

KATHMANDU UNIVERSITY
End Semester Examination
January/February 2024

Level : B.Sc.
Year : III
Time : 2 hrs. 30mins.

26 JAN 2024

Course : ESEE 305
Semester : I
F. M. : 55

SECTION "C"

[3Q. × 7 = 21 marks]

Attempt *THREE* questions.

1. Suggest three engineering/non-engineering solutions in detail that could be done in Banepa area to decrease the risk from the Punyawati river flood. Discuss on effective mitigation measures.
2. "Earthquake impact can be reduced through AI technology," explore innovative ideas.
3. Discuss three engineering /non-engineering solutions that can prevent a wildfire mostly.
4. If you were working as Disaster Manager for drought at Terai region of Nepal, then what would be your strategies on the coming dry season?

SECTION "D"

5. Write short note on (*ANY FOUR*) [4 Q. × 4 = 16 marks]
 - a. Insurance as risk transfer
 - b. Earthquake disasters in Nepal
 - c. Causes of Wildfire
 - d. Public Awareness as a tool of flood hazard management
 - e. Role of information technology in disaster management
6. Differentiate between (*ANY FOUR*) [4 Q. × 3 = 12 marks]
 - a. Recovery and Reconstruction
 - b. Real-time weather data and Normal-time weather Data
 - c. Vulnerability and Risk
 - d. Lithospheric hazards and Atmospheric hazards
 - e. Epicenter and Hypocenter
7. Discuss in the following terms (*ANY THREE*) [3 Q. × 2 = 6 marks]
 - a. Cosmogenic hazards
 - b. Early warning
 - c. Tsunami
 - d. Data sharing

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Time: 30 mins.

F. M. : 20

Registration No.:

Date :

SECTION "A"

[20Q. × 0.5 = 10 marks]

Choose and encircle the most appropriate answers from the given choices.

- The "Richter scale" measures the magnitude of:
a. Hurricanes b. Earthquakes c. Tornadoes d. Volcanic eruptions
- _____ are like small tsunamis.
a. Sesiches b. Seiches c. Schiie d. Shichite
- By one estimate, about _____ extraterrestrial bodies in near-Earth orbits have the potential for a significant impact.
a. 10 million b. 20 million c. 30 million d. 40 million
- _____ are because of frequently arthropods, such as mosquitoes, ticks, flies, fleas and lice.
a. Water borne disease b. Vector borne disease
c. Sanitation d. Crowding
- Generally, meteoroid either explode in an aerial burst in the atmosphere at an altitude between -12 and _____ km, or collide with earth.
a. 20 b. 30 c. 40 d. 50
- _____ is degree of loss (range from 0%, no damage to 100%, total loss).
a. Environmental hazard b. Vulnerability
c. Risk d. Hazard
- Which natural hazard is associated with pyroclastic flows and lahars?
a. Earthquake b. Volcanic eruption
c. Tsunami d. Hurricane
- The process of reinforcing buildings and infrastructure to withstand earthquakes is known as:
a. Retrofitting b. Landscaping c. Sequestering d. Ablation
- What is the primary purpose of land-use planning in the context of disaster management?
a. Minimizing earthquake risk b. Preventing hurricanes
c. Reducing flood damage d. Mitigating volcanic eruptions
- Which type of flood occurs when there is a sudden release of water from a glacier or ice cap?
a. Flash flood b. Riverine flood c. Coastal flood d. GLOF

11. Which phase of disaster management involves actions taken to minimize the impact of a hazard on people and property?
a. Preparedness b. Mitigation c. Response d. Recovery
12. A _____ is a depression or hole in the ground caused by some form of collapse of the surface layer.
a. Sinkerhole b. Sinkhole c. Holesinks d. Holersink
13. The "cone of depression" is a term associated with:
a. Volcanic eruptions b. Groundwater depletion
c. Coastal erosion d. Earthquakes
14. What is the main purpose of a disaster recovery plan?
a. Minimizing earthquake risk b. Reducing hurricane intensity
c. Restoring normalcy after a disaster d. Predicting tornado paths
15. The term "fault" is most closely associated with:
a. Hurricanes b. Tornadoes c. Earthquakes d. Floods
16. Which of the following is a key principle of sustainable disaster recovery?
a. Rapid reconstruction without environmental considerations
b. Social inequality in resource distribution
c. Integration of local knowledge and community participation
d. Ignoring the needs of vulnerable populations
17. What is the main purpose of a seismic hazard map?
a. Predicting seismic paths b. Identifying earthquake characteristics
c. Assessing earthquake risk d. Monitoring earthquake activity
18. Which of the following is a human-induced hazard?
a. Volcanic eruption b. Impact
c. Nuclear accident d. Tsunami
19. What is the primary cause of tsunamis?
a. Surface volcanic eruptions b. Underwater landslides
c. Storm surges d. High-intensity winds
20. Which of the following is an example of a geological hazard?
a. Hurricane b. Flood c. Earthquake d. Tornado

SECTION "B"

[20 Q. × 0.5 = 10 marks]

Mark "T" for true and "F" for false.

21. In disaster management, the term "Vulnerability" refers to the Susceptibility or Predisposition of a community to a hazard. []
22. Tornado is a sudden and intense shaking of the ground caused by the movement of tectonic plates. []

23. The process of reducing the risk and impact of disasters before they occur is known as Mitigation. []
24. Landslide is the rapid downslope movement of rock, soil, and debris under the influence of gravity. []
25. The recovery phase of disaster management involves the immediate actions taken to save lives and property during or just after a disaster. []
26. Earthquake is a sudden release of energy in the Earth's crust that creates tsunami waves. []
27. The focus is a circular area of the Earth's surface around a seismic source where the intensity of shaking is the greatest. []
28. The process of post information the occurrence of a hazard and informing the public to take preventive actions is known as Early Warning. []
29. The Hypocenter is the point on the Earth's surface directly above the earthquake's point of origin. []
30. Volcano is a sudden and violent oceanic disturbance, often caused by an undersea earthquake. []
31. The Disaster Management cycle consists of mitigation, preparedness, response, and recovery. []
32. The Modified Mercalli Intensity (MMI) scale measures the Impact of ground shaking during a Volcano. []
33. Meteor is frozen water and/or carbon dioxide plus small rock fragments and dust like a "dirty snowball" core is ice surrounded by rock particles. []
34. Resilience is the process by which people or communities adapt to and recover from disaster impacts. []
35. The term "Disaster Risk Reduction" (DRR) focuses on enhancing the impact of disasters. []
36. The process of identifying and analyzing the potential impact of hazards on people, property, and the environment is known as seismic assessment. []
37. The PTCC is able to alert countries several hours before the tsunami strikes. []
38. The Fault is the boundary between two different tectonic plates. []
39. The reconstruction phase of disaster management involves activities such as training, planning, and public awareness. []
40. A Lahar is a channelized flow of fast-moving and highly destructive mudflow of river. []

