

Q.P. Code : 620100

(3 Hours)

[Total Marks : 100

- N.B. :** (1) Question No. 1 is **compulsory**
 (2) Answer any **four** questions out of remaining **six**
 (3) Attempt sub questions in order
 (4) **Figures** to the right indicate **full** marks.

1. a) Explain in detail the design concepts involved in as well as the construction materials used for the safe construction of facilities in case of earthquakes and cyclones. Also discuss the fire resistant facilities that need to be essentially provided in a building/industry. **10**
- b) Discuss the framework for disaster management in India. **10**
2. a) Describe the inclusions of the National Disaster Management Act of 2005. **8**
- b) Elaborate the guidelines laid down by NEMA for disaster management in India. **6**
- c) Explain the sphere project. **6**
3. a) Explain the role of various local/state/national government and NGOs (with special emphasis on plans of Redcross society & Red R) for Disaster Management in India. **10**
- b) Discuss the impact of disasters on constructed facilities. Also comment on the disruption caused to construction activities due to disasters? **10**
4. (a) Which type of disaster need more preparation w.r.t. civil engineering field in your view? Justify. **8**
- b) What do you understand by early warning system? In which disasters, are early warning systems are not possible? **5**
- c) Comment on radiation hazards. Also discuss chemical spills. **7**
5. a) What do you understand by liquefaction? In case of a landslide prone locality, is preventive retrofitting advisable or do the population needs to be migrated to some safer place. Comment your stance. **10**
- b) Explain in detail, vulnerability, with reference to Earthquake disaster. List down the preparatory measures for minimizing vulnerabilities related to Earthquake. **10**

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6. a) Industrialization is an essential component for the economic development of a country. However industrial disasters can have a significant social and economic impact. Explain this statement with suitable examples. **10**
- b) Natural ecosystems act as a first line of defence against natural disasters. Explain this statement with suitable example. Also justify can natural ecosystems act as a line of defence against manmade disasters **10**
7. Define the following terms (**any 10**) with respect to disaster management **20**
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|---------------------|-----------------------------------|
| (i) Capacity | (ii) Hazard |
| (iii) Vulnerability | (iv) Disaster |
| (v) Risk | (vi) response |
| (vii) relief | (viii) rehabilitation |
| (ix) reconstruction | (x) development |
| (xi) mitigation | (xii) preparedness and prevention |

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