

**PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)**

**BVoc DEGREE EXAMINATION MAY 2025
(Third Semester)**

Branch – FOOD PROCESSING TECHNOLOGY

UNIT OPERATIONS IN FOOD PROCESSING

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(10 × 1 = 10)

Question No.	Question	K Level	CO
1	Which of the following is an example of heat transfer by radiation? a) Heating a metal rod in a flame b) Boiling water in a vessel c) Air circulating in a room d) Sun warming the Earth	K1	CO1
2	What is the primary reason for using refrigeration in food processing? a) To enhance the flavor of food b) To slow down the growth of microorganisms c) To increase the water content of food d) To remove unwanted chemicals	K2	CO1
3	Which of the following factors does NOT significantly affect the rate of evaporation in food processing? a) Temperature b) Surface area c) Air pressure d) Food color	K1	CO2
4	Which of the following factors affects the rate of crystallization in food products? a) Temperature of the solution b) Purity of the solution c) Agitator speed d) All of the above	K2	CO2
5	Centipoise is the unit of a) Surface tension b) Shear stress c) Shear strain d) Viscosity	K1	CO3
6	What is the application of Bourdon Gauge? a) To control the pressure of flow of fluid flowing through pipe b) To measure temperature of flow of fluid flowing through the pipe c) To measure pressure of a fluid flowing through pipe d) To measure rate of flow of fluid flowing through pipe	K1	CO3
7	Which of the following is an example of leaching in food production? a) Boiling vegetables to enhance their color b) Steeping tea leaves in hot water c) Baking bread to develop its crust d) Freezing fruits to maintain freshness	K1	CO4
8	What is the primary purpose of distillation in food processing? a) To enhance the nutritional value of food b) To separate and purify volatile components from liquid mixtures c) To increase the shelf life of food products d) To change the color of food items	K2	CO4
9	Which of the following filtration techniques is most effective for separating microorganisms from liquids in food processing? a) Gravity filtration b) Membrane filtration c) Sand filtration d) Depth filtration	K2	CO5
10	Which of the following statements about filtration in food processing is true? a) Filtration can only be used for liquids and not for solids. b) Filtration is ineffective in removing microorganisms from food products. c) Filtration can improve the taste of food by removing undesirable particles. d) Filtration is a process that relies solely on heat to separate components.	K2	CO5

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SECTION - B (35 Marks)Answer **ALL** questions**ALL** questions carry **EQUAL** Marks

(5 × 7 = 35)

Question No.	Question	K Level	CO
11.a.	Explain the various temperature measuring devices.	K1	CO1
	(OR)		
11.b.	Explain any two types of heat exchanger with a simple sketch.		
12.a.	Mention the applications of agitated film evaporator along with its working.	K2	CO2
	(OR)		
12.b.	Describe with a neat sketch about the walker vacuum crystallizers.		
13.a.	List out and define all the thermodynamic properties of fluids.	K2	CO3
	(OR)		
13.b.	Explain the fluid flow measuring devices.		
14.a.	Select a suitable mixer for mixing highly viscous food products and explain about the mixer.	K3	CO4
	(OR)		
14.b.	Select and explain one suitable distillation method for alcohols.		
15.a.	Compare constant rate and constant pressure filtration methods	K3	CO5
	(OR)		
15.b.	Choose one application that uses centrifugal separators for separation purpose. Elaborate the working mechanism.		

SECTION -C (30 Marks)Answer **ANY THREE** questions**ALL** questions carry **EQUAL** Marks

(3 × 10 = 30)

Question No.	Question	K Level	CO
16	Write a note steady state and unsteady heat transfer along with suitable examples and also explain reason for fouling in heat exchanger and its preventive measures.	K1	CO1
17	Describe about falling film and raising film evaporator.	K1	CO2
18	Explain the various pressure measuring devices.	K2	CO3
19	Describe about leaching mechanism and the suitable equipments used along with its applications.	K2	CO4
20	Describe about gas cyclones and its applications in food processing	K2	CO5

Z-Z-Z

END