

Bachelor of Science (B.Sc.) Semester—V (C.B.S.) Examination
ICH-502 : INDUSTRIAL CHEMISTRY
Paper—2

Time : Three Hours]

[Maximum Marks : 50

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

(2) Write equations and draw well labelled diagrams wherever necessary.

1. (A) Define standard solution. Explain primary and secondary standards with example. 5
 (B) Explain with examples the following :—
 (i) Mixed indicators and
 (ii) Universal indicators. 5

OR

- (C) Draw and explain neutralization curve of strong acid and weak base. 2½
 (D) Write a note on complexometric titrations. 2½
 (E) Explain metal ion indicator with example. 2½
 (F) Explain precipitation titrations with their indicators. 2½
2. (A) Write notes on :—
 (i) Compression test and
 (ii) 3 point bend test of hardness of tablet. 5
 (B) Write the principle of Nephelometry and discuss its instrumentation process. 5

OR

- (C) Explain dissolution filters with examples. 2½
 (D) Explain disintegration test for tablet and capsule of normal size. 2½
 (E) Discuss the working of Nephelometer. 2½
 (F) What are the different factors, which affect measurement in Nephelometry ? 2½
3. (A) Explain Amperometric titration. Discuss the different types of amperometric titrations. 5
 (B) What is specific rotation ? Discuss the method of measurement of optical rotation by polarimeter. 5

OR

- (C) Explain the method of determination of thiocyanate in amperometry. 2½
 (D) Discuss the gas chromatographic method of determination of thiocyanate. 2½
 (E) Explain the principle of polarimetry. 2½
 (F) Write the applications of polarimetry. 2½

4. (A) Discuss the principle of solvent extraction. Explain the various factors affecting solvent extraction. 5
(B) Explain the importance of pH and its measurement in solvent extraction. 5

OR

- (C) Write a note on buffer solution. 2½
(D) Explain the factors affecting solvent extraction. 2½
(E) Give any five applications of solvent extraction. 2½
(F) Write short notes on :— 2½
(i) Batch extraction and
(ii) Continuous extraction.
5. Attempt any **TEN** of the following :—
- (i) Draw neutralization curve for titration of weak acid and strong base.
(ii) Define neutralization.
(iii) Give one example of indicator used in precipitation titrations.
(iv) What is dissolution rate of tablet ?
(v) What is Nephelometry ?
(vi) Draw a well labelled diagram of Nephelometer.
(vii) Define plane polarized light.
(viii) Give any one condition for compound to be optical activity.
(ix) Give the conditions of amperometric titrations.
(x) What is acidic buffer ?
(xi) Define soxhlet extraction.
(xii) What are the solvents used in solvent extraction ? 10×1=10