

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

**BVoc DEGREE EXAMINATION DECEMBER 2024  
(First Semester)**

**Branch – FOOD PROCESSING TECHNOLOGY**

**FOOD SCIENCE**

Time: Three Hours

Maximum: 75 Marks

**SECTION-A (10 Marks)**

Answer **ALL** questions

ALL questions carry **EQUAL** marks

(10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Blanching of food items is done mainly to a) kill the micro organisms      (b) remove dirt (c) prevent sticking of food      (d) inactivate enzymes	K1	CO1
	2	All are sources of Vitamin-B <sub>12</sub> except (a) egg      (b) liver      (c) yeast      (d) amaranths	K2	CO 1
2	3	Complete gelatinization of starch takes place at (a) 70-75 degree centigrade      (b) 84-86 degree centigrade (c) 92-96 degree centigrade      (d) 98-100 degree centigrade	K1	CO 2
	4	Digestibility of pulses can be improved by (a) washing      (b) drying (c) roasting      (d) germination	K2	CO 2
3	5	All fruits are adequate in pectin content and acid content for jam preparation except (a) apple      (b) grapes (c) cherries      (d) pears	K1	CO 3
	6	The enzyme involved in the browning of fruits is (a) melanase      (b) peroxidase (c) polyphenolase      (d) estrase	K2	CO 3
4	7	A young chicken of 3-5 months of age of either sex with tender meat is called (a) fryer      (b) roaster (c) stag      (d) stewing chicken	K1	CO 4
	8	Normal freezing point of milk is (a) -0.55° C      (b) -0.01° C. (c) -0.25° C      (d) -0.1° C.	K2	CO 4
5	9	One of the goitrogenic substances present in soya bean is (a) thyrocyante      (b) cytochalasin (c) thyroxidine      (d) isothiocyanates	K1	CO 5
	10	Active compounds in ginger are all except (a) gingerols      (b) shogaols (c) paradols      (d) curcumin	K2	CO 5

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**SECTION - B (35 Marks)**Answer **ALL** questions**ALL** questions carry **EQUAL** Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Explain the functions of food in relation to health.	K2	CO 1
	(OR)			
	11.b.	List down the objectives of cooking.		
2	12.a.	Examine any two preliminary methods that have a high impact on cooking quality of pulses.	K3	CO2
	(OR)			
	12.b.	Examine any two preliminary methods that have a high impact on cooking quality of pulses.		
3	13.a.	Give the classification and nutritive value of vegetables.	K3	CO3
	(OR)			
	13.b.	Classify fruits and give appropriate examples.		
4	14.a.	Discuss the effect of heat salt and enzymes on milk.	K4	CO4
	(OR)			
	14.b.	Egg plays a major role in cookery and bakery. – Justify.		
5	15.a.	Explain the toxins in nuts and oil seeds.	K4	CO5
	(OR)			
	15.b.	Outline the role of spices in Indian cookery.		

**SECTION -C (30 Marks)**Answer **ANY THREE** questions**ALL** questions carry **EQUAL** Marks (3 × 10 = 30)

Module No.	Question No.	Question	K Level	CO
1	16	Compare moist and dry cooking methods.	K4	CO1
2	17	Is processing of pulses good or bad for health? – Discuss.	K3	CO2
3	18	Water soluble pigments are destroyed while cooking - Argue whether the statement is right or wrong.	K4	CO3
4	19	Compare the nutritive value and composition of meat and fish.	K3	CO4
5	20	Demonstrate the stages of sugar cookery and its role in preparing sweets.	K4	CO5

Z-Z-Z END

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**BVoc DEGREE EXAMINATION DECEMBER 2024  
(First Semester)**

