

Term End External Examination 4th Semester (Session- July 2024)

Subject: Food Science & Technology

Course No and Title: FSTC3422M/Food Analytical Techniques

Time: 2.15 hours Max Marks:100 Min. Marks:40Section A: Objective Type Questions**Q1. Choose the appropriate Answer: (8x1.5=12)**

- i. The columns used for chromatography are made up of:

A Glass	B Stainless Steel
C Iron	D Both (A) and (B)
- ii. In HPLC, P stands for

A Pressure	B Performance
C Preference	D Periodic
- iii. Presence of heavy metals in chocolates can be detected by:

A Atomic Absorption Spectroscopy	B UV-visible Spectroscopy
C NMR Spectroscopy	D None of the Above
- iv. _____ is used for the detection of charged species within a sample:

A Atomic Absorption Spectroscopy	B UV-visible Spectroscopy
C Mass Spectroscopy	D NMR Spectroscopy
- v. Surface sensing of a sample using the atomic forces between an extremely sharp tip and the sample surface is called:

A Scanning electron microscopy	B Transmission electron microscopy
C Atomic force microscopy	D None of the above
- vi. _____ is a secondary textural attribute:

A Hardness	B Springiness
C Cohesiveness	D Gumminess
- vii. PAGE is used for the characterization of

A Carbohydrates	B Proteins
C Fats	D All of the Above
- viii. In PCR, 'C' stands for

A Chain	B Colony
C Carbon	D Counting

Section-B: Descriptive Type Questions (Short Type)**Q2: Answer all the Questions (8 x 4 =32)**

- i. What is the working principle of paper chromatography?
- ii. Enlist the applications of gas chromatography.
- iii. Define Beer Lambert law.
- iv. What are the applications of flame photometry?
- v. What are the advantages of Scanning Electron Microscope over a local optical microscope?
- vi. What is the working principle of rheometers?
- vii. How is the phase transition detected in DSC?
- viii. How is the gel prepared for conducting SDS PAGE?

Section – C: Descriptive Type Questions (Medium Type)**Answer all the questions: (4 x 7=28)****Q 3.** Describe the role of a food analyst in food processing industry.**OR**

Write a note on 'Thin Layer Chromatography' chromatography.

Q 4. Discuss the working of mass spectroscopy.**OR**

Describe the principle of nuclear magnetic resonance spectroscopy.

Q 5. Discuss the working of a farinograph.**OR**

What are primary textural attributes of foods?

Q6. What is the principle of ELISA? What are its different types?**OR**

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Describe the principle of generation of x-rays used for X-Ray Diffractometry (XRD).

Section – D: Descriptive Type Questions (Long Type)

Answer any two of the following: (2 x 14=28)

- Q7.** Describe the principle and equipment used for HPLC.
- Q8.** Discuss Raman Spectroscopy.
- Q9.** Explain the working of Tristimulus Color System.
- Q10.** Explain the principle and working of Particle Size Analysis (DLS)?