MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

Paper Code : MCAN-E105A Environment and Ecology

UPID : 001611

Time Allotted : 3 Hours *Full Marks :70*

The Figures in the margin indicate full marks.
Candidate are required to give their answers in their own words as far as practicable

Group-A (Very Short Answer Type Question)

[1 x 10 = 10]

1. Answer any ten of the following :
   (I) Agenda 21 is related to _____
   (II) _____ is an example of artificial ecosystem?
   (III) _____ is not considered as ODS?
   (IV) Why should BOD test be performed at dark?
   (V) "Municipal Solid Waste" is hazardous. True or False?
   (VI) Define noise dose limit of a given noise level.
   (VII) Life on Mars does not exist because _____
   (VIII) State one cause cause of eutrophication.
   (IX) Why is plastics difficult to recycle?
   (X) What is the noise intensity for the noise level at zero dB?
   (XI) Tropical rainforest is found in
   (XII) The CFC number of C_2 HF_3 Cl _2 is

Group-B (Short Answer Type Question)

Answer any three of the following [5 x 3 = 15]

2. What is maximum sustainable yield (MSY)? Derive the expression of MSY using logistic growth model equation. [5]
3. Discuss the harmful effects of hydrocarbons on the environment. [5]
4. Draw the nitrogen cycle mentioning the bacteria active in different phases. [5]
5. What is food chain? State three important characteristics of it. Hence define food web. [5]
6. Why is secondary waste water treatment required after primary waste water treatment? Why is activated sludge treatment is much effective than the other processes of secondary waste water treatment? [5]

Group-C (Long Answer Type Question)

Answer any three of the following [15 x 3 = 45]

7. Discuss different stages of hydrological cycle. Define aquifer and classify it. Write mathematical expression of Darcy's law explaining each term. [6+5+4]
8. What is an ESP? Discuss its utility in controlling air pollution. Explain the principles of filter bag unit and cold chamber in exhaust air treatment. [7+8]
9. Explain ODS with examples. Define ODP. State the unit of ODP. Explain how CFC decreases the ozone concentration in the stratosphere. Write a short note on Montreal Protocol. [5+5+5]
10. (a) Discuss CO_2 cycle in the environment with a neat sketch. [5+5+5]
    (b) Discuss ecological pyramid with diagram.
    (c) Write down examples of different consumers levels in desert food chain.
11. (a) Explain the term NTLV. State its significance. State the condition where the term NTLV is used to define noise pollution level in a given area. [6+4+5]
    (b) In a given area two noise levels, 90 dB and 120 dB and are active. Calculate the intensity ratio of the two noise levels.
    (c) Calculate the average of the following noise levels
    70 dB, 58 dB, 62 dB, 80 dB, 49 dB, 76 dB.