

NRT/KS/19/2160

Bachelor of Science (B.Sc.) Semester–V Examination

ICH–502 INDUSTRIAL CHEMISTRY

Optional Paper–2

(Industrial Chemistry)

Time : Three Hours]

[Maximum Marks : 50

N.B. :— (1) All five questions are compulsory and carry equal marks.

(2) Write chemical equations and draw diagrams wherever necessary.

1. (A) What is complexometric titration ? Explain with suitable examples. 5
(B) Explain the following :
(i) Mixed indicators
(ii) Redox titration. 5

OR

- (C) What is neutralization reaction ? Explain with suitable example. 2½
(D) Explain the precipitation titration. 2½
(E) Distinguish between primary and secondary standard. 2½
(F) What is role of phenolphthalein indicator in acid-base titration ? 2½
2. (A) Describe the principle of Nephelometry. 5
(B) Explain the following :
(i) Friability Test
(ii) Monograph in drug. 5

OR

- (C) What is the effect of concentration on scattering in Nephelometry ? 2½
(D) Explain the Hardness of drug. 2½
(E) Explain the disintegration test with suitable example. 2½
(F) Write a note on dissolution rate of tablet. 2½
3. (A) What is amperometric titration ? Discuss the principle of amperometric titration. 5
(B) Discuss the principle of polarimetry. 5

OR

- (C) Discuss the optical activity of tartaric acid. 2½
(D) Give the advantages of amperometric titration. 2½
(E) Explain the basic components of polarimeters. 2½
(F) What is specific rotation ? Calculate the specific rotation of α - and β glucose. 2½
4. (A) What is solvent extraction ? Explain the liquid-liquid extraction. 5
(B) Explain role of pH in acidic and basic buffers solution. 5

OR

- (C) Explain the Batch extraction. 2½
- (D) Which factors affect the role and selectivity of an extraction ? 2½
- (E) Calculate the pH of the following concentration of Hydrogen ion :
- (i) 0.001 M
- (ii) 0.0005 M. 2½
- (F) What is criteria to choose the solvent in solvent extraction process ? 2½

5. Attempt any ten of the following :

- (i) Give the name of primary standard substance.
- (ii) Give any two names of universal indicator.
- (iii) Define titrant.
- (iv) What is unity of hardness ?
- (v) Define drug.
- (vi) What is dextro-rotatory ?
- (vii) How to measure the friability ?
- (viii) What is meant by $[\alpha]_D$?
- (ix) Define diastereomer.
- (x) Define pH.
- (xi) What is content of basic pH (10) ?
- (xii) Why solvent extraction is important ? 10×1=10