KNT/KW/16/5103

Bachelor of Science (B.Sc.) Semester—II (C.B.S.) Examination

INDUSTRIAL CHEMISTRY (ICH-202)

Compulsory Paper—2

Time : Three Hours] [Maximum Marks : 50

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

(2) Give chemical equations and diagrams wherever necessary.

1. (A) What is composite material ? Give the details constitution of composite materials. 5

(B) Give the synthesis and industrial applications of the following :

(i) PVC, and

(ii) Teflon. 5

OR

(C) What is epoxy resin ? How is it prepared ? 2½

(D) How will you distinguish between thermoplastics and thermosetting plastics ? 2½

(E) Explain the hybrid composite. 2½

(F) Give the preparation and properties of urea formaldehyde resin. 2½

2. (A) What is boiler ? Describe the simple vertical boiler and give its industrial applications. 5

(B) What are the different sources of water ? Give the specifications of water used in following :

(i) Sugar,

(ii) Dairies, and

(iii) Textiles. 5

OR

(C) Explain the hot lime soda process for treatment of water. 2½

(D) How will you distinguish water tube and fire tube boiler ? 2½

(E) Give the industrial applications of steam. 2½

(F) Explain the term hardness of water. 2½

3. (A) Describe the construction and working of reciprocating compressor. 5

(B) What are heat exchangers ? Explain the shell and tube exchangers with the help of neat well label diagram. 5

OR

(C) What are blowers ? Give its industrial application. 2½

(D) Explain Finned tube heat Exchanger. 2½

(E) Explain the working of vacuum pump. 2½

(F) Why are double acting pumps preferred over single acting pumps ? 2½

4. (A) Define the following :

(i) Calcination, and

(ii) Roasting

Explain the oxidising roasting and sulphonating roasting with suitable examples. 5

(B) Give any four important ores of copper with their chemical formulae. How is it extracted from ore ? 5

OR

(C) Explain the extraction of lead by wet process. 2½

(D) Explain the method of production of Aluminium by Hoop's process. 2½

(E) How is the reduction of Zno carried out during extraction of zinc ? 2½

(F) Explain carbon reduction process. 2½

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

(i) Give the chemical name of Bakelite.

(ii) What is Laminated plastic ?

(iii) Define plastic.

(iv) How is temporary hardness of water removed ?

(v) What is the function of "Fusible plug" fitted to a boiler ?

(vi) What is boiler efficiency ?

(vii) What is the function of Exhaust fan ?

(viii) What is the function of GEAR PUMP ?

(ix) What is ejector ?

(x) Give any two ores of zinc.

(xi) What is electrolytic refining ?

(xii) How ore is concentrated ? 1×10=10