**Branch- FOOD PROCESSING TECHNOLOGY**

**PRINCIPLES OF FOOD PROCESSING AND PRESERVATION**

Time: Three Hours

Maximum: 75 Marks

**SECTION-A (10 Marks)**

Answer **ALL** questions

ALL questions carry **EQUAL** marks

(10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Recall the field of science, which deals with the process of prevention of decay of foods. a) Food preservation                      b) Food science c) Food safety                                d) Food processing	K1	CO1
	2	Principle of _____ aids in the preservation by using sugar and salt. a) Osmosis                                      b) Diffusion c) Reverse osmosis                          d) Osmotic diffusion	K2	CO1
2	3	Select the organism that is responsible for spoilage of canned foods. a) <i>Streptococcus</i> b) <i>Clostridium botulinum</i> c) <i>Lactobacillus</i> d) Lactis	K1	CO2
	4	Show the gas which is used for gaseous sterilization. a) Carbon dioxide    b) ethylene    c) propylene    d) Formaldehyde	K2	CO2
3	5	Find the dryer, where the mixture of solids & gas behave like a liquid & solid a) tunnel    b) drum    c) cabinet    d) fluidized bed	K1	CO3
	6	Recall the water activity level of IMF a) 0.7-0.9 b) 0.1 c) 0.6 d) 1.0	K2	CO3
4	7	_____ is the process of changing a frozen food from solid to liquid state by gradual warming. a) Freezer Burn b) Thawing c) Cooling d) Heating	K1	CO4
	8	Name the refrigerant used for cryogenic freezing. a) Oxygen b) silica c) Liquid CO <sub>2</sub> d) Both b and c	K2	CO4
5	9	One rad is equal to _____ of absorbing material. a) 10 <sup>-5</sup> J/g b) 10 <sup>-10</sup> J/ g c) 10 <sup>-6</sup> J/g d) 10 <sup>5</sup> J/g	K1	CO5
	10	Control of water activity for preservation of food is known as _____ a) Hurdle technology    b) mixed technology    c) stumble technology d) multiple technology	K2	CO5

**Cont...**

**SECTION - B (35 MARKS)**

Answer ALL questions

ALL questions carry EQUAL Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Show the reasons for the losses that occur during post harvesting.	K2	CO1
		(OR)		
	11.b.	Outline on different method of food preservation.		
2	12.a.	Choose any one best method of sterilization with pictorial representation.	K3	CO2
		(OR)		
	12.b.	Identify the principle and its application of aseptic processing.		
3	13.a.	Describe the factors affecting drying rate.	K3	CO3
		(OR)		
	13.b.	Explain the role of water activity and its significance in food preservation.		
4	14.a.	Classify the different methods of refrigeration and write any two in detail.	K4	CO4
		(OR)		
	14.b.	Compare the physical and chemical change of frozen foods.		
5	15.a.	List the different type of food additive used in food industry.	K4	CO5
		(OR)		
	15.b.	Examine on Bio- Preservatives & its applications.		

**SECTION -C (30 Marks)**

Answer ANY THREE questions

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

Module No.	Question No.	Question	K Level	CO
1	16	Categorize the different method of food processing with suitable examples.	K4	CO1
2	17	Evaluate the canning process with flow chart with it advantages and disadvantages.	K4	CO2
3	18	Analyze the factors that affecting the osmotic dehydration.	K4	CO3
4	19	Compare the different methods of freezing.	K4	CO4
5	20	Inference on the application and principle of hurdle technology.	K4	CO5

Z-Z-Z END

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**BVoc DEGREE EXAMINATION DECEMBER 2024  
(First Semester)**

**Branch - FOOD PROCESSING TECHNOLOGY**

**FRUIT AND VEGETABLE PRESERVATION**

Time: Three Hours

Maximum: 75 Marks

**SECTION-A (10 Marks)**

Answer **ALL** questions

**ALL questions carry EQUAL marks** (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	What percentage of fruits and vegetables are estimated to be lost post-harvest globally? A) 10-15% B) 20-30% C) 30-50% D) 50-70%	K1	CO1
	2	Which type of fruit is particularly susceptible to post-harvest losses due to its high moisture content? A) Apples B) Bananas C) Oranges D) Berries	K2	CO1
2	3	What is the primary ingredient in traditional tea? A) Coffee beans B) Dried leaves of the Camellia sinensis plant C) Cocoa beans D) Grains	K1	CO2
	4	What is the main function of sugar in soft drinks? A) To increase acidity B) To provide sweetness and enhance flavor C) To preserve freshness D) To improve color	K2	CO2
3	5	What is the primary role of sugar in food preservation? A) To improve color B) To enhance flavor C) To create an environment that inhibits microbial growth D) To increase moisture	K1	CO3
	6	What is the process called when sugar is used to draw out moisture from fruits or vegetables? A) Fermentation B) Osmosis C) Pickling D) Blanching	K2	CO3
4	7	What is the primary purpose of nutraceuticals? A) To replace meals B) To enhance flavor in foods C) To prevent or treat diseases and promote health D) To serve as artificial food colorants	K1	CO4
	8	Which nutrient is often highlighted for its anti-inflammatory properties and is considered a nutraceutical? A) Vitamin C B) Curcumin (from turmeric) C) Calcium D) Fiber	K2	CO4

Cont...

