QP CODE: 18103651

18103651

Reg No : .....

Name : .....

B.Sc.DEGREE(CBCS)EXAMINATION, DECEMBER 2018

First Semester

Complementary Course - CH1CMT01 -

CHEMISTRY - BASIC THEORETICAL AND ANALYTICAL CHEMISTRY

(Common to B.Sc Botany Model I, B.Sc Botany Model II Environmental Monitoring And Management, B.Sc Botany Model II Food Microbiology, B.Sc Botany Model II Horticulture and Nursery Management, B.Sc Botany Model II Plant Biotechnology, B.Sc Family & Community Science Model I, B.Sc Food Science & Quality Control Model III, B.Sc Food Technology & Quality Assurance, B.Sc Geology and Water Management Model III, B.Sc Geology Model I, B.Sc Physics Model I, B.Sc Zoology Model I, B.Sc Zoology Model II Aquaculture, B.Sc Zoology Model II Food Microbiology, B.Sc Zoology Model II Medical Microbiology)

2018 Admission only

1EF53847

Maximum Marks: 60 **Time: 3 Hours**

Part A

Answer any **ten** questions.

Each question carries **1** mark.

1. Give the mathematical expression for Heisenberg Uncertainty Principle.
2. State aufbau principle.
3. Define ionic bond.
4. Define London forces.
5. Calculate the mass of 1.6 gram atom of sodium. Atomic mass of sodium is 23.
6. Define parts per million (ppm).
7. Give an example of an amphoteric compound.
8. Define titrant.
9. Give any two advantages of micro scale experiments.
10. What are the different types of determinate errors?
11. What is solvent extraction?
12. Define chromatography.

(10×1=10)

Part B

Answer any **six** questions.

Each question carries **5** marks.

13. Explain the hybridization and geometry of acetylene molecule.

14. How elements are clasified in Long Form of the periodic table.

15. Compare electron gain enthalpy and electro negativity.

16. A buffer solution contains 0.20 mole of NH_4OH and 0.25 mole of NH_4Cl per litre. Calculate the pH of the solution. Dissociation constant of NH_4OH at room temperature is 1.81×10^{-5}.

17. What is meant by a buffer solution. How are they classified? Explain giving examples.

18. a) State and explain solubility product. b) The solubility of silver chloride in water at 250C is 0.00179gl-1. Calculate the solubility product at 250c.

19. Calculate the mass required to prepare 0.1N 250 ml oxalic acid solution.

20. Discuss precipitation titration with examples.

21. Explain the fundamental and optimum conditions for efficient precipitation in gravimetric analysis.

(6×5=30)

Part C

Answer any **two** questions.

Each question carries **10** marks.

22. Discuss valence bond theory in detail using suitable examples. What are its limitations?

23. What are the rules for assigning oxidation number? Explain with example.

24. Write a note on reporting of analytical data.

25. Draw the schematic diagram and explain the principle and applications of gas chromatography.

(2×10=20)