



QP CODE: 20101122



20101122

Reg No : .....

Name : .....

**B.Sc. DEGREE (CBCS) EXAMINATION, NOVEMBER 2020**

**Second Semester**

**Complementary Course - CH2CMT02 - CHEMISTRY - BASIC ORGANIC CHEMISTRY**

(Common for B.Sc Botany Model I ,B.Sc Botany Model II Environmental Monitoring And Management ,B.Sc Botany Model II Food Microbiology ,B.Sc Botany Model II Horticulture and Nursery Management ,B.Sc Family & Community Science Model I ,B.Sc Food Science & Quality Control Model III ,B.Sc Geology Model I,B.Sc Physics Model I,B.Sc Zoology Model I,B.Sc Zoology Model II Aquaculture,B.Sc Zoology Model II Food Microbiology,B.Sc Zoology Model II Medical Microbiology,B.Sc Geology and Water Management Model III,B.Sc Botany Model II Plant Biotechnology,B.Sc Food Technology & Quality Assurance)

2017 ADMISSION ONWARDS

2AC64361

Time: 3 Hours

Max. Marks : 60

**Part A**

*Answer any **ten** questions.*

*Each question carries **1** mark.*

1. Define catenation.
2. Which isomerism is exhibited by isopentane and neopentane?
3. Give an example of rearrangement reaction.
4. What do you mean by the mechanism of a reaction?
5. Define inductive effect.
6. Propionic acid or dimethyl acetic acid which will undergo esterification reaction easily?
7. Which product is formed by the reaction of fumaric acid with dilute  $\text{KMnO}_4$ .
8. What is optical activity?
9. Draw all possible conformations of cyclohexane.
10. Explain Heteropolymers.
11. What is polypropylene?
12. What is PET (Poly ethylene terephthalate)?





(10×1=10)

**Part B**

*Answer any six questions.*

*Each question carries 5 marks.*

13. Write the structural formula of following compounds:
- (i) 2,3-dimethylbutanal
  - (ii) heptan-4-one
  - (iii) 2,3-dibromo-1-phenylpentane
  - (iv) 2-methylbutanoic acid
  - (v) 3-butenic acid
14. Write a note on generation, structure and stability of free radicals.
15. How do you convert benzene to chlorobenzene? Give the mechanism of the reaction.
16. Explain the mechanism of addition of water to acetylene in presence of  $H_2SO_4$  and  $HgSO_4$ .
17. How will you convert 2-bromopropane to 1-propene? Give the mechanism of the reaction.
18. Explain stereoisomerism and its classifications.
19. Explain E, Z nomenclature of geometrical isomers with suitable examples.
20. Sketch the Sawhorse and Newmann projections of staggered conformation of ethane.
21. Name one natural polymer which has almost 100% cis configuration. Write its structure.

(6×5=30)

**Part C**

*Answer any two questions.*

*Each question carries 10 marks.*

22. (i) Differentiate between homolytic and heterolytic cleavage.  
(ii) Using suitable arrow notation indicate the formation of reactive intermediates when the following covalent bonds undergo bond fission:
- (a) when  $Cl_2$  undergoes homolytic fission
  - (ii)  $CH_3Cl$  undergoes heterolytic fission
- (iii) Explain the classification of reagents into nucleophile and electrophile with examples.
23. Discuss the mechanism of nucleophilic substitution reactions. Explain the stereochemistry in each case.
24. Explain the terms Racemic modification, racemisation and resolution.
25. How is Bakelite formed? Explain the reaction with equations. What are its important uses?

(2×10=20)



