2022

B.A./B.Sc.

Sixth Semester

DISCIPLINE SPECIFIC ELECTIVE – 3

CHEMISTRY

Course Code: CHD 6.11

(Industrial Chemicals & Environment)

Total Mark: 70 *Pass Mark: 28*

Time: 3 hours

Answer five *questions, taking* one *from each unit.*

UNIT–I

1. (a) Explain with the help of diagram the preparation of fluorine industrially. 4
   (b) What are the uses of chlorine? 3
   (c) How do you prepare acetylene in large quantity? Mention two hazards of acetylene. 3+2=5
   (d) Mention two uses of neon. 2

2. (a) What are ferrous and non-ferrous metals? Give examples. 4+2=6
   (b) What are ultra-pure metals? Write short note on Van Arkel method for purification of ultra-pure metal. 2+4=6
   (c) Mention hazards of phosgene. 2

UNIT–II

3. (a) How is silver extracted from argentite (Ag_2S) by cyanide process? 4
   (b) How would you carry out secondary water treatment process? Discuss the activated sludge process. 1+4=5
   (c) Discuss the industrial effluents from fertilizers and its treatment options. 5

4. (a) Explain the bacteriological examination of water. 4
   (b) Discuss the biogeochemical cycle of carbon. 4
   (c) What are acid rains? Give reactions involved in formation of acid rain. 3
   (d) What is the mechanism of greenhouse effect? 3

UNIT–III

5. (a) Why is measurement of H_2O pollution important? Discuss the pre-concentration method of water pollutants by ion exchange method. 2+2=4
   (b) What is tertiary water treatment? Discuss any one method. 1+4=5
   (c) Discuss the sources of water pollutants with reference to
      (i) sewage and oxygen demanding waste
      (ii) detergents 2½+2½=5

6. (a) Discuss how hydrological cycle occur and why water need to be purified for reuse. 5
   (b) What is COD? Explain how you would carry out this technique. 1+4=5
   (c) Write a note on the water purification by electrodialysis method. 4

UNIT–IV

7. (a) Differentiate between renewable and non-renewable source of energy. 4
   (b) What is meant by Q-value in a nucleus reaction? 2
   (c) Discuss in detail the management of nuclear waste. 5
   (d) Write a note on tidal energy. 3

8. (a) What are the disadvantages of solar energy? 2
   (b) What are the effects of nuclear pollution? 2
   (c) Write short notes on the following: 3×2=6
      (i) Coal as an energy source
      (ii) Geothermal energy
   (d) Explain the photolytic process of hydrogen production. 4

UNIT–V

9. (a) What are the disadvantages of biocatalysis? 2
   (b) What is green chemistry? Write down the principles of green chemistry. 2+4=6
   (c) Discuss in brief the classification of biocatalysis. 4
   (d) Write a short note on deep geological disposal of nuclear disposal. 2

10. (a) What is biocatalyst? Give its advantages. 1+2=3
    (b) Give a comparison between biocatalysis and green chemistry. 4
    (c) Write four major mechanisms involved in enzyme catalysis. 4
    (d) What is nuclear fusion? Give one example. 3
