(p) Give an account of biocatalysis. 4

(q) Discuss about green fuels. 4

(r) Explain optimization of framework for the design of greener synthetic pathway. 4

AP–517

B.Sc. (Part–III) Semester–VI Examination

6S : INDUSTRIAL CHEMISTRY (R/V)

(Instru. Methods of Chemical Analysis, Green Chemistry)

Time : Three Hours] [Maximum Marks : 80

Note :— (1) Question No. **1** is compulsory.

(2) Attempt **ONE** question from each Unit.

(3) Use of scientific calculator is allowed.

1. (A) Fill in the blanks : 2

(i) The error which is either avoided or corrected is called as _____ error.

(ii) In ion exchange chromatography, stationary phase is _____ .

(iii) In dyes, _____ are the colour bearing groups.

(iv) X-rays are generated within the sample in _____ method.

(B) Choose the correct alternatives : 2

(i) In thin layer chromatography mobile phase is :

(a) Solid

(b) Liquid

(c) Gas

(d) All of these

(ii) The efficiency of separation in a chromatographic column gets increased as the no. of theoretical plates _____ .

(a) Decreases

(b) Kept constants

(c) Increases

(d) None of these

(iii) Naphthalein-2-Sulphon acid is used to prepare :

(a) Aurine dye

(b) β-naphthyl dye

(c) Indigo dye

(d) Picric acid dye

(iv) Auxochromes _____ the intensity of colour in dye.

(a) Increases

(b) Decreases

(c) Keep constant

(d) None of these

(C) Answer in **ONE** sentence : 4

(i) Define indeterminate error.

(ii) What is Chromophore ?

UNIT—V

10. (a) Give the classification of dyes on the basis of mode of applications. 4

(b) Explain the preparation of picric acid dye. 4

(c) Explain dye intermediates. 4

OR

11. (p) Discuss:

(i) Acid dye

(ii) Basic dye 4

(q) Discuss the preparation of Aurine dye. 4

(r) Give in details :

Chromophore and Auxochrome. 4

UNIT—VI

12. (a) Discuss about alternative reaction conditions and final product with example. 4

(b) Give an account of green solvents. 4

(c) Discuss the goals of green chemistry. 4

OR

(iii) Give the names of any two ion exchangers.

(iv) Define ion exchange Chromatography.

UNIT—I

2. (a) Discuss the sampling techniques of liquids. 4

(b) Give an account of precision and accuracy. 4

(c) What is meant by standard deviation ? Explain in brief. 4

OR

3. (p) Discuss the sampling of solids. 4

(q) Give an account of confidence limits. 4

(r) Explain the sampling of gases. 4

UNIT—II

4. (a) Discuss the technique of paper chromatography. 6

(b) Write in brief principle, technique and uses of TLC. 6

OR

5. (p) How GLC is superior over other chromatographic techniques ? Explain. 6

(q) Give an account of HPLC technique and its applications. 6

UNIT—III

6. (a) State and explain the principle of column chromatography. 4

   (b) Give the applications of ion exchange chromatography. 4

   (c) Discuss the various factors affecting solvent extraction. 4

OR

7. (p) Explain the techniques of extraction. 4

   (q) Describe the experimental details of column chromatography. 4

   (r) Give an account of ion exchange capacity. 4

UNIT—IV

8. (a) Describe the principle of IR Spectroscopy. 6

   (b) Explain the experimental techniques of flame photometry. 6

OR

9. (p) Explain how heavy metals in environmental sample are determined by using X-ray flourescence technique. 6

   (q) Discuss combustion flames in flame photometry. 6