B.Sc. Part–II Semester—III Examination

ENVIRONMENTAL SCIENCE

(Environmental Chemistry)

Time : Three Hours] [Maximum Marks : 80

Note :– All questions are compulsory and questions **2-7** carry equal marks.

1. (A) Fill in the blanks with appropriate words and rewrite the sentences :

(i) Proteins along with _____ forms the major structural component of the cell membrane. ½

(ii) Botulin is the _____ toxin. ½

(iii) Skin is made up of _____ proteins. ½

(iv) Oxygen and _____ are the energy exchange elements. ½

(B) Choose the correct alternatives from the given options :

(i) When DDT enters in human body it is :

(a) Easily water soluble (b) Stored in bones

(c) Not toxic (d) Fat soluble stored in fats ½

(ii) Which of the following is a simple protein ?

(a) Nucleioproteins (b) Globulin

(c) Glycoproteins (d) Lipoproteins ½

(iii) Which of the following is not the part of phase–I reactions during detoxification ?

(a) Hydrolysis (b) Oxidation

(c) Reduction (d) Conjugation ½

(iv) Which of the following is not a source non-renewable energy ?

(a) Coal (b) Petroleum

(c) Biomass (d) None of these ½

(C) Answer the following in **one** sentence :

(i) Define clinical toxicology. 1

(ii) What are hormones ? 1

(iii) Define OTEC. 1

(iv) What are trace elements ? 1

2. Explain in brief :

(a) Acid base reactions. 4

(b) Oxygen as a bioelement. 4

(c) Cu and Fe as trace elements. 4

OR

(d) Saturated hydrocarbons. 4

(e) Chemical equilibrium. 4

(f) Na and K as activators and inhibitors. 4

3. What are carbohydrates ? Give their classification. Describe the structure of glucose with its biological importance. 12

OR

Define enzymes. Give their classification. Describe with diagram mechanism of enzyme action. 12

4. Explain in brief :

(g) Scope of toxicology. 4

(h) Toxicants from food. 4

(i) Life cycle test as a chronic toxicity test. 4

OR

(j) Route of exposure of toxicants. 4

(k) Process of bioaccumulation. 4

(l) Acute toxicity test. 4

5. Describe route of exposure, mode of action and physiological effects of aldrin and BHC. 12

OR

What is detoxification ? Describe the detail mechanism of detoxification. 12

6. Explain in brief :

(m) Chemical structure of water. 4

(n) Analysis of Hg from water. 4

(o) Distribution of Pb in environment. 4

OR

(p) Physico-chemical properties of water. 4

(q) Analysis of Pb from water. 4

(r) Distribution of Hg in environment. 4

7. Explain in brief :

(s) Solar chimney. 4

(t) Significance of hydro and wind power as energy resources. 4

(u) Biomass as an energy resource. 4

OR

(v) Mechanism of OTEC. 4

(w) Solar ponds. 4

(x) Bioalcohol. 4

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