

C. ABDUL HAKEEM COLLEGE (AUTONOMOUS),
MELVISHARAM - 632 509.
SEMESTER EXAMINATIONS, NOVEMBER - 2018

B.Sc., CHEMISTRY

SEMESTER I

U14MCH101 – GENERAL CHEMISTRY - I

Time: Three Hours

Maximum: 75 Marks

SECTION - A (10 X 2 = 20 Marks)

Answer **ALL** Questions.

1. Define Aufbau principle.
2. Define factors affecting atomic radii.
3. What is an ionic bond? Give an example?
4. Write the bonding molecular orbital H_2 .
5. State inductive effect with examples.
6. Define homolytic fission with example.
7. What is photoelectric effect?
8. Write the Significance of ψ and ψ^2 .
9. Define normality.
10. Write the acid base indicators.

SECTION - B (5 X 5 = 25 Marks)

Answer **ALL** Questions.

11. a) Write the Hund's rule with maximum multiplicity.

(Or)

b) Explain the factors affecting ionization potential and electron affinity.

12. a) Explain the valency bond theory.

(Or)

b) Explain the Molecular orbitals diagrams of He_2 and O_2 Bond order.

13. a) Explain the mesomeric effect with examples.

(Or)

b) Write the hybridization methane molecule.

14. a) Explain Heisenberg's uncertainty principle.

(Or)

b) Write a note on de Broglie relationship.

15. a) Explain molality and normality with examples.

(Or)

b) Discuss the iodometric and iodimetric titration.

SECTION - C (3 X 10 = 30 Marks)

Answer **ANY THREE** Questions.

16. Discuss about the quantum numbers with types.
17. Explain the geometries of BO_3^{3-} , NH_4^+ , ClF_3 and XeF_6 molecules.
18. Explain structure and stability of carbocation, carbanions and free radical.
19. Discuss the Maxwells distribution of molecular velocities.
20. Write the theory behind redox and complexometric titrations.
