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

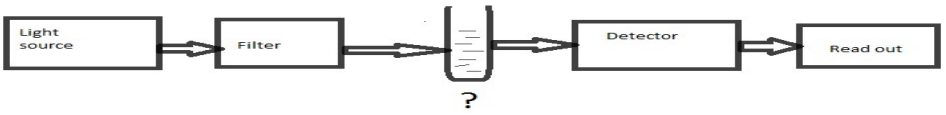
SUBJECT CODE: 16VF/VM/AT46
B.Voc. DEGREE EXAMINATION, APRIL 2022
FOOD PROCESSING AND QUALITY CONTROL
FOURTH SEMESTER

COURSE : MAJOR CORE
PAPER : ANALYTICAL TECHNIQUES IN FOOD QUALITY ASSURANCE
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 the diagram of single beam photometer given below, identify the component that is not



marked.
a) Monochromator b) Absorption filter c) Sample holder d) Interference filter

2. In paper chromatography the stationary phase is _____.
a) Liquid b) Paper c) Gas d) Ion
3. In Flame emission photometers, the measurement of _____ is used for quantitative analysis.
a) Colour b) Intensity c) Velocity d) Frequency
4. Fluorescence efficiency in most molecules increases with
a) Increasing temperature b) Increasing solvent viscosity
c) Increasing quencher concentration d) None of the above
5. The following cause alkalinity as well hardness in natural water.
a) Calcium carbonate b) Calcium bicarbonate c) Magnesium carbonate d) All of the above

II Fill in the blanks:

6. Lambert's law states that the intensity of light decreases with respect to _____
7. The heart of the gas chromatography system is _____.
8. Becke line method was used to determine the ri and was proposed by _____
9. Temporary hardness is caused due to _____.
10. Pure water is known to be _____ electrolyte.

III State whether True or False:

11. Colorimeters are used in applications where great accuracy is required.
12. The stationary phase could be a viscous liquid coated over a surface of solid particles.
13. In Total consumption burner, only samples of particular droplet size will enter the burner.
14. The Total dissolved solids (TDS) can be reduced by reverse osmosis.
15. Water activity is inversely proportional to density of water.

IV Answer in a sentence:

16. Wavelength.
17. Rf value.

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18. Photodetector
19. pH
20. Nephelometer

SECTION B

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

21. Applications of column chromatography.
22. What is the relation between optical density and transmittance?
23. Mention some of the advantages of colorimeter.
24. What is meant by the term developing in chromatography? Explain
25. Differences between High performance liquid chromatography and Gas Chromatography.
26. Give the principle and instrumentation of fluorimetry.
27. Depict the process flow of flame photometer with a diagram
28. Explain about the quality standards used for drinking water.
29. If a dehydrated porous absorptive food is soaked in a solution whose viscosity is not too high to penetrate – explain the statement.
30. Uses of Benchtop refractometer.

SECTION C

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

31. Give a block diagram for instrumentation of UV spectrophotometer and explain its working in detail.
32. Define viscosity and explain about different types of viscometer used in testing food samples.
33. What is Beer – lambert's law and explain in detail about the theory of colorimetry?
34. Why is water very essential for food industries? List out its importance.

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