5	9	What is the primary purpose of canning food? A) To enhance flavor B) To extend shelf life by preventing microbial growth C) To increase nutritional content D) To change the texture of food	K1	CO5
	10	Which type of canned food typically requires a higher temperature for processing? A) Vegetables B) Fruits C) Meat D) Sauces	K2	CO5

**SECTION - B (35 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Explain about the Post harvest field techniques.	K1	CO1
	(OR)			
	11.b.	Write about the Post harvest changes in fruits and vegetables.		
2	12.a.	Describe about the processing steps involved in nectar.	K3	CO2
	(OR)			
	12.b.	Identify the role of canning in food processing.		
3	13.a.	Illustrate about Intermediate moisture foods.	K3	CO3
	(OR)			
	13.b.	Demonstrate the processing and preparation of Fruit leather and bar.		
4	14.a.	Analyze the Physiology and biochemistry parameters of of fresh cut fruits and vegetables	K4	CO4
	(OR)			
	14.b.	Illustrate about Nutraceutical and functional foods.		
5	15.a.	Outline the Quality analysis of canned products.	K4	CO5
	(OR)			
	15.b.	Analyze the processing technique behind Fruit and vegetable powders.		

**SECTION - C (30 Marks)**

Answer ANY THREE questions

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

Module No.	Question No.	Question	K Level	CO
1	16	Illustrate about the Post harvest losses.	K4	CO1
2	17	Infer the quality parameters in Fruit juice concentrate.	K4	CO2
3	18	Analyze the economic advantages of dehydrating fruits compared to other preservation methods, such as canning or freezing.	K4	CO3
4	19	Point up about Minimal processing technique.	K4	CO4
5	20	Examine the FSSAI quality specifications and standards for beverages.	K4	CO5

Z-Z-Z END

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**BVoc DEGREE EXAMINATION DECMEBR 2024**  
(First Semester)

Branch – **FOOD PROCESSING TECHNOLOGY**

**CHEMISTRY - I**

Time: Three Hours

Maximum: 75 Marks

**SECTION-A (10 Marks)**

Answer **ALL** questions

**ALL** questions carry **EQUAL** marks

(10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Identify the correct chemical for the treatment of alkali on clothing. a) Ammonium hydroxide                      b) Sodium hydroxide c) Dilute nitric acid                          d) Dilute acetic acid	K1	CO1
	2	The expected value of the amount of ferrous ion in the solution is 0.2948 g. However, the analysis gives 0.3023 g. Then, show the relative error % from the following. a) 2.80 %              b) 2.54 %              c) 2.45 %              d) 2.76 %	K2	CO1
2	3	Choose the correct molecule which consists of triple covalent bond. a) H <sub>2</sub> b) N <sub>2</sub> c) HCl                      d) O <sub>2</sub>	K1	CO2
	4	Show the oxidation number of Mn in KMnO <sub>4</sub> . a) +7                      b) -7                      c) +5                      d) -5	K2	CO2
3	5	One centimeter cube of solution of an electrolyte is known as a) Specific conductance                      b) Molar conductance c) Equivalent conductance                      d) Electrolytic conductance	K1	CO3
	6	If 40 g of NaOH is dissolved in 1 litre of solution, then show the molarity (M) of the resulting solution. a) 2 M                      b) 1 M                      c) 40 M                      d) 20 M	K2	CO3
4	7	Which one terpenoid among the following can be extracted from peppermint oil? a) Geraniol              b) Citral                      c) Menthol                      d) Camphor	K1	CO4
	8	Show the molecular formula of coniine. a) C <sub>8</sub> H <sub>17</sub> N                      b) C <sub>10</sub> H <sub>17</sub> N                      c) C <sub>8</sub> H <sub>27</sub> N                      d) C <sub>8</sub> H <sub>15</sub> N	K2	CO4
5	9	Which one polymer is used to make the nylon threads? a) Polyester                      b) Polyamide c) Polyethylene                      d) Polyvinyl	K1	CO5
	10	Show the natural pesticide among the following. a) DDT                      b) Chlordane c) Toxophene                      d) Rotenone	K2	CO5

