

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted during the academic year 2016 – 2017 & thereafter)

B.Voc. DEGREE EXAMINATION, APRIL 2024
FOOD PROCESSING AND QUALITY CONTROL
FOURTH SEMESTER

COURSE : MAJOR CORE
PAPER : ANALYTICAL TECHNIQUES IN FOOD QUALITY ASSURANCE
SUBJECT CODE : 16VF/VM/AT46
TIME : 5 HOURS

MAX.MARKS: 100
(Theory: 50marks +Practical: 50 marks)

SECTION – A

ANSWER ALL QUESTIONS:

(20 X 1 = 20)

I Choose the Correct answer:

1. In thin layer chromatography, the stationary phase is _____.
a) solid b) liquid c) ion d) gas
2. Hardness is due to the presence of _____ salts.
a) Calcium and Magnesium ions c) Tungsten and Zirconium ions
b) Sodium and Potassium ions d) None of the above
3. Abbe's refractometer is a _____ type of refractometer.
a) Benchtop b) traditional c) handheld d) none of the above
4. Which of the following is not used as a detector in Flame emission photometers?
a) Photovoltaic cells c) Chromatogram
b) Photoemissive cells d) Photomultiplier tubes
5. What is the wavelength range corresponding to UV-visible region?
a) 400 – 800 nm b) 200 – 400 nm c) 200 – 800 nm d) 400 – 800 nm

II Fill in the blanks:

6. Turbidity is measured using a _____.
7. Functional groups responsible for light absorption are called _____.
8. The chlorides and sulphates of calcium and magnesium cause _____.
9. Temperatures vs. _____ is measured in differential scanning calorimetry.
10. Total dissolved solid content can be reduced by _____.

III State whether True or False:

11. Thermally stable samples can be analysed by Gas chromatography.
12. Beer Lambert's law can be used for both dilute and concentrated solutions.
13. Column chromatography is a type of liquid-liquid chromatography technique.
14. Viscometry can be used to determine the pH of a water sample.
15. The Karl-Fischer titration is used to determine the moisture content in food samples.

IV Answer in a sentence:

16. What is Chemical Oxygen Demand?
17. Give one advantage of High Performance Liquid Chromatography.
18. Define retention factor.
19. What is the mobile phase in Gas chromatography?
20. What is the Becke line method?

SECTION B**Answer any SIX questions:****(6 x 3 = 18)**

21. Explain the principle of photolorimetry.
22. Differentiate between stationary and mobile phase.
23. Discuss the principle of Fluorimeter.
24. Define Viscometry and Refractive index.
25. Give any two applications of chromatography.
26. Define hardness. Differentiate between permanent and temporary hardness.
27. What is water quality monitoring? What is its impact on food safety?
28. Define elution and retention time.
29. What is the principle of paper chromatography?
30. State Beer-Lambert's law. Give the equation for the same.

SECTION C**Answer any TWO questions:****(2 x 6 = 12)**

31. Explain the principle and instrumentation of Flame photometry. How is sodium estimated using Flame photometer?
32. Discuss the instrumentation of a UV-visible double beam spectrophotometer with a neat diagram.
33. Explain the principle and working of high performance liquid chromatography.
34. Discuss the importance of water in food processing.
