QP CODE: 23505504

23505504

Reg No : .....

Name : .....

INTEGRATED MSC DEGREE EXAMINATION, APRIL 2023

First Semester

INTEGRATED MSC BASIC SCIENCE-PHYSICS

Complementary - IPH1CM06 - CHEMISTRY- I BASIC CONCEPTS IN CHEMISTRY

2021 Admission Onwards

D1510811

Time: 3 Hours Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

*Weight **1** each.*

1. What is Heisenberg's uncertainity principle?
2. What are quantum numbers?
3. How is a co-ordinate bond different from a covalent bond?
4. Define atomic weight.
5. Calculate the molarity of sodium carbonate solution prepared by dissolving 0.53 g pure anhydrous Na_2CO_3 in 500 ml of distilled water?
6. What are Lewis acids?
7. What first aid will recommend for acid splash on the skin?
8. What is a redox titration?
9. What are indeterminate errors?
10. What are the advantages of HPLC?

(8×1=8 weightage)

Part B (Short Essay/Problems)

*Answer any **six** questions.*

*Weight **2** each.*

11. Write the electronic configuration of the following atoms - $_{19}K$, $_{26}Fe$, $_{24}Cr$, $_{30}Zn$
12. Explain the factors which favour the formation of ionic compounds.

13. How elements are classified in Long Form of the periodic table?

14. Discuss the factors which influence the electronegativity of an atom.

15. 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. Dissolution constant of NH_4OH at room temperature is 1.81×10^{-5}.

16. What are the basic requirements for a titrimetric analysis?

17. Write a note on recrystallisation.

18. Distinguish between adsorption chromatography and partition chromatography.

(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. Describe the main postulates of Bohr's atom model? What are its merits and demerits?

20. Explain the terms common ion effect and solubility product. Discuss their applications in qualitative cation analysis.

21. Write notes on (i) Significant digits (ii) Graphing of data (iii) Precision and Accuracy

22. Illustrate gas-liquid chromatography with the help of a diagram and discuss the principle and applications.

(2×5=10 weightage)