BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(MID SEMESTER EXAMINATION SP/2025)

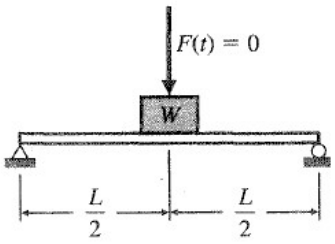
CLASS: BTECH **SEMESTER : VI/ADD**
BRANCH: CIVIL **SESSION : SP/2025**

SUBJECT: CE210 EARTHQUAKE ENGINEERING AND DISASTER MANAGEMENT

TIME: 02 Hours **FULL MARKS: 25**

INSTRUCTIONS:
1. The question paper contains 5 questions each of 5 marks and total 25 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.

			CO	BL
Q.1(a)	Define disaster and hazard.	[2]	CO4	Remember
Q.1(b)	Compare hazard and vulnerability using suitable flood based examples.	[3]	CO4	Remember
Q.2(a)	Who are the nodal officers at various levels for disaster management control.	[2]	CO4	Remember
Q.2(b)	Write short notes on any prominent Disaster	[3]	CO4	Remember
Q.3(a)	Compare static and dynamic loads with suitable examples.	[2]	CO2	Understand
Q.3(b)	How is dynamic analysis different from static analysis? List two key differences. Also, state D' Alembert's Principal.	[3]	CO2	Understand
Q.4	A simply supported beam carrying a concentrated load 'W' at its midspan is shown. The mass of the beam is considered negligible compared to the concentrated load, and the effects of damping are neglected. Determine the equation of motion for the system and Calculate its natural circular frequency from the below data: W = 44.5 kN, I = 8.3 x 10^{-6} m^4, E = 200 GPa, L = 6.0 m	[5]	CO1	Apply Analyze



Q.5(a)	What are the four virtues of earthquake resistant buildings?	[2]	CO3	Remember
Q.5(b)	Write short notes on the following: (i) Elastic Rebound Theory (ii) Earth surface	[3]	CO3	Remember

::::::28/02/2025::::::E