

**STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 86**  
(For candidates admitted from the academic year 2023 – 2024 and thereafter)

**B.VOC DEGREE EXAMINATION, APRIL 2026**  
**FOOD PROCESSING AND QUALITY CONTROL**  
**FOURTH SEMESTER**

**COURSE : MAJOR CORE**  
**PAPER : FOOD ANALYSIS AND INSTRUMENTATION-I**  
**SUBJECT CODE : 23/VF/VM/FI46**  
**TIME : 2HOURS**

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

<b>SECTION A</b>			
<b>Q. No.</b>	<b>Answer ALL questions:</b>	<b>(5 x 2 = 10)</b>	<b>CO KL</b>
1.	Define a buffer solution with an example.		1 1
2.	What is meant by non-enzymatic browning?		1 1
3.	State the significance of the Reichert–Meissl value.		1 1
4.	List the sources and functions of Vitamin C.		1 1
5.	What are total solids in condensed milk?		1 1
<b>SECTION B</b>			
<b>Q. No.</b>	<b>Answer ALL questions:</b>	<b>(4 x 3 = 12)</b>	<b>CO KL</b>
6.	A solution contains 2 g of sucrose in 400 mL of water. Find the percentage sucrose concentration (w/v).		2 2
<b>(OR)</b>			
7.	Calculate the mass of NaCl required to prepare 250 mL of 0.2 M solution. (Molecular weight of NaCl = 58.5 g/mol).		2 2
8.	Write a short note on modified food starch.		2 2
<b>(OR)</b>			
9.	Discuss the classification of carbohydrates with examples.		2 2
10.	Explain the importance of refractive index in oil analysis.		3 3
<b>(OR)</b>			
11.	Describe the properties and importance of essential fatty acids.		3 3
12.	Write the principle of Gerber’s method for fat estimation in milk.		3 3
<b>(OR)</b>			
13.	Write a short note on the analysis of butter.		3 3
<b>SECTION C</b>			
<b>Q. No.</b>	<b>Answer ALL questions:</b>	<b>(2 x 4 = 8)</b>	<b>CO KL</b>
14.	Explain the different parts and working of a pH meter.		4 4
<b>(OR)</b>			
15.	Discuss the chemical reactivity of amino acids, including the ninhydrin reaction.		4 4
16.	Explain the principle and significance of saponification value.		4 4
<b>(OR)</b>			
17.	Describe the extraction and estimation of Vitamin E in curry leaves.		4 4

<b>SECTION D</b>				
<b>Q. No.</b>	<b>Answer ALL questions:</b>	<b>(2 x 10 = 20)</b>	<b>CO</b>	<b>KL</b>
18.	i) Explain the significance of water activity in food quality and preservation. <b>(7 marks)</b> ii) Calculate the ppm concentration when 25 mg of KCl is dissolved in 2 L of water. <b>(3 marks)</b>		5	5
<b>(OR)</b>				
19.	i) Describe the classification of proteins and explain the theory of protein denaturation with suitable examples. <b>(7 marks)</b> ii) Briefly explain the classification of lipids with examples. <b>(3 marks)</b>		5	5
20.	Discuss the extraction and estimation of carotene in carrots and explain its importance in food analysis.		5	6
<b>(OR)</b>				
21.	i) Explain the determination of water content and ash content in cheese. <b>(6 marks)</b> ii) Discuss the role of chemical analysis in assessing the quality and detecting adulteration in milk and dairy products. <b>(4 marks)</b>		5	6

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