Exam.Code:0001
Sub. Code: 0083

2123

B.A./B.Sc. (General) First Semester

Industrial Chemistry

Paper - A: Industrial Aspects of Chemistry

Time allowed: 3 Hours Max. Marks: 75

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting one question from each Section.

x-x-x

I. Attempt the following:-

(a) What is the principle of fractional distillation of crude oil?
(b) What catalyst is used in cracking crude oil?
(c) Why is Natural gas so important for the chemical industry?
(d) Write the major difference between Calcination and Roasting.
(e) What are the uses of furfural?
(f) Draw the structure of double sheet silicates.
(g) How are micelles formed?
(h) Differentiate between lyophilc and lyophobic colloids.
(i) What is the industrial importance of silicates?
(j) What are Aerosols and how do they impact our climate system? (1.5 x 10)

Section – A

II. (a) What is the principle of Reforming process? Discuss the various types of reforming processes with the help of neat diagrams.

(b) Write a short note on Isomerisation. What is the importance of isomerization in petroleum industry?

(8,7)

III. (a) Explain the process of fractionation of crude oil with the help of neat diagram. What products are obtained by the fractional distillation and what are their uses?

(b) What are the differences between Proximate and Ultimate analysis of Coal?

(8,7)

Section – B

IV. (a) Explain the manufacturing process of Cellulose acetate. Write properties and uses of Cellulose acetate.

(b) Explain the following metallurgical operations: (i) Pulverisation (ii) Refining (8,7)

V. (a) Discuss the industrial method of production of dextrin and dextrose from corn. Enlist the various industrial chemicals derived from dextrin and dextrose.

(b) What is Viscose? What are the steps involved in the production of Viscose? (8, 7)

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Section – C

VI. (a) Discuss the various steps involved in the extraction process of Iron.
(b) What is the structure of alumina? Discuss the availability, forms and modifications of alumina. (8, 7)

VII. (a) What are the processes used in the extraction of Lead?
(b) What are Zeolites? Discuss their industrial importance. (8, 7)

Section – D

VIII. (a) What are gels? How are they classified? Compare their important characteristics.
(b). What are Microemulsions? Why are microemulsions thermodynamically stable? Give their types with examples. (8, 7)

IX. (a) Derive the expression for Langmuir adsorption isotherm. What are the assumptions involved?
(b) Explain the terms Catalytic poisoning, Autocatalysis and negative catalysis. (8, 7)

x-x-x