



KERALA AGRICULTURAL UNIVERSITY
B.Tech.(Food Technology) 2022 Admission
V Semester Final Examination – January 2025

Pafe.3126

Instrumental Techniques in Food Analysis (2+1)

Marks: 50
Time: 2 hours

I Fill in the blanks (10x1=10)

1. The source in AAS is -----
2. The detectors used for HPLC and GC are ----- and -----
3. ----- is used to increase shelf life of food item
4. ----- Technique Identifying unknown compounds by the mass and mass fragmentation pattern
5. ----- and ----- The bonds of a molecule experience various types of vibrations

Define the following

6. Cyclic voltammetry
7. Beer – Lambert's law
8. Acoustic sensors
9. Electrophoresis
10. TPA analysis

II Write short notes on ANY FIVE of the following (5x2=10)

1. Compare the HPLC and GC in food Analysis
2. Write the differences between accuracy and precision
3. What is the importance of rheological analysis?
4. Write the significance of impedance techniques for microbial assay
5. Which Spectroscopic technique is used for analyzing the concentration of metals and minerals in food products?
6. What is thermo metric sensors
7. What is the working principle of radiation thermometer?

III Answer ANY FIVE of the following (5x4=20)

1. Discuss about Electronic nose and Tongue.
2. Describe different types of Immunosensors
3. Explain theory of IR absorption
4. Explain the working principle of cyclic voltammetry with a neat diagram.
5. What are chemically sensitive semiconductors? Explain with an example
6. Write the difference between atomic absorption spectroscopy and atomic emission spectroscopy. How these techniques are useful in Food analysis?
7. What are sensors? Explain the different types of oxygen sensors.

IV Write an essay on ANY ONE of the following (1x10=10)

1. Explain the different parts and working of Atomic absorption spectroscopy
2. Explain the components of HPLC and which different food products can be determined with the help of HPLC.
