

[Total No. of Questions - 10] [Total No. of Printed Pages - 4]
(2125)

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B. Tech 1st Semester Examination
Disaster Management & Environmental Science (NS)
HS-101

Time : 3 Hours

Max. Marks : 100

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Candidates are required to attempt five questions in all selecting one question from each of the sections A, B, C, and D of the question paper and all the subparts of the questions in section E. Use of non-programmable calculator is allowed.

SECTION - A

1. What do you mean by disaster? What are the main differences between natural disaster and natural hazard? Discuss different categories of vulnerability when the society is exposed to natural hazards. (20)
2. (a) What are cyclones? Write down its general characteristics and discuss different stages of cyclones. (10)
- (b) What is Tsunami? Discuss its cause, characteristics and predictability. (10)

SECTION - B

3. What are the different efforts undertaken worldwide to mitigate disaster? Why developing countries are more prone to disaster? (20)

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4. Explain different steps for disaster management practices. Highlight some of your views on the current status of disaster management in our country. (20)

SECTION - C

5. (a) Briefly describe how can you control water pollution in the following cases:
 - (i) an effluent pipe from a factory going into a stream;
 - (ii) a farmer's field on a slope next to a stream. (10)
- (b) List any three human activities that increase the risk of flood. Discuss different method of flood control. (10)
6. What are the major indoor and outdoor air pollutants in many developing countries? How can we reduce indoor and outdoor air pollution? (20)

SECTION - D

7. Write down three types of chemical reaction ($h\nu$, OH, N_2O) for ozone depletion in stratosphere. Why ozone hole over Antarctica is more severe than Arctic part? Give examples of five stratospheric halogen gases which are most reactive after chemical conversion. (20)
8. What major sources of energy do we use? Write down five points each for advantages and disadvantages of fossil fuels. List three points about possible future energy paths for the world. List five major strategies for making the transition to a more sustainable energy future. (20)

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SECTION - E

9. Fill in the blanks with single correct option:

- (a) Seismic Zone IV means _____ zone.
(No Risk/ Moderate Risk/High Risk/Very High Risk).
- (b) The Air (Prevention and Control of Pollution) Act, 1981 was first amended in the year _____ (1986/1987/1988/1990).
- (c) The instrument that converts solar energy into electrical energy by solar cells is _____ (Photovoltaic/AC generator/DC generator/Both AC and DC generator)
- (d) Which wavelength of UV light of sunlight combine with ozone molecule _____ (UV-A/UV-B/UV-C/UV-D)
- (e) _____ is not a greenhouse gas ($\text{CH}_4/\text{CO}_2/\text{N}_2\text{O}/\text{SO}_2$)
- (f) Maximum permissible noise level according to noise pollution rules 2000 is _____ (75 dB/65 dB/55 dB/45 dB).
- (g) Most important cause of soil pollution is _____ (iron junks/glass junks /detergents/ plastics)
- (h) Which of the following has a positive human influence on the environment _____ (Deforestation/Pollution/Overpopulation/Conservation)
- (i) Effective hazard management will largely rely on _____ (Volunteers/Government agencies/Emergency responses/Pre-disaster planning).
- (j) The majority of tsunamis take place in _____ (Earthquake zone/the Pacific Ocean/the Indian Ocean/the coast line of Indonesia). (1×10=10)

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10. Write whether the statements are True (T) or False (F):

- (a) The transitional period and the reconstruction period take place during the post-disaster phase.
- (b) Flash Floods may result from dam failures or cloudbursts
- (c) An area's susceptibility to desertification is a function of climatic cycles.
- (d) The major human made cause of deforestation is farming.
- (e) Current international warning systems issue a "cyclone warning" when a cyclone could reach land within 24 hours.
- (f) Mosses are indicators of soil pollution.
- (g) In a polluted environment, the maximum pollutant will occur in tertiary consumers,
- (h) Frequency of sound is measured in Hertz.
- (i) Acid rain has $\text{pH} \leq 5.6$
- (j) Vienna convention for the protection of ozone layer was adopted in 2000. (1×10=10)