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Name.....

Reg. No.....

**FIRST SEMESTER (CBCSS—UG) DEGREE EXAMINATION
NOVEMBER 2023**

Chemistry

CHE 1C 01—GENERAL CHEMISTRY

(2019—2023 Admissions)

Time : Two Hours

Maximum : 60 Marks

Section A (Short Answers)*Answer questions up to 20 marks.**Each question carries 2 marks.*

1. Distinguish between acidimetry and alkalimetry.
2. Define atomic mass and molecular mass.
3. Differentiate oxidation and reduction.
4. What are the advantages of micro analysis ?
5. If you are supplied with 2M H_2SO_4 solution how much of it should be diluted with water to form 20 litres of 0.5M solution.
6. What role does zinc ion play in the action of carboxy peptidase A ?
7. Write a note on chlorophyll.
8. Discuss Heisenberg's uncertainty principle.
9. Differentiate between intermolecular and intramolecular hydrogen bonding.
10. Explain the principle of hydrogen bomb.
11. Explain the terms mass defect and binding energy.
12. State group displacement law.

(Ceiling of marks : 20)

Turn over

Section B (Paragraph)

Answer questions up to 30 marks.

Each question carries 5 marks.

13. Discuss the principle of complexometric titrations.
14. Explain the bond order and magnetic behavior of C_2 molecule on the basis of MOT.
15. How can you apply Born-Haber cycle to calculate lattice energy ? Explain using NaCl as example.
16. Discuss the biochemistry of Iron.
17. Mention the role of Cobalt in living beings.
18. Discuss the applications of radioisotopes.
19. Explain the term nuclear fusion with suitable examples. Why are fusion reactions called thermonuclear reactions.

(Ceiling of marks : 30)

Section C (Essay)

*Answer any **one** question.*

The question carries 10 marks.

20. (a) Discuss briefly the method of expressing concentration.
(b) Discuss double burette method. What are its advantages
21. (a) What are Quantum numbers. Discuss the significance of each quantum number.
(b) Use VSEPR model to predict the geometry of BF_3 , H_2O , PCl_5 , ClF_3 and NH_3 .

(1 × 10 = 10 marks)