

Tribhuvan University
Institute of Science & Technology
Environmental Science
M. Sc. Entrance Examination, 2082

Full Marks: 100

Pass Marks: 35

Time: 2 hours

The entrance examination will have altogether 100 multiple choice questions. The questions will cover the theoretical and practical courses of B. Sc. Environmental Science of the IOST, Tribhuvan University, viz. Introductory Environmental Science, Fundamentals of Environmental Science, Environmental Pollution and Management Tools, Environmental Resources and Biodiversity Conservation, and Pollution Monitoring and Control. Some questions of the elective courses (Ecological Restoration and Management, and Solid Waste Management), optional course (Urbanization and Sustainable Development), interdisciplinary course (Climate Change), Project Work (field and lab approaches) and contemporary environmental issues may also appear in the examination.

MODEL QUESTIONS (For the reference purpose, this template has only 25 questions)

Circle (O) the Correct Answer.

1. Which of the following is a secondary air pollutant?
 - a. Particulate matter
 - b. PAN
 - c. NO₂
 - d. NO₃

2. Methaemoglobinemia is caused by the contamination of drinking water due to:
 - a. Arsenic
 - b. Nitrate
 - c. Sulphur
 - d. Phosphorus

3. In mutualism:
 - a. Both species get harmed
 - b. Neither population affects the other
 - c. One species get benefitted and another species get harmed
 - d. Both species get benefitted and obligatory

4. High abundance of mayfly nymph is an indicative of:
 - a. Unpolluted freshwater environment
 - b. Polluted freshwater environment
 - c. Marine environment
 - d. Soil environment

5. Ratio of COD and BOD is:
 - a. Equal to 1
 - b. Less than 1
 - c. More than 1
 - d. None of above

6. Upper limit of the night time equivalent sound level for urban residential sector set by National Sound Quality Standard of Nepal, 2012 is:
 - a. 30 dB
 - b. 100 dB
 - c. 50 dB
 - d. 80 dB

7. High volume air sampler is usually used for determining the concentration of:
 - a. Nitrous oxide
 - b. Particulate matter
 - c. Sulfur dioxide
 - d. HCFCs

8. If $\text{Na}_2\text{S}_2\text{O}_3$ (0.025N) consumed during titration is 3 mL, DO content of water is:
(given: volume of content titrated = 50 mL, volume of BOD bottle after placing the stopper = 300 mL, volume of alkaline KI and MnSO_4 used = 4 mL).
 - a. 12.16
 - b. 6.10
 - c. 3.61
 - d. 0.00

9. GoN has been promoting biogas plants of different capacity 1-4 m³ plants under the following system.
 - a. Large biogas system
 - b. Mega biogas system
 - c. Household biogas system
 - d. Urban biogas system

10. Forest stand has only one species with 100 individuals. Shannon diversity for the forest stand will be:
 - a. 0
 - b. 1
 - c. 10
 - d. 100

11. A researcher was interested in study of the distribution of the millipedes in the forest floor of a maple-oak forest. Study on such type of distribution is the study on:
 - a. Trophic niche
 - b. Spatial niche
 - c. Hypervolume niche
 - d. All of the above

12. Wind energy is transferred to the rotor in:
- Blades
 - Shafts
 - Generator
 - Voltmeter
13. Unit for solar insolation is:
- kWh/m²/day
 - kWh
 - kW
 - W
14. Matrix which has 100 project activities on the horizontal axis, and about 88 environmental/social aspects on the vertical axis is:
- Simple matrix
 - Interaction matrix
 - Leopold matrix
 - Impact summary matrix
15. Which is the southernmost fault of Nepal:
- Main Frontal Thrust
 - Main Boundary Thrust
 - Main Central Thrust
 - South Tibetan Detachment System
16. Small streams flow rate can be measured with the following method:
- Bucket method
 - Float method
 - Weir method
 - All of the above
17. Which of the followings is an example of a mineral?
- Shale
 - Slate
 - Mica
 - Quartzite
18. In air, amount of water vapor is:
- Wind
 - Precipitation
 - Humidity
 - Temperature
19. Probability that a 'T' year frequency flood occurs in any given year:
- 1/T
 - 1/2T
 - log_eT
 - e^{-T}

20. Equipment used to measure the strike and dip of rock layers in the field is:
- Brunton Compass
 - Clinometer
 - Densimeter
 - Geological hammer
21. Scientific name of protected plant species 'Simal' is:
- Shorea robusta*
 - Shorea simalensis*
 - Bombax ceiba*
 - Bubalus ceiba*
22. Coriolis effect is related to:
- Earth's rotation
 - Process of cooling of ascending air
 - Infiltration and percolation in the unsaturated zone
 - Existing hydrostatic pressure at the water table
23. Distribution of rainfall intensity over time is:
- Hyetograph
 - Hydrograph
 - Psychrograph
 - Rain guage
24. Least porous soil among the following is:
- Loamy soil
 - Silty soil
 - Clayey soil
 - Peaty soil
25. When is World Environmental Day celebrated?
- June 1
 - June 5
 - March 5
 - February 5

ANSWER KEY

1. b	6. c	11. b	16. d	21. c
2. b	7. b	12. a	17. c	22. a
3. d	8. a	13. a	18. c	23. a
4. a	9. d	14. c	19. a	24. c
5. c	10. a	15. a	20. a	25. b