Turn Over



QP CODE: 24019209

B.Sc DEGREE (CBCS) REGULAR / IMPROVEMENT / REAPPEARANCE

EXAMINATIONS, MAY 2024

Second Semester

B.Sc Biotechnology Model III

Core Course - BT2CRT04 - ELEMENTARY CHEMISTRY FOR BIOLOGY

2017 ADMISSION ONWARDS

93F23398

Time: 3 Hours

Max. Marks: 60

Part A

Answer any ten questions.

Each question carries 1 mark.

- How atomic orbitals are formed? 1.
- 2. Write any two applications of lattice energy.
- 3. Analyse the VSEPR theory.
- 4. What is the hybridization in ethane?
- 5. How the properties of water is being affected by H₂ bonding?
- 6. State Roult's law.
- 7. What is ppm? How it is calculated?
- 8. What is equillibrium constant?
- What are pseudo order reactions? Give examples. 9.
- 10. What is t_{1/2}?
- 11. What are eclipsed forms?
- 12. What are d and I forms of a compound?

 $(10 \times 1 = 10)$

Part B

Answer any six questions.

Each question carries 5 marks.

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- 13. Illustrate the Bohr atom model.
- 14. Mention the principal quantum number and its significance.
- 15. What are intermolecular forces.
- 16. Analyse the effective range of a buffer system.
- 17. Discuss acidimetry and akalimetry.
- 18. Distinguish between order and molecularity of a reaction.
- 19. Why does a reaction rate increases with temperature? Derive the expression.
- 20. Give a short note on epimers with suitable examples.
- 21. Compare structural isomers with stereo isomers.

(6×5=30)

Part C

Answer any **two** questions. Each question carries **10** marks.

- 22. Discuss the De Broglie equation, Heisenberg uncertainity principle and Schrodinger wave equation.
- 23. Explain in detail the molecular orbital theory.
- 24. Explain the mole concept and Avogadro hypothesis .
- 25. Derive the expression for rate constant using collision theory of reaction rates.

(2×10=20)