**INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR**
**Mid - Autumn Semester Examination**
**2011-12**

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| **Date** | : | 25th November 2011 (FN) | **Time** | : | 3 hrs |
| **Subject** | : | Disaster Resistant Building and Management | **Total Marks** | : | 100 |
| **Subject No.** | : | AR52007 | **No. of Students** | : | 22 |
| **Course** | : | 5th year B. Arch | | | |
| **Department** | : | Architecture & Regional Planning | | | |

**Instruction** : Answer any **FOUR** questions, from the following, supported with appropriate Graphic illustrations

Q 1 Discuss various techniques of testing the structural health of the building in the context of seismic forces. Illustrate various retrofitting techniques applicable for the masonry and RCC building components. [25]

Q.2 Enumerate various items of Site analysis check-list and their significance in location of buildings in terms of natural hazards. [25]

Q.3 Identify the non-structural elements and appendages in buildings of different types, and highlight their degree of vulnerability and damage during the seismic occurrence. Indicate different solutions, as effective measures, associated with appendages to minimize level of damages during disaster occurrences. [25]

Q4. Enumerate the nature of damages likely to cause and illustrate graphically various details as preventive measures against seismic forces for any ONE of the following building types. [25]

a) Non-engineered RCC structures.
b) Earthen and stone structures

Q5. Discuss, with appropriate examples and illustrations, the terms associated with a) 'Concavity and convexity of building form', and b) Re-entrant corners' and their significance in seismic conditions. [25]

Q.6 Write short notes on the following with suitable examples. [12.5 x 2 = 25]

a) Short column effect and Pounding effect.
b) Natural hazards and Hazards due to human involvement.

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