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**SECTION - B (35 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	List out the minimum six rules that should be strictly observed in storage and handling of chemicals.	K1	CO1
		(OR)		
	11.b.	List out and explain the various filtration techniques.		
2	12.a.	Explain the two types of hydrogen bonding with suitable examples.	K2	CO2
		(OR)		
	12.b.	Explain the Arrhenius and Bronsted -Lowry concept of acids and bases.		
3	13.a.	Summarize the important of buffer solutions in biological systems.	K2	CO3
		(OR)		
	13.b.	Summarize Faraday's first and second law. Give their importance.		
4	14.a.	Build the biological properties of coniine and nicotine.	K3	CO4
		(OR)		
	14.b.	Apply the isoprene rule to terpenoids and give the classification of terpenoids.		
5	15.a.	How to apply the various plastics in food packaging?	K3	CO5
		(OR)		
	15.b.	Develop the important categories of pesticides.		

**SECTION -C (30 Marks)**

Answer ANY THREE questions

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

Module No.	Question No.	Question	K Level	CO
1	16	Organize the various types of errors and develop some ideas to minimize the errors.	K3	CO1
2	17	Construct the postulates and limitations of VSEPR theory.	K3	CO2
3	18	Solve the problem: 10 g of NaHCO <sub>3</sub> is dissolved in 1000 g of water. If the density of the resulting solution is 1.000 g/ml. Calculate the molarity, molality and mole fraction of the solution. Molecular weight and equivalent weight of NaHCO <sub>3</sub> is 84.00 g/mol.	K3	CO3
4	19	(i) Apply the importance of flavonoids in fruits and vegetables. (5) (ii) Develop the process to isolate the citral and camphor from their natural resources. (5)	K3	CO4
5	20	(i) Organize the classification of polymers based on their sources with examples. (3) (ii) Develop the process of addition and condensation polymerization with examples. (4) (iii) Apply low-density polyethylene and high-density polyethylene to classify the polyethylene. (3)	K3	CO5



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BVoc DEGREE EXAMINATION DECEMEBR 2024  
(Second Semester)  
Branch – FOOD PROCESSING TECHNOLOGY  
**CHEMISTRY - II**

Time: Three Hours

Maximum: 75 Marks

**SECTION-A (10 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	In a simple random sample, every member of the population has - --- chance of being selected a) zero    b) equal    c) single    d) nil	K1	CO1
	2	The conversion of a substance from the solid to the gaseous state without its becoming liquid is known as ---- a) Evaporation    b) Distillation    c) Sublimation    d) Concentration	K2	CO1
2	3	The ----- phase HPLC column is the most versatile and commonly used column a) revised    b) reversed    c) mobile    d) normal	K1	CO2
	4	In TLC separation of mixtures in compounds is based on differences in ----- a) polarity    b) concentration    c) density    d) gravity	K2	CO2
3	5	Antioxidants are a class of substances that help trap and neutralize ---- radicals a) zero    b) free    c) single    d) ionized	K1	CO3
	6	Artificial preservatives are termed as ----- preservatives. a) class I    b) class II    c) class III    d) class IV	K2	CO3
4	7	Foods that contain all nine essential amino acids are called complete ----- a) acids    b) fats    c) proteins    d) sugars	K1	CO4
	8	----- are proteins that act as biological catalysts by accelerating chemical reactions. a) enzymes    b) lipids    c) fats    d) sugars	K2	CO4
5	9	Colour used to indicate wet and biodegradable wastes is ----- . a) red    b) blue    c) yellow    d) green	K1	CO5
	10	Tertiary treatment is a method of wastewater treatment that consists of eliminating ----- pollutants. a) solid    b) biodegradable    c) non-biodegradable    d) liquid	K2	CO5

**SECTION - B (35 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Briefly explain the sample preparation methods with examples.	K2	CO1
		(OR)		
	11.b.	Define crystallization. Describe the methods in crystallization.		

Cont...

