

**M.Sc. ZOOLOGY**  
**SECOND SEMESTER**  
**ECOLOGY & ENVIRONMENTAL SCIENCE**  
**MSZ -203**

( Use Separate Answer Scripts for Objective & Descriptive )

Duration:3 hrs.

Full Marks:70

( PART-A: Objective )

Time: 20 min.

Marks:20

*Choose the correct answer from the following:*

**1X20=20**

- Y-shaped energy flow model is the best applied because it explains-
  - Energy flows in grazing food chain
  - Energy flows in detritus food chain
  - Both i & ii
  - None of the above
- Deserts receive an average annual precipitation of -
  - <250 millimeters per year
  - 250-500 millimeters per year
  - >500 millimeters per year
  - None of the above
- Which one of the following is correct?
  - Wildlife (Protection) Act, 1972
  - Wildlife (protection) Act, 1972
  - Wild Life (protection) Act, 1972
  - None of the above
- In which year, the Forest (Conservation) Act was enacted in India?
  - 1987
  - 1988
  - 1989
  - None of the above
- How many types of forests are there in India?
  - Two
  - Three
  - Four
  - None of the above
- Which of the following is used to increase the shelf life of food?
  - Glazing agent
  - Antioxidants
  - Preservatives
  - Anticaking agents
- Arsenic in drinking water comes from \_\_\_\_
  - Laboratories
  - Fertilizers
  - Pesticides
  - Rainfall
- Vehicle exhausts and house paints release a toxic metal into the environment \_\_\_\_
  - Lead
  - Copper
  - Iron
  - Aluminium
- The heavy metals As, Cd, Cr, Cu, Pb are a risk to environment are sourced from \_\_\_\_
  - Polluted soils
  - Waste waters
  - Solid wastes
  - Domestic wastes

10. Mercury transforms to methylmercury and bioaccumulates within \_\_\_\_
  - a. Microorganisms
  - b. Insects
  - c. Fish
  - d. All the above
11. What is the permissible limit for disposal of Biochemical Oxygen demand for biomedical waste?
  - a. 10 mg/L
  - b. 20 mg/L
  - c. 30 mg/L
  - d. 40 mg/L
12. Which among these falls into category 4 for human anatomical parts as biomedical waste disposal and segregation?
  - a. Category 1
  - b. Category 2
  - c. Category 3
  - d. Category 4
13. The concept of Environment Impact Assessment was for the enacted by \_\_\_\_ in \_\_\_\_\_.
  - a. USSR, 1981
  - b. UK, 1974
  - c. INDIA, 1972
  - d. USA, 1969
14. For a developmental project like building of a dam to be finally formed and realised, the following alternative can be issued for EIA
  - a. No Action
  - b. Non Action
  - c. In Action
  - d. None of the above
15. Which among these representatives will not be considered for consultation and review of any EIA project?
  - a. Representative of Environment department
  - b. Local panchayat
  - c. District collector
  - d. At least 3 local citizens
16. Odum preferred to call ecological succession as
  - a. Development
  - b. Progression
  - c. Regression
  - d. None of the above
17. A stable population is indicated by a \_\_\_\_\_ pyramid.
  - a. Broad based
  - b. Bell shaped
  - c. Urn shaped
  - d. Inverted
18. A broad based pyramid of age can be represented by a \_\_\_\_\_ shaped curve.
  - a. J
  - b. S
  - c. Z
  - d. None of the above
19. A bell based pyramid of age can be represented by a \_\_\_\_\_ shaped curve.
  - a. J
  - b. S
  - c. Z
  - d. None of the above
20. The no light penetration zone of a deep pond is called -
  - a. Limnetic
  - b. Littoral
  - c. Profundal
  - d. None of the above

**( PART-B:Descriptive )**

Time : 2 hrs. 40 min.

Marks : 50

*[ Answer question no.1 & any four (4) from the rest ]*

1. What do you mean by energy flow in an ecosystem? Enumerate the different principles of energy flow in an ecosystem. Brief details about the different models of energy flow in the ecosystem. 2+2+6  
=10
2. What do you mean by primary and secondary productions? Write a note on the limits to primary and secondary productions. 6+4=10
3. Write a brief note on the waste water management practices maintained by municipal boards. 10
4. What is ocean acidification? Comment on the various measures to be envisaged for reducing the acidification and saving marine flora and fauna. 2+8=10
5. Discuss about the impact of human activity on nutrient cycles. With the help of labeled diagrams, describe the Nitrogen and Sulphur cycles. 4+3+3  
=10
6. Write an account on different types of food additives and contaminants. How do they affect human health from consumption? 7+3=10
7. What is a community? Explain the different attributes of a community. 2+8=10
8. What is succession? Write the general process of ecological succession. 2+8=10

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