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(FOR THE CANDIDATES ADMITTED

SUB CODE **23PCY4E7**

DURING THE ACADEMIC YEAR 2025 ONLY)

REG.NO. :

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

**END-OF-SEMESTER EXAMINATIONS: MAY 2025**

**M.Sc CHEMISTRY**

**MAXIMUM MARKS: 75**

**SEMESTER IV**

**TIME: 3 HOURS**

**PART - III**

**23PCY4E7 – PHYTOCHEMICAL TECHNIQUES AND HEALTH CHEMISTRY**

**SECTION – A**

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

**ANSWER THE FOLLOWING QUESTIONS.**

**(K1)**

1. Which extraction method is best for heat-sensitive compounds?  
A. Hot extraction B. Cold extraction C. Steam distillation D. Fractional distillation
2. Why is slow cooling preferred in crystallization?  
A. To prevent crystallization B. To form large, pure crystals C. To increase impurity concentration D. To evaporate the solvent quickly
3. TLC is used to determine:  
A. Molecular weight B. Purity of a compound C. Functional groups D. Solubility
4. Which vitamin is essential for blood clotting?  
A. Vitamin A B. Vitamin K C. Vitamin C D. Vitamin E
5. Goiter is caused due to the deficiency of:  
A. Calcium B. Iodine C. Iron D. Magnesium

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

**(K2)**

6. What is the principle of liquid-liquid extraction?
7. Define crystallization
8. What are the different purification techniques used in chemical analysis?
9. Name two types of malnutrition
10. How does vitamin D deficiency lead to rickets?

**SECTION – B**

**(5 X 5 = 25 MARKS)**

**ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.**

**(K3)**

11. a) Explain the process and applications of lyophilisation  
**(OR)**  
b) Analyze the principle and applications of rotary evaporation
12. a) Estimate the experimental aspects of simple crystallization  
**(OR)**  
b) Determine how phytochemicals are identified using GC-MS and LC-MS

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

13. a) Describe the principle and procedure of the DPPH assay for antioxidant activity  
**(OR)**  
b) What are proximate methods of analysis? Explain their importance
14. a) Outline the importance of sanitation in maintaining health  
**(OR)**  
b) Classify vitamins and explain their biological functions
15. a) Show the role of food toxicants in causing cancer  
**(OR)**  
b) Relationship between vitamin deficiencies and common diseases

**SECTION – C** **(5 X 8 = 40 MARKS)**

**ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS.**

**(K4 (Or) K5)**

16. a) Compare and contrast different distillation techniques  
**(OR)**  
b) Examine the process, and applications of liquid-carbon dioxide extraction
17. a) Discuss the process of crystallization, including solvent selection, steps, and advantages  
**(OR)**  
b) Explain the extraction and separation of pigments and flavonoids
18. a) Estimate the different purification techniques and their significance in chemistry  
**(OR)**  
b) Illustrate in vitro biological assays used for drug testing
19. a) Elaborate the classification and biological functions of carbohydrates  
**(OR)**  
b) How does the food pyramid help in maintaining a balanced diet? Explain with example
20. a) Evaluate the different types of toxicants found in food and their health effects  
**(OR)**  
b) Discuss how do lifestyle and diet contribute to diabetes and anemia?

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