NKT/KS/17/5102

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

INDUSTRIAL CHEMISTRY (ICH—201)

Compulsory Paper—1

Time : Three Hours] [Maximum Marks : 50

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

(2) Draw diagrams and write equations whenever necessary.

1. (a) How drying is important in industrial processes ? Explain the term free moisture and bound moisture. 5

(b) Explain the role of packed column and Rotating disc column in process of extraction. 5

OR

(c) Draw well labelled diagram of fluid bed dryer. Give its advantages. 2½

(d) Explain the role of mixer settler in extraction process. 2½

(e) How is the missing of liquid-liquid carried out in industry ? 2½

(f) Explain in detail process of Batch extraction. 2½

2. (a) Give the classification of Oil. Explain distillation of completely miscible oil and non-miscible oil. 5

(b) What are the food additives ? Name food colouring and flavouring agent. Give its advantages and disadvantages. 5

OR

(c) What is difference between soap and synthetic detergent ? 2½

(d) What is surfactant ? Explain LABS in detail. 2½

(e) What is artificial sweetener ? Write the effect of artificial sweetener in human health. 2½

(f) What is co-relation of saponification value, Iodine value and acid value of oil ? 2½

3. (a) What do you mean by efficiency of combustion ? How will you determine efficiency of combustion for fuel gas by using common apparatus ? 5

(b) What is meant by knocking in a petrol engine ? What is octane number of petrol ? How is knocking related to chemical structure of the constitueut of petrol and how it can be reduced ? 5

OR

(c) How will you distinguish diesel oil and diesel fuel ? 2½

(d) Describe the working of fluid bed catalytic cracking unit. 2½

(e) Explain the term refining of petroleum product. 2½

(f) Define the term net weight and gross weight of a fuel. 2½

4. (a) Describe in detail :

(i) Galvanic corrosion and

(ii) Waterline corrosion. 5

(b) Explain different types of glass on the basis of chemical composition. 5

OR

(c) Write a process of galvanisation of metal. Give its advantages over a painting of metal surface. 2½

(d) Write a chemical reaction in the formation of rust. 2½

(e) Explain the process of manufacturing of glass. 2½

(f) Explain physical and chemical properties of glass. 2½

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

(i) Draw the sketch of spray dryer.

(ii) Name the different drying equipment.

(iii) Define continuous extraction.

(iv) Which factor is mainly responsible for increasing rancidity of oil ?

(v) Define surfactant.

(vi) What is composition of soap ?

(vii) What is fuel gas ?

(viii) What is meaning of diesel index ?

(ix) Define refining.

(x) Explain why water tank partially filled with water undergoes corrosion just below the water line ?

(xi) What is main content of glass ?

(xii) How alloys prevent corrosion ? 1×10=10