23145775

B.Sc DEGREE (CBCS) REGULAR / IMPROVEMENT / REAPPEARANCE EXAMINATIONS, DECEMBER 2023

First Semester

Core Course - CH1CRT01 - GENERAL AND ANALYTICAL CHEMISTRY

(Common to B.Sc Chemistry Model I, B.Sc Chemistry Model II Industrial Chemistry, B.Sc Chemistry Model III Petrochemicals)

2017 Admission Onwards

849FD24A

Time: 3 Hours

Max. Marks : 60

Part A

*Answer any **ten** questions.*

*Each question carries **1** mark.*

1. State "Law of conservation of Mass".

2. Define nanotechnology.

3. The second ionisation energy is greater than the first. Why?

4. How is Mulliken's electronegativity related to Pauling's value?

5. Define equivalent mass.

6. What is ppb?

7. Define standard solution.

8. What are pH indicators?

9. What procedure is adopted to remove occluded impurities?

10. Give any two advantages of TLC.

11. Give an example for a cation exchanger.

12. Why do we use prefixes in SI system of units?

(10×1=10)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. Write a note on alchemy.

14. Briefly discuss about different branches of chemistry.

15. Explain the advantage of modern periodic table over Mendeleev's table.

16. Explain the concept of effective nuclear charge?

17. Write on permagnometric titrations. Explain the principles involved using equations.

18. Discuss the unit operations involved in gravimetric analysis.

19. Write a note on solvent extraction.

20. What is elution? How can it be done in column chromatography?

21. Write the advantages and applications of HPLC.

$(6\times5=30)$

Part C

*Answer any **two** questions.*

*Each question carries **10** marks.*

22. "Revision of scientific theories are essential when it is unable to dealt with new situations." Justify this statement by takingatom model as an example.

23. State and explain solubility product. How is it applied in the qualitative cation analysis? Explain.

24. Discuss briefly on gas chromatography and its applications.

25. What are errors? Discuss on different types of errors. How do you minimize them?

$(2\times10=20)$