

B. Sc. DEGREE (C.B.C.S.S) EXAMINATION, OCTOBER 2018
(2017 Admission Improvement / Supplementary and 2015 & 2016 Admission
Supplementary)
SEMESTER I - CORE COURSE (CHEMISTRY)
CH1B01TB - SCIENCE METHODOLOGY AND FUNDAMENTAL CHEMISTRY

Time: Three Hours

Maximum Marks: 60

PART A**I. Answer all questions. Each question carries 1 mark**

1. Rutherford's alpha scattering experiment led to the enunciation of ____ law.
2. "Chance sometimes plays a role in developing hypothesis." State true or false.
3. Which among the following decreases along a period? (Ionization enthalpy, Atomic radius, Electron affinity).
4. The splitting of spectral lines when the atom is placed in a magnetic field is known as ---
---- effect.
5. Mole is defined as.....

(5 x 1 = 5)**PART B****II. Answer any five questions. Each question carries 2 marks**

6. State and explain Faradays first law of electrolysis.
7. Explain the term 'paradigm shift' in science.
8. Explain the classification of elements into s, p, d & f block elements.
9. What do you mean by metallic character? How does it vary along a period?
10. What are the failures of the Bohr model of atom.
11. Distinguish between orbit and orbital
12. Explain redox titrations and principle involved in redox titrations.
13. What is solubility product? Give the relation between solubility and solubility product

(5 x 2 = 10)**PART C****III. Answer any five questions. Each question carries 5 marks**

14. Distinguish between law and theory.
15. Write a note on alchemy.
16. How does electronegativity vary along a group and period?
17. Differentiate between inductive and deductive reasoning.
18. Describe special features of spectrum of H atom.
19. Explain Einstein's theory of photoelectric effect.
20. Briefly explain theory behind acid-base indicators
21. Explain the following i) Filtration 2) Fractional Distillation 3) Solvent extraction

(5x5= 25)

PART D

IV. Answer any 2 questions. Each question carries 10 marks

22. Explain the role of chemistry as a central science connecting other branches of science.
23. Explain successive electron affinity and its variation along a period and group.
24. Write the postulates of Bohr's atomic model. How will you proceed to calculate the energy of an electron in H atom.
25. What is a titration curve? Discuss the titration curve for the neutralization of
 - a) A strong acid with a strong base
 - b) A strong acid with a weak base

(2×10 = 20)