

(6 pages)

Reg. No. : .....

Code No. : 30478 E Sub. Code : CMCH 51

B.Sc. (CBCS) DEGREE EXAMINATION,  
NOVEMBER 2024.

Fifth Semester

Chemistry — Core

ORGANIC CHEMISTRY – II

(For those who joined in July 2021 and 2022 only)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A pair of stereo isomers which are mirror images of each other are called \_\_\_\_\_.

(a) enantiomers (b) diastereomers  
(c) metamers (d) racemates

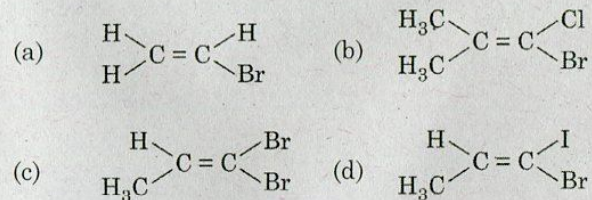
2. Spirane exhibit optical isomerism because of \_\_\_\_\_.

(a) Chiral carbon (b) Axis of chirality  
(c) Both (a) and (b) (d) None

3. Number of conformational isomers of  $C_2H_6$  is \_\_\_\_\_.

(a) 4 (b) 6  
(c) 2 (d) 5

4. Geometric isomerism is shown by



5. Which of the following amino acid is not optically active?

(a) Alanine (b) Glycine  
(c) Valine (d) Isolencine

6. ISO electric point is the pH at which a amino acid has \_\_\_\_\_.

(a) anion (b) cation  
(c) di polar ion (d) none of these

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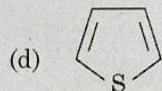
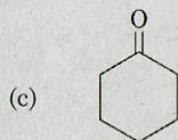
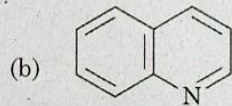
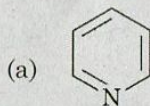




7. A rule which explain aromaticity is  
(a) Makovaikov's rule (b) Huckel's rule  
(c) Saytzeff rule (d) Bayer's theory

8. Benzene undergoes substitution reaction more easily than addition reaction because  
(a) if has a cyclic structure  
(b) it has three double bond  
(c) if has six hydrogen atoms  
(d) there is delocalisation of electrons

9. Which of the following is not a heterocyclic compound?



10. Isoquinoline on oxidation given  
(a) phthalic acid (b) cinchomeric acid  
(c) both (a) and (b) (d) none of the above

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PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain the optical activities of allenes.

Or

- (b) Explain the optical activity of spiranes.

12. (a) Explain amido – imido tautomerism.

Or

- (b) Illustrate the geometrical isomerism in maleic and fumaric acids.

13. (a) How will you prepare  $\alpha$ -amino acid by Strecker synthesis?

Or

- (b) Describe the structure of sucrose.

14. (a) How will you convert D-glucose into D-fructose?

Or

- (b) Write the occurrence and preparation of D-fructose.

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[P.T.O.]





15. (a) Discuss the Fischer – Indole synthesis.

Or

- (b) Explain the mechanism of electrophilic substitution in isoquinoline.

PART C — ( $5 \times 8 = 40$  marks)

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

16. (a) Explain in detail R-S notation with suitable examples.

Or

- (b) Write a note on :

- (i) Racemisation
- (ii) Resolution.

17. (a) Explain the conformational analysis of ethane.

Or

- (b) Explain the conformational analysis of 1, 2 dihalo ethane.

18. (a) Explain about Zwitter ions and iso electric point.

Or

- (b) Write a short note on mutarotation.

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19. (a) Write a note on benzenoid and non benzenoid aromatics compounds.

Or

- (b) Write a note on aromatic nucleophilic substitution.

20. (a) Compare the basicity of pyridine, pyridine and pyrrole.

Or

- (b) Give the preparation and three chemical properties of quinoline.
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