2	12.a.	Define chromatography. Illustrate the types of chromatographic techniques.	K3	CO2
	(OR)			
	12.b.	Infer the membrane separation techniques in food industries with examples.		
3	13.a.	Elucidate the structure and action mechanism of anti oxidants.	K3	CO3
	(OR)			
	13.b.	Classify artificial preservatives and give their role in processed foods.		
4	14.a.	Illustrate the structure and properties of amino acids.	K4	CO4
	(OR)			
	14.b.	Compose notes on co enzymes, cofactors and prosthetic groups of enzymes.		
5	15.a.	Interpret the types of pollutants from food industries with examples.	K4	CO5
	(OR)			
	15.b.	Examine the preliminary steps in waste water treatment with a flowchart.		

**SECTION -C (30 Marks)**

Answer ANY THREE questions

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

Module No.	Question No.	Question	K Level	CO
1	16	Justify the types of liquid purification in foods. Elaborate on the applications in food industries.	K4	CO1
2	17	"High-performance liquid chromatography (HPLC) is a powerful tool for product composition testing and quality controlling" – Evaluate and give the applications in food industries.	K4	CO2
3	18	Classify food colourants. Assess the extraction techniques from natural resources.	K4	CO3
4	19	Investigate the Lock and Key model and Induced fit model in enzyme action. Discuss the factors influencing mechanism of enzyme action.	K5	CO4
5	20	Appraise the primary, secondary and tertiary treatments in waste water, with flow diagram.	K5	CO5

Z-Z-Z

END

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**BVoc DEGREE EXAMINATION DECEMBER 2024  
(Third Semester)**

**Branch – FOOD PROCESSING TECHNOLOGY**

**FOOD MICROBIOLOGY AND FERMENTATION TECHNOLOGY**

Time: Three Hours

Maximum: 75 Marks

**SECTION-A (10 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks

(10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Which of the following is an industrially important bacterium used in food fermentation? a) <i>Saccharomyces cerevisiae</i> b) <i>Lactobacillus</i> c) <i>Clostridium</i> d) <i>Aspergillus</i>	K1	CO1
	2	Show the primary classification of microorganisms based on their morphology. a) Shape and color    b) Shape and size c) Size and reproduction    d) Color and reproduction	K2	CO1
2	3	Select the food most prone to spoilage by <i>Staphylococcus aureus</i> . a) Meat    b) Eggs c) Salad dressings    d) Dairy	K1	CO2
	4	Infer the method that is effective in preventing the spoilage of canned foods. a) Pasteurization    b) Vacuum sealing c) Salting    d) Freezing	K2	CO2
3	5	Which of the following control measures is effective against bacterial foodborne illness? a) Boiling water    b) High-pressure processing c) Freezing food    d) Vacuum packing	K1	CO3
	6	Infer the foodborne pathogen that can survive in extreme conditions such as high salt concentrations. a) <i>Bacillus spp.</i> b) <i>Clostridium botulinum</i> c) <i>Staphylococcus aureus</i> d) <i>Shigella spp.</i>	K2	CO3
4	7	Which type of fermentation is used to produce alcoholic beverages like beer and wine? a) Lactic acid fermentation b) Acetic acid fermentation c) Ethanol fermentation d) Butyric acid fermentation	K1	CO4
	8	Interpret which of the following is NOT a type of starter culture. a) Mixed culture    b) Defined culture c) Undefined culture    d) Contaminat culture	K2	CO4
5	9	What is the key advantage of scaling up a bioreactor? a) Reduces cost per unit product b) Increases oxygen consumption c) Decreases microbial growth d) Slows down the fermentation process	K1	CO5
	10	Interpret the common pre-treatment step in downstream processing. a) Sterilization    b) Cell lysis c) Purification    d) Filtration	K2	CO5

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**SECTION - B (35 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Explain the industrial importance of yeast in the food industry.	K2	CO1
	(OR)			
	11.b.	Illustrate the morphological classification of foodborne bacteria.		
2	12.a.	Identify the common causes of spoilage in dairy products and effective preservation techniques.	K3	CO2
	(OR)			
	12.b.	Construct a description of the factors that lead to spoilage in miscellaneous foods such as cocoa and coffee.		
3	13.a.	Examine the symptoms and sources of contamination for Clostridium botulinum in food.	K4	CO3
	(OR)			
	13.b.	Analyze the role of Escherichia coli in foodborne illness and its associated symptoms.		
4	14.a.	Develop a definition of fermentation and explain its basic principles.	K3	CO4
	(OR)			
	14.b.	Identify the various types of media used in fermentation and their composition.		
5	15.a.	Categorize the basic design criteria for a fermentor.	K4	CO5
	(OR)			
	15.b.	Analyze the working principle and components of a solid substrate fermenter.		

