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Reg. No. ☐☐☐☐☐☐☐☐☐☐

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY::PUTTUR
(AUTONOMOUS)
M.Tech I year II Semester Regular Examinations June 2019
STRUCTURAL DYNAMICS
(Structural Engineering)

Time: 3 hours   Max. Marks: 60
(Answer all Five Units 5×12=60 Marks)

UNIT I

1 **a** Explain about lumped mass and Continuous mass system.   6M
   b Derive the Equation of motion for Undamped single degree of freedom system with forced   6M
      vibration.

OR

2 Briefly explain fundamental objectives of dynamic analysis with example   12M

UNIT II

3 Determine the response of SDOF system subjected to triangle pulse load.   12M
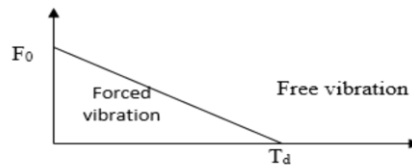
OR

4 Derive the equation for DMF for undamped single degree of freedom system with forced   12M
   vibration.

UNIT III

5 Derive the equation of motion for two degree of freedom system in matrix form and also   12M
   derive the solution for the equation.

OR

6 Draw the mode shapes for given problem   12M
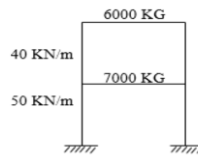
UNIT IV

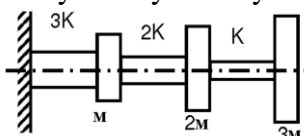7 Derive the equation of motion for beam subjected to uniformly distributed load.   12M

OR

8 Derive the natural frequency and mode shapes for uniform beam having one end fixed.   12M

UNIT V

9 Explain step by step procedure of Holzer method. Derive fundamental natural frequencies   12M
   and mode shapes.

OR

10 Calculate approximate natural frequency of a system by using Transfer matrix method.   12M

END