PMM/KS/15 – 5856

Fourth Semester Bachelor of Science (B. Sc.) Examination

INDUSTRIAL CHEMISTRY

Paper - II (ICH 402)

Time : Three Hours] [Max. Marks : 50

N. B. : (1) All five questions are compulsory and carry equal marks.
(2) Give neat and well labelled diagram wherever necessary.

1. (A) Draw the flow sheet of process for the production of vinyl acetate monomer. 5

(B) Explain the commercial manufacture of Ethyl acetate. 5

OR

(C) Explain the reaction for pretreatment in the production of cellulose acetate. $2\frac{1}{2}$

(D) Write notes on alcoholysis or ester interchange reaction. $2\frac{1}{2}$

(E) Describe the process of refining of ethyl acetate. $2\frac{1}{2}$

(F) Write the chemical reaction of acid chlorides used in the process of esterification. $2\frac{1}{2}$

2. (A) Describe the process of electrolytic reduction for the production of amines. 5

(B) Give the mechanism of hydrolysis. 5

OR

(C) Give the examples of primary. Secondary and tertiary amines with their structures and uses. $2\frac{1}{2}$

(D) Write notes on amination by reduction. $2\frac{1}{2}$

(E) What are the factors affecting the aminolysis ? $2\frac{1}{2}$

(F) How m–nitroaniline prepared from aniline ? $2\frac{1}{2}$

3. (A) What do you understand by aerobic and anaerobic processes ? Distinguish between them. 5

(B) What is the electrostatic precipitator ? Give the principle of its operation. Explain plate type and tube type precipitator. 5

OR

(C) Explain the mechanism of adsorption. $2\frac{1}{2}$

(D) What do you understand by the term 'adsorption isotherm' ? Give their types. $2\frac{1}{2}$

(E) Write notes on solid waste management. $2\frac{1}{2}$

(F) What are the Limitations of bag filters over air pollution control device ? $2\frac{1}{2}$

4. (A) Explain the principle involved in pH meter and conductometer. 5

(B) Explain the construction and working of pH meter. 5

OR

(C) How will you calibrate the flow type liquid level gauge and ultrasonic level gauge ? $2\frac{1}{2}$

(D) How will you measure the viscosity of liquid ? $2\frac{1}{2}$

(E) Give the uses of conductometric titration. $2\frac{1}{2}$

(F) Describe the working of conductometer. $2\frac{1}{2}$

5. Attempt any **ten** of the following :—

(i) Give any two derivatives of ester.

(ii) What is alcoholysis ?

(iii) Give the common catalyst used for estesification.

(iv) What is electrolytic reduction ?

(v) Give the structure of p–aminophenol.

(vi) Define hydrolysis.

(vii) What is sedimentation ?

(viii) Define filtration.

(ix) Give any two adsorbent.

(x) Define viscosity.

(xi) Give the name of standard electrode used for pH measurement.

(xii) What is SI unit of conductance ? 1x10