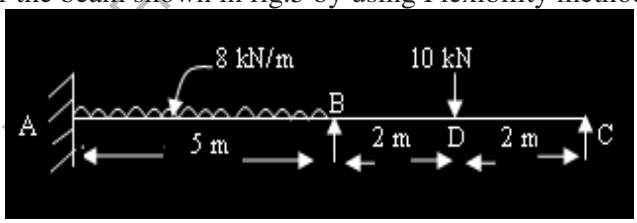

Fig.5

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