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May-2026

B.Sc. (LS) VI SEMESTER

Chemistry VI : Bioinorganic & Env. Chemistry

(BLS-603)

Time : 3 Hours] [Max. Marks : 75

Instructions :

1. *It is compulsory to answer all the questions (1.5 marks each) of Part-A in short.*
2. *Answer any four questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART-A

1. (a) What is copolymerization? (1.5)
   (b) Write the sources of CO_2, SO_2, and NO_x in atmosphere. (1.5)
   (c) Discuss the methods to control particulates. (1.5)
   (d) Name the major regions of atmosphere. (1.5)
   (e) Write the constituents of photochemical smog. (1.5)
   (f) What is the role of Mg^{+2} in biological system? (1.5)
   (g) Write the techniques of measuring water pollution. (1.5)
   (h) Explain the term global warming. (1.5)

(i) Write the structure of teflon and polyvinyl-chloride. (1.5)

(j) Differentiate between condensation and addition polymerization with examples. (1.5)

PART-B

2. (a) Explain the Na^+/K^+ pump in detail. (10)

(b) Write the role of Ca^{+2} in biological system. (5)

3. (a) Explain sources, nature of pollutants and effects of water pollution. (10)

(b) Discuss the effects of air pollution. (5)

4. Write the effects of depletion of ozone layer. How it can be controlled? Discuss the photochemical reactions taking place in atmosphere. (15)

5. (a) Discuss linear, branched, network, hyperbrached and dendrimers. (5)

(b) Explain the various ways of classification of polymers. (10)

6. (a) Discuss the sources of air pollution. Classify air pollutants on the basis of particle size. (6)

(b) Explain the following :

(i) the factors responsible for ozone layer depletion.

(ii) water cycle.

(iii) water treatment methods. (9)

7. Write the notes on following : (15)

(i) Homopolymer and copolymer.

(ii) BOD and COD.

(iii) Thermosetting and thermoplastic polymers.

(iv) Acid rain.