

(FOR THE CANDIDATES ADMITTED

SUB CODE **22UCY5E1**

DURING THE ACADEMIC YEAR 2022 ONLY)

REG.NO.

**N.G.M. COLLEGE (AUTONOMOUS): POLLACHI**

**END-OF-SEMESTER EXAMINATIONS: NOVEMBER 2024**

**B.Sc Chemistry**

**MAXIMUM MARKS: 50**

**SEMESTER:V**

**TIME : 3 HOURS**

**PART - III**

**22UCY5E1 – TITLE: ANALYTICAL CHEMISTRY- I**

**SECTION – A**

**(10 X 1 = 10 MARKS)**

**ANSWER THE FOLLOWING QUESTIONS.(K1)**

1. Which of the following are positional averages?

- a) Arithmetic mean    b) Median    c) Geometric mean    d) more than one of the above

2. Which of the following gravimetric analysis uses temperature as a function to measure a material's physical and chemical properties?

- a) Electrogravimetry    b) Thermogravimetry  
c) Volatilisation gravimetry    d) Precipitation gravimetry

3. What does a polarimeter measure?

- a) Polarity of the substance    b) Angle of rotation of an optical active compound  
c) Concentration of the substance    d) pH of the substance

4. The diffusion current is measured in late life period of mercury drop in

- a) Pulsed polarography    b) Differential pulsed polarography  
c) Tast polarography    d) Voltametry

5. Chromatography is a physical method that is used to separate and analyse \_\_\_\_\_

- a) Simple mixtures    b) complex mixtures    c) Viscous mixtures    d) Metals

**ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES**

**(K2)**

6. To conduct t-test which types of softwares can be utilized

7. Thermal analysis is defined as \_\_\_\_\_

8. Which fuel is used in flame photometry?

9. The diffusion current in the polarography depends on \_\_\_\_\_

10. In Column chromatography, the stationary phase is made of \_\_\_\_\_ and the mobile phase is made of \_\_\_\_\_

**(CONTD .... 2)**

**SECTION – B****(5 X 3 = 15 MARKS)****ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)**

11. a) Classify the types of errors.  
(OR)  
b) Brief account on precipitation methods
12. a) Give the principles of Thermogravimetry analysis.  
(OR)  
b) List out the application of Thermometric analysis
13. a) Compile a note on turbidimetric titrations.  
(OR)  
b) Discuss the theory of flame photometry
14. a) Elaborate about dropping mercury electrode  
(OR)  
b) Propose the advantages and disadvantages of polarography.
15. a) Describe about RF value and experimental details of paper chromatography.  
(OR)  
b) Write a note on Ion exchange chromatography.

**SECTION – C****(5 X 5 = 25 MARKS)****ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.(K4/K5)**

16. a) Compile a note on sampling.  
(OR)  
b) Infer Organic precipitants.
17. a) Make a note on factors affecting TGA curves.  
(OR)  
b) Describe the DTA curves with suitable block diagram.
18. a) Build the theory and instrumentation of Polarimetry.  
(OR)  
b) Write a note on Nephelometry and Turbidimetry
19. a) List out the Significance of Ilkovic equation  
(OR)  
b) Make a note on Half wave potential.
20. a) Illustrate the factors affecting the column efficiency and applications in column chromatography.  
(OR)  
b) Discuss the theory and applications of gas chromatography.

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**22UCY5E1/-**