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(FOR THE CANDIDATES ADMITTED **24PCY4E7**

DURING THE ACADEMIC YEAR 2023-2024 ONLY) **REG.NO.:**

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

END-OF-SEMESTER EXAMINATIONS: APRIL 2026

M.Sc. CHEMISTRY **MAXIMUM MARKS: 75**

SEMESTER: IV **TIME: 3 HOURS**

MAJOR ELECTIVE –III PHYTOCHEMICAL TECHNIQUES AND HEALTH CHEMISTRY

SECTION – A (10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS (K1)

1. Cold extraction is generally carried out by

(a) Soxhlet apparatus (b) Maceration (c) Steam distillation (d) Fractional distillation

2. The NIST library is mainly used for

(a) Sample preparation (b) Instrument calibration

(c) Spectral comparison and identification (d) Solvent selection

3. Which technique is used for preliminary identification of phytochemicals?

(a) GC-MS (b) TLC (c) Centrifugation (d) Distillation

4. Which of the following is a fat-soluble vitamin?

(a) Vitamin B_1 (b) Vitamin C (c) Vitamin D (d) Vitamin B_{12}

5. Deficiency of Vitamin C causes

(a) Scurvy (b) Rickets (c) Pellagra (d) Beriberi

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES (K2)

6. Define lyophilization.

7. What is meant by simple crystallization?

8. What is the principle of thin layer chromatography?

9. Define malnutrition.

10. What are toxicants in food?

SECTION – B (5 X 5 = 25 MARKS)

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

(K3)

11. a) Explain the principle and procedure of liquid–liquid extraction.

(OR)

b) Describe rotary evaporation and its advantages.

12. a) Explain the experimental aspects of crystallization.

(OR)

b) Write a note on pigment extraction from natural sources.

13. a) Describe colour tests used for preliminary identification of plant extracts.

(OR)

b) Explain the theory of melting point determination.

14. a) Explain the food pyramid and its importance.

(OR)

b) Classify carbohydrates and mention their biological functions.

15. a) Explain types and causes of cancer.

(OR)

b) Write short notes on jaundice and anemia.

SECTION – C (5 X 8 = 40 MARKS)

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

(K4 (Or) K5)

16. a) Discuss cold and hot extraction techniques with their principles, procedures and limitations.

(OR)

b) Explain the principle and technique of steam and fractional distillation methods.

17. a) Describe the principle, procedure and applications of GC-MS in phytochemical analysis.

(OR)

b) Explain the separation and identification of flavonoids.

18. a) Discuss fluorescent characteristics used in purification and identification of natural products.

(OR)

b) Explain in-vitro biological assays for antibacterial, antifungal and anticancer activities

19. a) Discuss health, hygiene and over nutrition with their causes, remedies and sanitation.

(OR)

b) Classify vitamins and explain their biological functions.

20. a) Discuss the causes and symptoms of rickets, scurvy, beriberi and night blindness deficiency diseases.

(OR)

b) Explain the causes of common diseases diabetes, goiter, gout, ulcer, fever, and vomiting.