

NATIONAL INSTITUTE OF TECHNOLOGY DURGAPUR**Even Semester Mid-term Examination, 2022-23****Course Code:**CEO440

Full Marks: 25

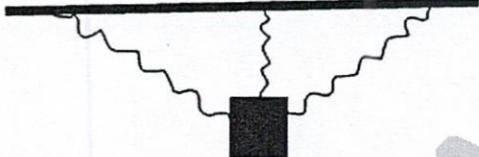
Course Name:Introduction to Earthquake Engg.

Time: 90 Minutes

Question Paper No.:-----

Instructions: Answer ALL

Materials to be supplied: Graph paper shall be supplied, if required.

| Question No. | Body of the Question | Marks | Mapped CO |
|--------------|--|-------|-----------|
| 1 | <p>Write the free downward vibration differential equation for the spring-mass system shown in the figure below, with equal 'k'. Two springs making equal angle 'α' with the horizontal and one vertical. Take mass of the block 'M'. Hence, find the natural frequency of the vibratory system.</p>  | 7.5 | CO1 |
| 2 | What is soft storey building? Write its remedial measure. | 7.5 | CO2 |
| 3 | <p>Write short note (any two)</p> <ol style="list-style-type: none"> Earthquake Intensity and magnitude Pangaea and Plate tectonics Locating Earthquake epicenter | 10 | CO3 |

Course Outcomes

CO1: APPLYING ENGG. MATHEMATICS IN SOLVING VIBRATION PROBLEM
 CO2: ABILITY TO DESIGN A BUILDING EARTHQUAKE RESISTANT
 CO3: LEARN BASIC OF EARTHQUAKE ENGINEERING
 CO4: ABILITY TO MANAGE DISASTER