**SECTION -C (30 Marks)**

Answer ANY THREE questions

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

Module No.	Question No.	Question	K Level	CO
1	16	Categorize the role of beneficial bacteria in the fermentation of plant-based foods.	K4	CO1
2	17	List the principles behind food contamination and the preventive measures that can be employed in the food industry.	K4	CO2
3	18	Categorize the types of microbial toxins and their roles in foodborne illness.	K4	CO3
4	19	Examine the determination of Thermal Death Time (TDT) and its relevance to the food industry.	K4	CO4
5	20	Examine in detail the stages in downstream processing.	K4	CO5

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BVoc DEGREE EXAMINATION DECEMBER 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

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)  
BVoc DEGREE EXAMINATION DECEMEBR 2024  
(Third Semester)

Branch – FOOD PROCESSING TECHNOLOGY  
ANIMAL FOOD PROCESSING

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (10 × 1 = 10)

Module No.	Question No.	Question	K Level	CO
1	1	Name the component of muscle tissue which is responsible for meat's red color a) Hemoglobin                      b) Collagen c) Myoglobin                      d) Actin	K1	CO1
	2	Show the purpose of post-mortem aging of meat a) Decrease fat content b) Enhance flavor and tenderness c) Increase water content d) Decrease pH of the muscle	K2	CO1
2	3	Which of the following poultry cuts comes from the leg section of the bird? a) Drumstick                      b) Giblets c) Tenderloin                      d) Wingtip	K1	CO2
	4	Relate the property of egg in custard preparation. a) Foaming agent                      b) Binding agent c) Coating agent                      d) Thickening agent	K2	CO2
3	5	Find the curing method in which the meat is kept in a salt solution for an extended period a) Dry curing                      b) Injection curing c) Pickling                      d) Smoking	K1	CO3
	6	Show which of the following is a formed meat product. a) Whole roasted turkey                      b) Chicken nuggets c) Ham                      d) Bacon	K2	CO3
4	7	Recall the role of smoking in the preservation of fish. a) Increases moisture and colour b) Decreases fat and protein content c) Facilitates storage at any temperature d) Increases flavor and antimicrobial effect	K1	CO4
	8	Infer the acronym IQF in fish processing. a) Individual Quick Freeze b) Instant Quick Freeze c) Inert Quality Freezing d) Integrated Quick Freezing	K2	CO4
5	9	Choose the part of animal that is used for making glue. a) Fatty tissues                      b) Bones c) Blood plasma                      d) Feathers	K1	CO5
	10	Relate the composition of egg shell and find its use in pharmaceutical industry. a) Protein supplement b) Iron supplement c) Essential acid supplement d) Calcium supplement	K2	CO5

Cont...

**SECTION - B (35 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks (5 × 7 = 35)

Module No.	Question No.	Question	K Level	CO
1	11.a.	Illustrate the structure of meat muscle.	K2	CO1
	(OR)			
	11.b.	Summarise on the commonly used methods of slaughtering in meat processing industry.		
2	12.a.	Conclude the functional properties of egg with suitable examples.	K4	CO2
	(OR)			
	12.b.	Classify the methods used for preservation of poultry and explain.		
3	13.a.	Organise the steps in preparation of meat emulsion.	K3	CO3
	(OR)			
	13.b.	Identify the process of sausage formulation and explain it.		
4	14.a.	Develop a plan to ensure proper care in handling and transportation of fish.	K3	CO4
	(OR)			
	14.b.	Make use of a flow chart to explain the canning of fish.		
5	15.a.	List the non-edible products made from meat waste and illustrate any one in detail.	K4	CO5
	(OR)			
	15.b.	Discover the ways of utilizing the waste obtained from egg processing industry.		

