Roll No. | | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (Petroleum Refinary Engg.) (2013 Onwards) (Sem.–3)

ORGANIC CHEMISTRY

Subject Code : BTPC-301

M.Code : 72190

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

1. Write briefly :

a. Write IUPAC names of the products obtained by addition reactions of HBr to hex-l-ene

(i) in the absence of peroxide

(ii) in the presence of peroxide.

b. What is Bayer's test? What is its mechanism?

c. Write chemical reaction to affect the following transformations :

(i) Butan-l-ol to butanoic acid.

(ii) 3-Nitrobromobenzene to 3-nitrobenzoic acid

d. Write two methods for the synthesis of saturated monocarboxylic acids.

e. Differentiate the structures of glucose and fructose.

f. What is gun cotton and discuss its applications?

g. How benzene is prepared from :

(i) alkynes

(ii) phenol

h. Why aromatic amines are generally insoluble in water?

i. Outline the scheme for the synthesis of triphenylmethane dye.

j. What is the purpose of acid and basic dyes?

SECTION-B

2. Discuss Lucas test and dichromate test for the investigation of three classes of alcohols.

3. Explain the physical and chemical properties of monocarboxylic acids.

4. Write a short note of followings :

   (i) Killiani synthesis

   (ii) Ruff degradation

5. What are aryldiazonium salts? Write their synthesis and applications.

6. What is dye? Discuss the synthesis of Malachite green and Alizarin dyes.

SECTION-C

7. Discuss with mechanism for following reactions :

   (i) Wolf-Kishner reduction (3)

   (ii) Cannizzaro reaction (3)

   (iii) Haloform reaction. (4)

8. Discuss in details the effect of directing groups on electrophilic substitution reactions. (10)

9. (i) How do you convert ketoses to aldoses and aldoses to ketoses? (5)

   (ii) Discuss the structure and properties of starch and cellulose. (5)

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.