2013

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 Unit.

x-x-x

1. (a) Give the composition of crude oil.
   (b) What is isomerization?
   (c) Write the sources of cellulose. Also write uses of cellulose.
   (d) Give the properties and uses of furfural.
   (e) What is smelting?
   (f) Write the industrial uses of aluminum.
   (g) What do you mean by adsorption?
   (h) Mention the role of surfactants in the synthesis of nanomaterials.
   (i) Name some industrial reactions involving homogeneous catalysis.
   (j) Write the properties and uses of ethyl alcohol.

(10x1½)

UNIT-I

2. Discuss the process of oil fractionation with a neat diagram. Write in detail about the properties and uses of various products of oil fractionation. (15)
3. (a) Give the detailed classification of Indian coal. Discuss the properties and uses of different types of coal. (10)
   (b) In brief, write down about the process of coal distillation. (5)

UNIT-II

4. With a neat flow sheet, discuss the process of manufacturing of cellulose acetate. Also mention its uses. (15)
5. (a) Discuss the principles of metallurgy. (6)
   (b) Write down about Roasting and Refining metallurgical operations. (9)

UNIT-III

6. Discuss the extraction process for iron and aluminum. (15)
7. Discuss the availability, different forms and industrial uses of alumina, silicates and zeolites. (15)

UNIT-IV

8. (a) What do you mean by Micelle? Discuss the role of surface chemistry in industrial operations. (7)
   (b) Discuss the various adsorption isotherms with their importance. (8)
9. Write down about the followings:
   (a) Heterogeneous catalysis (8)
   (b) Autocatalysis (7)

x-x-x