



KERALA AGRICULTURAL UNIVERSITY
B. Tech.(Food Technology) 2023 & previous admission
V Semester Final Examination - January 2026

Pafe.3126

Instrumental Techniques in Food Analysis (2+1)

Marks: 50

Time: 2 hours

I Answer the following (10x1=10)

1. Define Rf value.
2. Name two detectors used in HPLC.
3. Define accuracy of an analysis.
4. Name any two acids used in wet ashing.
5. Define thixotropy.

Fill in the blanks

6. The electromagnetic radiation used in ESR spectroscopy is

Match the following

7. Photo diode	Atomic absorption spectroscopy
8. Flame ionization detector	UV-Visible spectrophotometer
9. Cathode lamp	Crude Protein determination
10. Kjeldahl method	Gas chromatography

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

1. What is the importance of determination of moisture content in food sample?
2. Principle of gel filtration chromatography
3. Describe Newtonian and non-Newtonian fluids.
4. Brief about cationic and anionic exchangers.
5. Explain PAGE.
6. Describe ultracentrifugation.
7. What are biosensors? Give an example.

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

1. Describe briefly about proximate analysis of food.
2. Explain isoelectric focusing.
3. Write brief notes on acoustic, optical and immune sensors.
4. Describe electronic noses.
5. Principle and applications of affinity chromatography
6. Briefly explain about the immune assay techniques in food analysis.
7. Describe the instrumentation of UV-visible spectroscopy with a schematic diagram.

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

1. Explain in detail, the principles and instrumentation of atomic absorption spectroscopy.
2. Elaborate the principle, methodology and applications of High Performance Liquid Chromatography.
