

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

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

COURSE : MAJOR CORE
PAPER : ADVANCEMENTS IN FOOD PROCESSING AND TECHNOLOGY
SUBJECT CODE : 23/VF/VM/AT66
TIME : 3 HOURS **MAX. MARKS: 100**

SECTION A				
Q. No.	Answer ALL questions:	(10 x 2 = 20)	CO	KL
1.	Define minimal processing.		1	1
2.	List any two examples of minimally processed foods.		1	1
3.	Expand PEF.		1	1
4.	State the principle of Pulsed Electric Field processing.		1	1
5.	Define food irradiation.		1	1
6.	Name any two applications of High Pressure Processing.		1	1
7.	Define ohmic heating.		1	1
8.	State one advantage of microwave processing.		1	1
9.	Define vacuum cooling.		1	1
10.	List any two innovations in food refrigeration.		1	1
SECTION B				
Q. No.	Answer ALL questions:	(8 x 5 = 40)	CO	KL
11.	A) Explain the concept and objectives of minimal processing of fruits and vegetables. (OR) B) Describe the role of Modified Atmosphere Packaging (MAP) in extending the shelf life of minimally processed foods.		2	2
12.	A) Summarize the working principle of Pulsed Electric Field (PEF) technology in food preservation. (OR) B) Discuss the applications of food irradiation in improving food safety and quality.		2	2
13.	A) Illustrate the basic principle and equipment used in High Pressure Processing (HPP). (OR) B) Explain the mechanism of microbial inactivation in ohmic heating.		2	2
14.	A) Describe the process of vacuum cooling and its advantages in food processing. (OR) B) Summarize the importance of antifreeze proteins in controlling the freezing process of foods.		2	2
15.	A) Apply minimal processing techniques to extend the shelf life of fresh-cut fruits. (OR) B) Demonstrate how Pulsed Electric Field (PEF) technology can be used for preservation of liquid foods.		3	3

16.	A) Demonstrate how Pulsed Electric Field (PEF) technology can be used for preservation of liquid foods. (OR) B) Implement ohmic heating for enzyme inactivation in fruit juices.	3	3
17.	A) Apply microwave processing to enhance the quality of packaged food products. (OR) B) Demonstrate the procedure for decontamination of food packaging materials using thermal methods.	3	3
18.	A) Use ultrasonic assistance in freezing to improve the texture of frozen foods. (OR) B) Apply vacuum cooling in post-harvest handling of leafy vegetables.	3	3
SECTION C			
Q. No.	Answer any TWO questions : (2 x 10= 20)	CO	KL
19.	Analyze the effectiveness of non-thermal processing technologies in preserving food quality and safety.	4	4
20.	Examine the impact of Pulsed Electric Field processing on the physicochemical and microbiological properties of foods.	4	4
21.	Differentiate between High Pressure Processing and food irradiation with respect to principle, applications, and limitations.	4	4
22.	Investigate the role of innovative refrigeration techniques in controlling ice crystal formation and maintaining food texture.	4	4
SECTION D			
Q. No.	Answer any ONE questions : (1 x 20 = 20)	CO	KL
23.	Evaluate the suitability of using radiations and chemicals for decontamination of surfaces.	5	5
24.	Recommend and justify an appropriate advanced processing technology for different categories of foods (liquids, solids, ready-to-eat products, and frozen foods) based on quality retention, shelf life extension, and regulatory compliance.	5	5
