

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

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

**SEMESTER : VII
SESSION : MO/2022**

SUBJECT: AR404 DISASTER MANAGEMENT & RESILIENT STRUCTURES

TIME: 3:00 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 hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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- Q.1(a) Distinguish between structural measures and non-structural measures. [2]
Q.1(b) Name four most prominent virtues of earthquake resistant buildings. [3]
Q.1(c) Give some examples to discuss the phenomenon that environmental degradation promotes disaster. [5]
- Q.2(a) State seismic design philosophy of buildings. [2]
Q.2(b) Discuss byelaws for buildings in Flood Prone Areas. [3]
Q.2(c) Draw a neat hierarchical sketch of disaster management governance at Central, State. District and local level administration. [5]
- Q.3(a) Distinguish between magnitude and intensity of earthquake. [2]
Q.3(b) Arrange the following events in a chronological order. [3]
1. The Johannesburg Plan of Action
2. First World Conference on Disaster Reduction and the Yokohama Strategy for a Safer World
3. International Decade for Natural Disaster Reduction
4. United Nations Conference on Sustainable Development - Rio+20
5. Second World Conference on Disaster Reduction and the Hyogo Framework for Action
6. Third United Nations World Conference on Disaster Risk Reduction and the Sendai Framework for Disaster Risk Reduction
- Q.3(c) Distinguish between the responsibilities of NDMA and SDMA. [5]
- Q.4(a) Distinguish between Force-sensitive NSE and displacement-sensitive NSE. [2]
Q.4(b) How climate change fuels a greater number of tropical cyclones. [3]
Q.4(c) Draw a neat sketch to highlight design and detailing faults causing failure of bricks or random stones laid in mud mortar due to heavy rain or flood. [5]
- Q.5 Draw construction details/sketches for cyclone resistant housing: [2 x 5]
a. Connection of roof frame to wall frame
b. Fixing of corrugated sheeting to purlin with bolts
c. Anchoring of wooden post using cross pieces
d. Typical roof bracings for industrial buildings
e. Group planning of buildings (group layout of individual buildings on a site).

:::24/11/2022:::M