



22102154

QP CODE: 22102154

Reg No : .....

Name : .....

**B.Sc DEGREE (CBCS) REGULAR /IMPROVEMENT / REAPPEARANCE  
EXAMINATIONS, JULY 2022**

**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

2A4165A0

Time: 3 Hours

Max. Marks : 60

**Part A**

*Answer any **ten** questions.*

*Each question carries 1 mark.*

1. What is the importance of revision of scientific theories?
2. Give any two applications of nanotechnology each in the field of medicine and industry.
3. Which element is having highest (i) ionisation energy and (ii) electronegativity?
4. In Pauling's scale, which is the most electronegative element?
5. What are indicators?
6. Give two examples of primary standard.
7. What are pH indicators?
8. No indicator is required for permagnometric titrations. Why?
9. What is the condition for precipitation to occur?
10. Give two examples of solvents used in thin layer chromatography.
11. Which chromatographic technique is used for the demineralisation of water?
12. Convert 976 pm to nanometers.

(10×1=10)

**Part B**

*Answer any **six** questions.*





*Each question carries 5 marks.*

13. Differentiate hypothesis, law and theory.
14. Briefly explain the evolution of chemistry.
15. State modern periodic law. What is the cause of periodicity?
16. Briefly explain Fajan's rules.
17. Differentiate between valency and oxidation number with suitable examples.
18. How can the interfering anions in inorganic qualitative analysis be eliminated?
19. Discuss the unit operations involved in gravimetric analysis.
20. Discuss briefly on the types of stationary and mobile phase in gas chromatography.
21. Discuss on the different types of detectors used in high performance liquid chromatography.

(6×5=30)

### **Part C**

*Answer any **two** questions.*

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

22. Discuss about various branches of chemistry.
23. Explain the following
  - (i) Fractional distillation
  - (ii) Solvent extraction
  - (iii) Crystallisation
  - (iv) Filtration
24. Give a brief account on the principle, experimental techniques and the applications of column chromatography.
25. The following concentrations of Fe were reported in a set of measurements: 20.2, 20.4, 20.3, 20.1, 19.9, 20.0, and 19.8 ppm. Calculate (a) mean, (b) average deviation from mean, (c) standard deviation, (d) relative standard deviation, (e) coefficient of variation, and (f) variance.

(2×10=20)

