

TRIBHUVAN UNIVERSITY  
INSTITUTE OF ENGINEERING  
**Examination Control Division**  
2081 Bhadra

| Exam.       | Regular |            |        |
|-------------|---------|------------|--------|
| Level       | BE      | Full Marks | 80     |
| Programme   | BCE     | Pass Marks | 32     |
| Year / Part | IV / I  | Time       | 3 hrs. |

**Subject: - Earth Hazard (Elective I) (CE72507)**

- ✓ Candidates are required to give their answers in their own words as far as practicable.
- ✓ Attempt **All** questions.
- ✓ The figures in the margin indicate **Full Marks**.
- ✓ Assume suitable data if necessary.



1. List the geomorphological subdivision of Himalaya with brief account on specific natural hazards occurring on those regions. [8]
2. Describe stress in rock mass? Why is maximum horizontal rock stress in Himalaya is basically oriented in N-S direction? [2+6]
3. How can geological features like joints, fault and fold be source for different hazards? [4]
4. a) Explain different types of erosion triggered by water. Enumerate the cause and effect of a flood hazard. [2+4]  
b) Define sediment. Explain different techniques involved in the sampling of the sediments. [2+4]
5. In an area with earthquake records shown below, find the probability of at least one earthquake greater than Mw 5.5 occurring in a 100-year period. [8]
6. What do you think the challenges in management of landslide hazard in the context of Nepal? Discuss about some factors affecting slope stability. [6+4]
7. What is bioengineering technique? How can it help stabilize a failing slope? [5+5]
8. What information regarding natural hazards are required for deciding site selection for different components of a hydropower project? [4]
9. Government of Nepal has decided for developing planned cities in different parts of Lesser Himalayan region. How can different hazard assessment results be used in this endeavour? [8]
10. Describe the general steps taken for a landslide hazard assessment. [8]

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