

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BVoc DEGREE EXAMINATION DECEMEBR 2024
(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 conduction? 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	In a heat exchanger, which of the following configurations maximizes heat transfer efficiency? a. Parallel flow b. Counterflow c. Crossflow d. Adiabatic flow	K2	CO1
3	What is the main purpose of using an evaporator in food processing? a. To sterilize food products b. To remove water by turning it into vapor c. To cool down food products d. To freeze the food for preservation	K1	CO2
4	Which of the following methods is commonly used to initiate crystallization in a crystallizer? a. Cooling the solution b. Increasing pressure c. Adding a solvent d. Stirring the mixture rapidly	K2	CO2
5	Poise is the unit of a. Surface tension b. Shear stress c. Shear strain d. Viscosity	K1	CO3
6	What is the application of Venturimeter? 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	K2	CO3
7	What is the distillate in distillation? a. Vapor collected from the mixture b. Liquid present in the distillation column c. Vapor introduced during distillation process d. Liquid introduced during distillation process	K1	CO4
8	The force used for mixing-by-mixing equipment for pastes and dough is _____ a. Centrifugal smearing b. Impact c. Tumbling d. All of the mentioned	K2	CO4
9	Which of the following is not the driving force in filtration? a. Vacuum centrifuge b. Pressure c. Temperature d. Gravity	K1	CO5

Cont...

10	Which law is related to sedimentation? a. Gauss's law b. Stoke's law c. Dalton's law d. Newton's law	K1	5
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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.	List the various refrigerants and its characteristics.	K4	CO1
	(OR)		
11.b.	Examine the different types of flow in any heat exchanger with a simple sketch.		
12.a.	Interpret the mass balance and energy balance equation for a simple evaporator.	K2	CO2
	(OR)		
12.b.	Describe with a neat sketch about the falling film evaporators along with its advantages.		
13.a.	List out and discuss the properties of fluids.	K4	CO3
	(OR)		
13.b.	Examine on the pressure measuring devices.		
14.a.	Select a suitable mixer for mixing pastes and high viscous products and explain the mixer.	K3	CO4
	(OR)		
14.b.	Classify the types of distillation and explain about one such distillation methods.		
15.a.	Distinguish filtration and sedimentation	K3	CO5
	(OR)		
15.b.	Elaborate about any one sedimentation method.		

SECTION -C (30 Marks)

Answer ANY THREE questions

ALL questions carry EQUAL Marks (3 × 10 = 30)

Question No.	Question	K Level	CO
16	Infer on vapor compression refrigeration system with a neat sketch.	K4	CO1
17	Discuss on any one type of crystallizer.	K4	CO2
18	Enumerate the various fluid flow meter devices.	K4	CO3
19	Select a suitable extractor for coarser particle with a suitable example.	K4	CO4
20	Analyze about rotary vacuum filter and also identify the possible suitable product that can be filtered using this rotary vacuum filter.	K4	CO5