

(7 pages)

Reg. No. :

Code No. : 10004 E Sub. Code : SMCH 22

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2023.

Second Semester

Chemistry – Core

ORGANIC CHEMISTRY – I

(For those who joined in July 2017-2019)

Time : Three hours

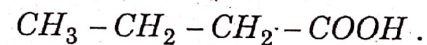
Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

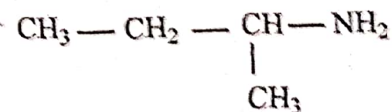
Choose the correct answer :

1. IUPAC name of the compound



- (a) n-butyric acid (b) Butyric acid
(c) Butanoic acid (d) All the above

2. IUPAC name of the compound

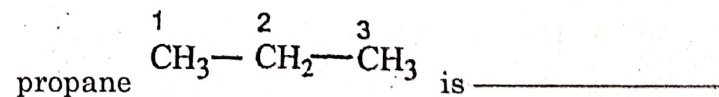


- (a) 2-Amino butane
(b) 1-methyl-1-aminopropane
(c) 2-methyl-3-aminopropane
(d) None of these

3. The +I (Inductive effect) is shown by?

- (a) CH_3 (b) $-\text{OH}$
(c) F (d) $-\text{C}_6\text{H}_5$

4. Heterolysis of $\text{C}_1 - \text{C}_2$ bond in



- (a) methyl and ethyl free radical
(b) Ethyl carbocation and methyl carbanion
(c) Methyl carbocation and Ethyl carbanion
(d) Methyl and Ethyl carbonium ion
5. Which of the following alkenes reacts with HBr in the presence of a peroxide to give anti-Markovniko's product?
- (a) 1-Butene
(b) 2,3-Dimethyl-2-butene
(c) 2-Butene
(d) 3-Hexene

6. What compound results from the 1,4-addition of HBr to 1,3-butadiene?
(a) 1-bromo-1-butene (b) 2-bromo-2-butene
(c) 4-bromo-1-butene (d) 1-bromo-2-butene
7. Which compound reacts most rapidly by an SN^1 mechanism?
(a) Methyl chloride (b) Isopropyl chloride
(c) Ethyl chloride (d) tert-Butyl chloride
8. Freon-12, CCl_2F_2 , is used as a
(a) Local anaesthetic (b) Dry-cleaning agent
(c) Refrigerant (d) Disinfectant
9. Oxidation of a primary alcohol with produces
(a) a carboxylic acid (b) an ether
(c) a ketone (d) an ester
10. In the manufacture of dynamite, one of the chemicals used is
(a) Glycerol (b) Glycerol triacetate
(c) Glycerol trinitrate (d) Glycerol triiodide

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Discuss about IUPAC rules for naming of alcohols with example.
Or
(b) Write a note on structural isomerism with examples.
12. (a) Write a note on steric effect with suitable example.
Or
(b) Explain the hybridization and geometry of methane molecule.
13. (a) Give the mechanism of Anti-Markownikoff's addition in alkene.
Or
(b) Explain the classification of dienes with example.
14. (a) Explain SN^2 mechanism with suitable example.
Or
(b) Describe the preparation, properties and uses of vinyl chloride.

15. (a) Write short notes on estimation of hydroxyl group.

Or

- (b) Explain the mechanism of dehydration of alcohols.

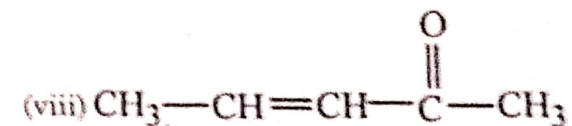
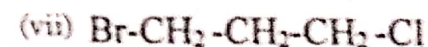
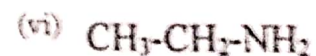
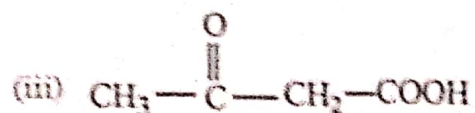
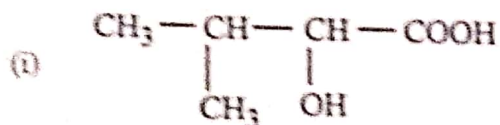
PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Give an account on IUPAC nomenclature of the alkanes and Cycloalkanes with examples.

Or

- (b) Give IUPAC names of the following molecules.



17. (a) Explain Inductive Effect and electromeric effect with suitable example.

Or

- (b) Write a note on the following
(i) Homolytic and Heterolytic fission
(ii) Electrophile and Nucleophile

18. (a) Explain the ozonolysis and hydroboration reactions of alkenes.

Or

- (b) Explain the following
(i) Diels-Alder reaction
(ii) Allylic bromination by NBS

19. (a) Discuss the mechanism of E_1 and E_2 elimination reactions.

Or

- (b) Explain the preparation and uses of chloroform and Carbon tetrachloride.
20. (a) How will you distinguish primary, secondary and tertiary alcohols by (i) Oxidation (ii) Dehydration (iii) Victor-Meyer and (iv) Lucas test.

Or

- (b) (i) Write a note on Zeisel's method for the estimation of alkoxy group.
- (ii) Describe the preparation and uses of Oxirane.