GIET MAIN CAMPUS AUTONOMOUS,
GUNUPUR - 765022

Registration No: | | | | | | | | | | |

M.TECH

Total Number of Pages : 2

M.TECH 1ST SEMESTER SUPPLE EXAMINATIONS, DECEMBER 2018

MATRIX METHODS OF ANALYSIS OF STRUCTURES

Branch: SE, Subject Code:MSEPC1030

(Regulations 2017)

Time: 3 Hours **Max Marks : 70** **Question Code: SD18002051**

PART-A (10 X 2=20 Marks)

1. Answer the following questions.

(a) What is the advantage of matrix analysis over classical methods of structural analysis?
(b) Differentiate between displacement and deformation.
(c) State different levels of structural analysis.
(d) What do you mean by equivalent joint load in matrix analysis?
(e) Define equivalent joint load in matrix method of analysis.
(f) What are the levels of structural analysis?
(g) What do you mean by response of a structure?
(h) State reciprocal theorem.
(i)What do you understand by the degree of various type of indeterminacy?
(j)What is unit load method?

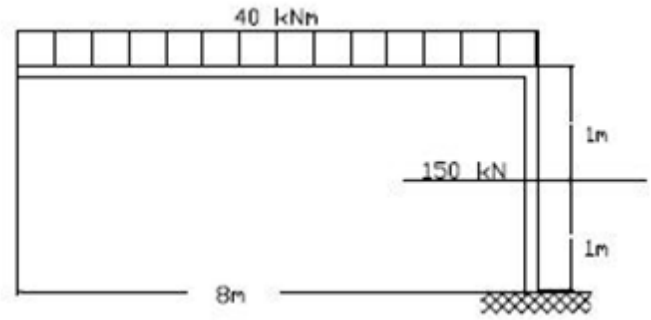
PART-B (5 X 10=50 Marks)

Answer any five questions from the following.

2. (a) Analyze the beam if support B sinks by 30 mm. [5]

(b) Draw shear force and bending moment diagram. [5]

3. (a) Neglecting axial deformations, analyze the frame as shown in _g. EI = constant. [5]



(b) Draw Shear Force Diagram and Bending Moment Diagram. [5]

4. (a) Calculate the degree of various type of indeterminacy. [5]
(b) Discuss on Principle of superposition. [5]

5. (a) Analyze the continuous beam having three spans each of 3m length by stiffness matrix method. Extreme ends are fixed and intermediate supports are roller supports. The beam carries 20 kN concentrated loads at mid-point of each span. EI = constant. [5]
   (b) Draw Shear Force Diagram and Bending Moment Diagram. [5]

6. (a) Discuss on Unit load method. [5]
   (b) State the difference between Static and kinematic indeterminacies. [5]

7. (a) Compare force method and displacement method of analysis. [5]
   (b) What do you mean by flexibility method of matrix analysis? [5]

8. Write Short notes on any two of the following
   (a) Virtual work. [5]
   (b) Assumption on analysis of pin jointed frame. [5]

==0==