



K20U 1269

Reg. No. :

Name :

III Semester B.Sc. Degree (CBCSS – Sup./Imp.) Examination, November 2020
(2014 – '18 Admns)
CORE COURSE IN CHEMISTRY
3B04 CHE : Organic Chemistry – I

Time : 3 Hours

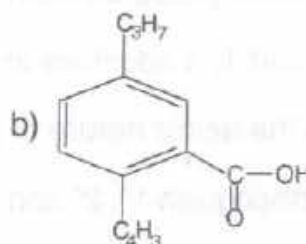
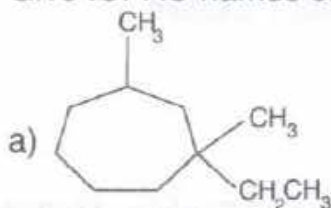
Max. Marks : 40

Instruction : Answer the questions in English only.

SECTION – A

(Objective type-each carries 1 mark. Answer all 4 questions)

1. Give IUPAC names of the following.



2. Write the structural formulae of
a) *trans*-3-methylhex-3-ene and

b) *cis*-3-methylhex-3-ene

3. Give one example for homolytic bond cleavage.

4. What are electrophiles ?

(4×1=4)

SECTION – B

(Short answer type. Each carries 2 marks. Answer 7 questions out of 10)

5. Which has higher boiling point, *o* nitrophenol or *p* nitrophenol ? Why ?
6. What are the products obtained by the ozonolysis of $C_6H_5CH = CHCH_3$?
7. Which is more reactive, $CH_2 = CH - CH_2Cl$ or $CH_2 = CHCl$? Why ?
8. How is the conversion made possible ? $CH_3COCH_3 \rightarrow (CH_3)_3COH$.
9. What happens when glycerol is heated with $KHSO_4$?
10. Give the increasing order of basicity among CH_3NH_2 , $(CH_3)_2NH$ and $(CH_3)_3N$.

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K20U 1269



11. How is *n* butane obtained by Kolbes electrolytic method ?

12. $(\text{CH}_3)_2\text{C} = \text{CHCH}_3 + \text{BH}_3$ in ether / $\text{H}_2\text{O} \rightarrow ?$

13. Explain the hybridization in allene.

14. How is ethanol converted to *n* propanol ? (7×2=14)

SECTION – C

(Short essay/problem type. **Each** carries 3 marks. Answer 4 questions out of 6)

15. Explain the mechanism of the rearrangement reactions.

- a) Pinacol pinacolone and b) Claisen

16. Discuss :

- a) Haworth synthesis of naphthalene and
b) Wislicenus synthesis of cycloalkane.

17. How is chloroform prepared from a) Acetone and b) Ethanol ? Explain.

18. Discuss 1, 2 and 1, 4 additions in butadiene.

19. Comment on the acidic nature of phenol.

20. How will you distinguish 1°, 2° and 3° alcohols by Lucas method ? Explain. (4×3=12)

SECTION – D

(Long essay type. **Each** carries 5 marks. Answer 2 questions out of 4)

21. Discuss the mechanism of $\text{S}_{\text{N}}1$ and $\text{S}_{\text{N}}2$ reactions with reference to stereochemistry, intermediate/transition state and factors affecting the reaction.

22. Comment on the structure, generation and reactivity of

- a) Carbenes and
b) Nitrenes.

23. Discuss the following :

- a) Addition of HBr to unsymmetrical alkenes and
b) Action of alcoholic potash in 2-bromo-pentane.

24. How are the following synthesized ?

- a) Phenol from cumene
b) Phenolic ethers and
c) Dihydric phenols.

(2×5=10)