

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

**CLASS: B.ARCH
BRANCH: ARCHITECTURE**

**SEMESTER : VIIth
SESSION : MO/25**

SUBJECT: AR404 DISASTER MANAGEMENT AND RESILIENT STRUCTURES

TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data handbook/Graph paper etc. to be supplied to the candidates in the examination hall.
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Q.1(a)	Explain the disaster crunch model in the context of urbanisation in Indian cities.	[5] 1	1,4
Q.1(b)	Differentiate between vulnerability, hazard and disaster with the help of examples.	[5] 1	2,3
Q.2(a)	Suggest site planning and building form development strategies for designing an earthquake-resistant building with the help of neat sketches.	[5] 4	3,5
Q.2(b)	Discuss strategies for seismic protection of a building's non-structural elements.	[5] 2	2,5
Q.3(a)	Explain the types of roof damage due to wind and the effects of roof architecture on uplift forces.	[5] 3	3
Q.3(b)	Discuss the Indian Classification of Cyclone Disturbances in the North Indian Ocean (Bay of Bengal and Arabian Sea) by explaining their wind speed range.	[5] 5	4
Q.4(a)	Explain the Inundation Intensity Scale and discuss the main mechanisms of flood damage to buildings by inundation.	[5] 3	3,5
Q.4(b)	Differentiate between pluvial, fluvial and flash floods. Discuss byelaws for buildings in Flood Prone Areas, considering a return period of 100 years.	[5] 5	2,4
Q.5(a)	Draw a neat hierarchical sketch of disaster management governance at the Central, State, District and Local level administration.	[5] 2	5
Q.5(b)	Discuss the salient features of the Hyogo Framework for Action and the Sendai Framework for Disaster Risk Reduction.	[5] 3	6

:::24/11/2025:::M