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Paper Code : BCAN-102

ENVIRONMENTAL STUDIES

Time Allotted: 3 Hours   *Full Marks*: 70

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

Group – A

(Multiple Choice Type Questions)

1. Choose the correct alternative for *any ten* of the following: 1×10=10

    (i) Converting solid waste into new products by using resources contained in the discarded material is

      (a) Waste Management   (b) Reuse

      (c) Recycling   (d) Hazardous waste management

    (ii) Which among the following is decomposer in ecosystem?

      (a) Green Plant   (b) Animal

      (c) Bacteria   (d) Both (a) and (b)

    (iii) Which of the following is not a gaseous cycle?

      (a) Oxygen cycle   (b) Carbon dioxide cycle

      (c) Nitrogen cycle   (d) Phosphorus cycle

    (iv) Which of the following does not contain biomass?

      (a) Municipal Garbage   (b) Sewage

      (c) Metal   (d) Effluent

8482   **Turn Over**

(v) Noise-induced deafness is a kind of change —

    (a) Reversible   (b) Irreversible

    (c) None of these   (d) All of these

(vi) Edaphic factors of the eco-system are related to

    (a) Soil   (b) Water

    (c) Air   (d) All of these

(vii) An eco-system has

    (a) both structure and function.   (b) only structure.

    (c) only function.   (d) None of these

(viii) Hazardous waste should have characteristics such as

    (a) Reactivity   (b) Corrosivity

    (c) Toxicity   (d) All of these

(ix) Oxygen demanding waste is the

    (a) Inorganic pollutant   (b) Radioactive material

    (c) Organic material   (d) None of these

(x) Minamata disease is related to

    (a) Hg   (b) As

    (c) Pb   (d) Cd

(xi) The altitude range (km) of Ionosphere is

    (a) 0 to 11   (b) 50-85

    (c) 11-50   (d) 85-500

(xii) The temp range of troposphere is

    (a) -2 to -92°C   (b) 15 to -56°C

    (4) -56 to -2°C   (d) -92 to 1200°

Group – B

(Short Answer Type Questions)

Answer *any three* of the following.   5×3=15

2. What is Chemical Oxygen Demand (COD)? COD measurement is more scientific the BOD test. Explain. Why in the BOD experiment the final DO measurement should not be done after a very long time?   1+2+2=5

3. Write down the Phosphorous Cycle in nature with the help of a suitable block diagram.

4. (a) What do you mean by Eutrophication?

   (b) What do you mean by Superadiabatic and Subadiabatic Lapse Rate?   2+3=5

5. Discuss in detail the mechanism of Ozone Layer depletion. How Ozone Layer can be protected?   4+1=5

6. Briefly explain the activated sludge treatment process.

Group – C

(Long Answer Type Questions)

Answer *any three* of the following.   15×3=45

7. (a) What is smog?

   (b) What is the difference between Sulfurous Smog and photochemical smog?

   (c) How is PAN formed?

   (d) What are the effects of Smog on living organism?

   (e) What do you mean by Temperature Inversion?

   (f) What are the important classes of Inversion?   1+2+5+2+2+3=15

8. (a) What do you understand by Ecological Balance?

   (b) Though the total energy in the universe is constant but the energy is increasing everyday. Explain with the concept of energy flow in the ecosystem.

   (c) 'Population never grows exponentially for ever.' – Explain with suitable curve.

   (d) What do you mean by Tropic Level?

   (e) What is Biomagnification?   3+4+4+2+2=15

9. (a) What is Hydrosphere and Hydrological Cycle? Describe in brief the process of Hydrological Cycle.

(b) What are Heavy Metals? What are their Biochemical Effects?

(c) Write short notes on Aquifers. $(2+2+3)+(2+3)+3=15$

10. (a) Define noise pollution.

(b) Discuss its various sources.

(c) Suggest two methods of controlling the noise pollution.

(d) What is the Noise Threshold Limit Value?

(e) Calculate the intensity of 50 dB sounds. (given reference intensity – 10^{-12} Wm^{-2})

(f) What is the composition of Lithosphere?

(g) What are the different types of solid wastes? $1+2+2+2+3+3+2=15$

11. Write brief notes on any three of the following: $5\times3=15$

   (i) Cyclone Separator

  (ii) Ventury Scrubber

 (iii) Hydraulic Gradient

 (iv) Trickling filter

  (v) Hazardous waste management

 (vi) Incineration & land filling

(vii) Oxidation pond