This question paper contains 2 printed pages. *Your Roll No. .....*

Sl. No. of Ques. Paper : 2099 **GC-3**

Unique Paper Code : 32173903

Name of Paper : SEC-3 : Chemical Technology & Society

Name of Course : B.Sc. (Hons.) Chemistry / Life Sc. / Phy. Sc. / Industrial Chemistry

Semester : III

Duration : : 3 hours

Maximum Marks : 75

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt any six questions. Q. No. 1 is compulsory.

1. Write a short note on **any six** of the following: (6 x 2.5) 15
   (i) Continuous distillation
   (ii) Retention factor
   (iii) Vacuum distillation
   (iv) Adsorption
   (v) Point and Non-point sources of water pollution
   (vi) Greenhouse effect
   (vii) Bhopal gas tragedy
   (viii) Ozone hole formation

2. (i) Define adsorbate and adsorbent with an example. 3
   (ii) How will you separate a mixture of nitrobenzene and *p*-nitrophenol by column chromatography technique? 3
   (iii) What are the applications of absorption and adsorption in industries? 6

3. (i) Describe various sources of water pollution. Define biological oxygen demand and eutrophication. 6
   (ii) What is acid rain? Write down the reactions involved in its formation and the harmful effects. 6

4. (i) Give the principle of distillation and explain its different types. 6
   (ii) Explain the following techniques with appropriate examples: (2 x 3) 6
   a. Solvent extraction
   b. Leaching

5. (i) Discuss the particulate effect on living organisms. Explain one technique to remove the particulate matter. 6

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(ii) What do you understand by renewable energy resources? Explain with suitable examples. 6

6. (i) Explain thin layer chromatography using suitable example. 6
(ii) What do you mean by vacuum pump and discuss its applications? 6

7. (i) Discuss **any two** by taking an example: (2 x 3) 6
   a. Plastics
   b. Proteins
   c. Solar Energy

   (ii) Distinguish between classical and photochemical smog. Discuss the harmful effects of smog and methods to control it. 6