QP CODE: 24801184

24801184

Reg No : .....

Name : .....

INTEGRATED MSC DEGREE EXAMINATION, FEBRUARY 2024

First Semester

INTEGRATED MSC BASIC SCIENCE-PHYSICS

Complementary - IPH1CM06 - CHEMISTRY- I BASIC CONCEPTS IN CHEMISTRY

2021 Admission Onwards

579A2D3F

Time: 3 Hours

Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

*Weight **1** each.*

1. Write de Broglie's equation.
2. How many radial nodes are in the 3s orbital?
3. Write the electronic configuration of Oxygen.
4. Define ionic radius. Why an anion is larger than its atom?
5. Define parts per million (ppm).
6. How do you determine the strength of acids and bases?
7. What are the criteria for primary standard?
8. Give any two rules for determinig the significant digits.
9. What is the principle of solvent extraction?
10. Name the detectors used in HPLC.

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

*Weight **2** each.*

11. Find the uncertainity in velocity when a cricket ball weighing 50 g is located within $0.1A^0$?
12. Discuss the formation of ionic compounds and the factors favouring its formation.
13. What is hybridization? Explain the characteristics of hybridization.

14. What are the rules for determining oxidation number of an element?

15. The solubilty of $PbSO_4$ in water at 25^0C is 0.038 gl^{-1}. Calculate its solubility product.

16. Discuss the different types of titrations.

17. Explain in detail the difference between absolute error and relative errror with examples.

18. Briefly explain the uses of gas chromatography.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. What are the main postulates of VSEPR theory? Discuss the shapes of the following molecules based on VSEPR theory. (i) $BeCl_2$ (ii)H_2O (iii) BF_3 (iv) CH_4

20. Write notes on (i) Lowry-Bronsted concept (ii) Lewis concept of acids and bases (iii) pH scale

21. Write notes on the first aid procedures in a laboratory.

22. Write notes on (i) Thin layer chromatography (ii) Paper chromatography

(2×5=10 weightage)