

Roll No. 

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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (Petroleum Refinery 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-1-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-1-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.**