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RR-0614

First Year B. Sc. Examination

March / April – 2010

Industrial Aspects of Chemistry : Paper - I

(Industrial Chemistry) (Vocational)

Time : **3** Hours] [Total Marks : **70**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ F. Y. B. Sc.

Name of the Subject :

☛ Industrial Aspects of Chemistry - 1

☛ Subject Code No. : 0 6 1 4 ☛ Section No. (1, 2,.....) : Nil

Seat No. :

Student's Signature

(2) All sub-questions of question no **1** are **compulsory**.

(3) Give reactions, flow diagram and neat sketches where necessary

(4) Figures to the right indicate full marks of question.

1 Answer the following questions in brief : **15**

(i) Define the term : Catalysis

(ii) What is a promoter?

(iii) How is wood charcoal obtained? Give its calorific value.

(iv) Give the systematic names of :

(a) methane and

(b) ammonia

(v) Which chemical is added to detect any leakage of L.P.G?

(vi) Define the terms : Coal gas and cock oven gas

(vii) Define : Positive and negative catalyst

(viii) Define : Autocatalysis

(ix) Define : Adsorption isotherm

(x) What is meant by cracking?

(xi) Write medical use of ion-exchange absorption technique.

(xii) Give names of common oxyacids and salts

(xiii) Define : Gold number

(xiv) Explain : Deionized water and demineralized water.

(xv) Give the ancient chemical names of $ZnSO_4$ and KNO_3.

2 (a) Discuss : Inorganic origin of petroleum. **4**

OR

(a) Classify crude oil on basis of residue obtained by distillation. **4**

(b) Describe "Fluidized bed" catalytic creating with the help of neat flow diagram. **4**

OR

(b) Enlist various petrochemicals derived from butane and benzene. **4**

(c) Give an account of LPG. **3**

3 (a) Classify the coal according to its range. **4**

OR

(a) Describe production of coke by using different types of coal-gas making retorts.

(b) How ash content is determined in coal? Why is it undesirable in coal? **4**

OR

(b) Give the preparation, properties and uses of oxalic acid and isoamyl alcohol.

(c) Give the preparation and uses of starch. **3**

4 (a) Explain : Principles of extraction of metals from sulphide ores. **4**

OR

(a) Write a short note on wrought iron.

(b) Explain the structures of silicates. **4**

OR

(b) Discuss : Cyanidation method for extraction of Zinc.

(c) How purification of Bauxide is done, explain. **3**

5 (a) Discuss about activated charcoal and write the method of preparation and uses. **4**

OR

(a) Write note on alumina, and give structure of hydrated alumina.

(b) Describe : Extraction of metal by reduction. **4**

OR

(b) Write a note on Gels.

(c) Write a note on reduction smelting. **3**

6 (a) Derive Langmuir adsorption isotherm equation. Discuss its limitations. **4**

OR

(a) Explain : The adsorption theory with suitable example. **4**

(b) Explain the term 'Autocatalysis' with examples. **4**

OR

(b) What are enzymes? Explain the mechanism of enzyme catalysis by giving examples.

(c) Write a note on Electro osmosis. **3**
