

RAMAKRISHNA MISSION VIDYAMANDIRA

(Residential Autonomous College under University of Calcutta)

B.A./B.Sc. SIXTH SEMESTER EXAMINATION, MAY 2014

THIRD YEAR

INDUSTRIAL CHEMISTRY (Honours)

Date : 09/05/2014

Time : 11 am – 1 pm

Paper : VII

Full Marks : 50

Group – B

(Use a separate Answer Book for each Unit)

Unit - II

1. Choose the correct alternative (any four) : [4×1]
- a) Raw material for ethylene production in Haldia Petrochemicals is
 - i) Ethane
 - ii) Naptha
 - iii) Gas Oil
 - iv) Residue of vacuum distillation column
 - b) Catalytic oxidation dehydrogenation of methyl alcohol produces
 - i) Formaldehyde
 - ii) Phenol
 - iii) Acetone
 - iv) Maleic Anhydride
 - c) Which of the following is produced by dehydrogenation of ethylbenzene?
 - i) Styrene
 - ii) Cumene
 - iii) Ethyl alcohol
 - iv) Phenol
 - v) Ethylene glycol
 - d) 'Synthesis gas' meant for the synthesis of organic compound is a variable mixture of
 - i) N₂ and H₂
 - b) CO₂ and H₂
 - iii) CO and H₂
 - iv) CO and N₂
 - e) Styrene is produced by
 - i) fermentation of starch
 - b) Reacting ethylene oxide with acetaldehyde
 - iii) Catalytic dehydrogenation of ethylbenzene
 - d) None of these
 - f) Acrylonitrile is mainly used in which of the following industry?
 - i) Polymer
 - ii) Painting
 - iii) dyeing
 - iv) Photographic
 - v) Rubber
 - g) Trinitrotoluene (TNT), an explosive is made by nitration of
 - i) Nitrobenzene
 - ii) toluene
 - iii) Nitrotoluene
 - iv) benzene
2. Answer any three questions : [3×2]
- a) Write the use of Ethylene as a raw material for Petrochemical Industry.
 - b) Write the use of Propylene as a raw material for Petrochemical Industry.
 - c) How do you prepare methanol from methane.
 - d) How isopropanol is prepared from propylene.
 - e) How is vinyl chloride prepared from Ethylene.
3. Answer any two of the following : [2×10]
- a) Outline briefly the industrial preparation of
 - i) Acrylonitrile from propylene [5]
 - ii) Ethylene Glycol from ethylene. [5]
 - b) i) Manufacturing process of ethylene oxide from ethylene. Give chemical reactions and flowsheet of the process. Give one important use. [5]
ii) Preparation of formaldehyde from methanol. Give chemical reactions, flowsheet of the process and one important use. [5]
 - c) i) Describe the process of manufacture of Linear Alkylbenzene Sulphonate starting from kerosene fraction from petroleum distillation. State one use. [5]

- ii) Describe manufacturing process of styrene from ethylene (Dow process). State its properties and uses. [5]
- d) i) State briefly the main features of 'Platforming technology' for Production of BTX (Benzene-Toluene-Xylene) [5]
- ii) Write a brief note on the future prospect of Petrochemical Industry in India. [5]

Unit - III

4. Choose the correct alternative (**any four**) : [4×1]

- a) Analgesic drugs are
 i) Pain relievers ii) antibiotics
 iii) used in the treatment of T.B. iv) used in the treatment of typhoid
- b) Antibiotic
 i) inhibits/destroys the growth of microorganisms ii) is used as a pain reliever
 iii) is an antimalarial drug iv) is an anaesthetic
- c) Which of the following is not an antibiotic?
 i) Penicilin ii) Streptomycin iii) Tetracyclin iv) quinine
- d) Oil of wintergreen is rich in
 i) Methyl salicylate ii) Pinene iii) Phenol iv) Thymol
 v) menthol
- e) Engenol is present in the oil of
 i) Pepper ii) Clove iii) Ajowan iv) Fennel
- f) The drug used in the treatment of Malaria is
 i) Chloroquin Phosphate ii) Paracetamol iii) tetracycline iv) Enzyme diastase
- g) Which of the following is not a food additive
 i) Citric acid ii) invertage iii) Benzoyl peroxide
 iv) Ammonium Chloride v) Formaldehyde

5. Answer **any three** of the following questions : [3×2]

Outline the process of synthesis of

- a) Vaniline from Eugenol
 b) Beta Ionone and alpha Ionone from Citral
 c) Benzaldehyde from Toluene
 d) Phenyl Ethyl Alcohol by Grignard Reaction
 e) Coumarin

6. Answer **any one** of the following : [1×10]

- a) i) What is an antibiotic? How antibiotics act? [3]
 ii) Give the manufacturing process of chloromycetin with chemical reactions. State its important uses. [7]
- b) What are essential oils? Name three important essential oils and give the composition of main constituents present in those oils. What is an isolate? Classify the compounds present in essential oils and name the compounds present in each classification. [2+3+1+4]
- c) i) What is meant by the terms Analgesic and Antipyretic? Give examples. [3]
 ii) Give the manufacturing process of Paracetamol from chlorobenzene. Write the chemical reactions, flow sheet of the process and one use. [7]
- d) i) What are sulpha drugs. Give two examples of sulpha drugs and state their uses. [4]
 ii) Name the antimalarial drugs that are used commonly. Write the formula of—
 chloroquine phosphate, Paludrine, repacrine. [6]

