

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2024

M.Tech-I Semester (SE)

COURSE CODE(CREDITS):11MIWCE112(3)

MAX. MARKS: 15

COURSE NAME: STRUCTURAL DYNAMICS

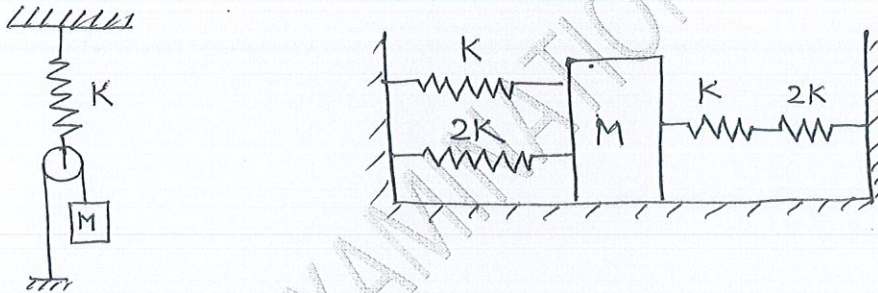
COURSE INSTRUCTORS: Mr. Chandra Pal Gautam

MAX. TIME: 1 Hour

*Note: (a) All questions are compulsory. (b) Marks are indicated against each question in square brackets. (c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems*

Q.1 Derive the equation of displacement, velocity and acceleration for simple harmonic motion and draw the force, acceleration and velocity graph with respect to x. [5]

Q.2 Find the time period of the given spring mass system. [2+2 = 4]



Q.3 (i) Mention different stages used in solving a structural dynamics problem.

(ii) Derive the general equation of motion for a structure using D' Alembert principle. [1+2 = 3]

Q.4 Derive the equation of motion for the system given below, in which a solid bar of mass M is connected with 3 springs. [3]

