AS–1408

B.Sc. Part—II (Semester—III) Examination

ENVIRONMENTAL SCIENCE

(Environmental Chemistry)

Time : Three Hours] [Maximum Marks : 80

Note :— All questions are compulsory and Question Nos. **2** to **7** carry equal marks.

1. (A) Fill in the blanks :

(a) Cu and Fe come under _____ elements. ½

(b) Glucose and sucrose are types of _____. ½

(c) Solubility of gases in water depends upon _____. ½

(d) Biomass, Bialcohol and _____ are three forms of bioenergy. ½

(B) Choose correct option :

(e) All enzymes are made up of :

(i) Amino acids (ii) Faty acids

(iii) Nucleotides ½

(f) BHC is a :

(i) Pesticide (ii) Pharma drug

(iii) Hormone ½

(g) LC_{50} and LD_{50} are the representative of _____ test.

(i) Acute toxicity (ii) Chronic toxicity

(iii) Both (iv) None ½

(h) Biogas mainly composes of :

(i) CO_2 (ii) Methane

(iii) Oxygen ½

(C) Answer in **one** sentence each :

(i) Define Oxidoreductase 1

(ii) Define Xenobiotics 1

(iii) Define Toxicology 1

(iv) Define Biomagnification. 1

2. Explain in brief :

(a) Chemical potential 4

(b) P and Ca as activators and inhibitors 4

(c) Saturated hydrocarbons. 4

OR

(d) Chemical equilibrium 4

(e) Molybdenum as a trace element 4

(f) First law of thermodynamics. 4

3. Explain in brief :

(g) Biological importance of carbohydrates 4

(h) Properties of fatty acids 4

(i) Types of proteins. 4

OR

(j) Structure of glucose and sucrose 4

(k) Biological importance of fats 4

(l) Properties of enzymes. 4

4. Explain in brief :

(m) Sub acute and chronic exposure 4

(n) Sources of toxicants (any **two**) 4

(o) Definition and significance of acute toxicity test. 4

OR

(p) Definition and scope of toxicology 4

(q) Definition and objective of chronic toxicity test 4

(r) Biomagnification. 4

5. Describe in detail routes of exposure of toxicants. Describe modes of actions and physiological effects of BHC. 12

OR

Define bioremediation. Describe in detail types of bioremediation. 12

6. Describe in detail chemical structure and physico-chemical properties of water. 12

OR

Describe in detail chemical speciation of Hg. 12

7. Explain in brief :

(s) Solar collector with diagram 4

(t) Concept and mechanism of Hydropower generation 4

(u) Production of Bioalcohol. 4

OR

(v) Working of solar water heater with diagram 4

(w) Concept and mechanism of wind energy 4

(x) Principle and mechanism of OTEC. 4