QP CODE: 21103143

21103143

Reg No : .....

Name : .....

B.Sc DEGREE (CBCS) REGULAR / REAPPEARANCE EXAMINATIONS, DECEMBER 2021

Second Semester

B.Sc Biotechnology Model III

Core Course - BT2CRT04 - ELEMENTARY CHEMISTRY FOR BIOLOGY

2017 ADMISSION ONWARDS

A57813D9

Time: 3 Hours Max. Marks : 60

Part A

*Answer any **ten** questions.*

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

1. Recollect the idea of atomic orbitals.
2. Write about the principal quantum number.
3. Recall VSEPR theory.
4. What do you mean by bonding molecular orbitals?
5. What is H2 bonding? Explain its types
6. Calculate the molarity of solution containing 20gm of NaCl in 500 ml water .
7. Calculate the molarity of NaOH solution prepared by dissolving 250gm of NaOH in 500 ml of water.
8. What is permanganometry?
9. What is half life of a reaction?
10. Define temperature coefficient of a reaction.
11. Define enantiomers.
12. What is keto-enol tautomerism? Give example.

(10×1=10)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. Explain in brief the Heisenberge uncertainity principle.

14. Describe lattice energy and its applications.

15. What are intermolecular forces.

16. What are colligative properties? Give examples.

17. Derive an equation for the dissociation constant of a weak acid.

18. Distinguish between order and molecularity of a reaction.

19. Derive the integrated rate equation of zero order reaction.

20. Analyse the order of stability in different conformations of ethane.

21. Differentiate between geometrical and optical isomerism with examples.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **10** marks.*

22. Explain in detail the Bohr model and its limitations.

23. Describe the different hybridization using suitable examples.

24. Explain the different buffer systems.

25. Derive the expression for rate constant using collision theory of reaction rates.

(2×10=20)