**SECTION -C (30 Marks)**

Answer ANY THREE questions

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

Module No.	Question No.	Question	K Level	CO
1	16	Analyse the post-mortem changes in meat and explains the factors affecting it.	K4	CO1
2	17	Distinguish the processed poultry products and highlight on any two products.	K4	CO2
3	18	Categorise the meat and poultry products available in the market and elaborate on any two products.	K4	CO3
4	19	Examine the preliminary processing of fish to be carried out to ensure food quality.	K4	CO4
5	20	Compare and explain how waste from fishes and sea foods industry can be utilized into useful products.	K4	CO5

Z-Z-Z END



PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

BVoc DEGREE EXAMINATION DECEMBER 2024  
(Fourth Semester)

Branch – FOOD PROCESSING TECHNOLOGY

**DAIRY PROCESSING**

Time: Three Hours

Maximum: 50 Marks

**SECTION-A (5 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

1. What does refractive index of milk indicate?  
(i) ionic concentration (ii) viscosity  
(iii) surface tension (iv) adulteration
2. Choose the temperature and time to inactivate phosphatase enzyme in milk  
(i) 100°C/30 mins (ii) 71.1°C/15 Sec  
(iii) 100°C/15 Sec (iv) 71.1°C/15 mins
3. Mention the source of synthetic milk  
(i) skim milk (ii) condensed milk  
(iii) groundnut milk (iv) cow's milk
4. What does SNF imparts to icecream?  
(i) improves texture (ii) gives body  
(iii) higher over run (iv) All the above
5. As per FSSAI, 2011 regulation, What is the fat and SNF content in buffalo milk?  
(i) 5 and 9% (ii) 6 and 8%  
(iii) 6 and 9% (iv) 3 and 6%

**SECTION - B (15 Marks)**

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a. Bring out the advantages of Tanker over cans in transporting milk.  
OR  
b. Summarize about grading of raw milk.
- 7 a. Suggest suitable materials for packaging of milk.  
OR  
b. Outline about the manufacture of double toned milk.
- 8 a. Discuss about the production of imitation milk.  
OR  
b. Differentiate sterilized milk and recombined milk.

Cont...

- 9 a. Illustrate the steps in the production of yogurt.  
OR  
b. Describe about the manufacture of icecream.
- 10 a. Narrate the role of biosensors for monitoring hygiene and safety of dairy foods.  
OR  
b. State the FSSAI specification of any three milk products.

**SECTION -C (30 Marks)**

Answer **ALL** questions

**ALL** questions carry **EQUAL** Marks

(5 x 6 = 30)

- 11 a. Discuss the physico chemical properties of milk.  
OR  
b. Explain the platform tests for judging the quality of milk.
- 12 a. Highlight on the objectives and principles of milk pasteurization.  
OR  
b. Elaborate on standardization and homogenization of milk.
- 13 a. Sketch the steps in manufacturing skim milk.  
OR  
b. Analyse the composition and manufacture of condensed milk.
- 14 a. Describe about the various steps in the manufacture of cheese.  
OR  
b. Elucidate the steps in the production of whey protein.
- 15 a. Point out the new concepts of packaging milk and milk products.  
OR  
b. Trace the significance of hygiene and sanitation in dairy plant.

Z-Z-Z

END

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

BVoc DEGREE EXAMINATION DECEMBER 2024  
(Fourth Semester)

Branch - FOOD PROCESSING TECHNOLOGY

**FOOD CHEMISTRY**

Time: Three Hours

Maximum: 50 Marks

**SECTION-A (5 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 Show the range of water activity scale.  
(i) 0 to 1 (ii) 1 to 10  
(iii) 0 to 10 (iv) 1 to 100
- 2 Identify the ketose sugar.  
(i) Fructose (ii) Maltose  
(iii) Glucose (iv) Ribose
- 3 What indicates the degree of unsaturation of a fat or oil?  
(i) Saponification number (ii) Acetyl value  
(iii) RM value (iv) Iodine number
- 4 Match: Linkage between amino acids  
(i) Ionic bond (ii) Glycosidic bond  
(iii) Peptide bond (iv) Covalent bond
- 5 Choose the water-soluble pigment in fruits and vegetables  
(i) Chlorophyll (ii) Carotenoids  
(iii) Anthocyanin (iv) Lycopene

**SECTION - B (15 Marks)**

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a Define- density, plasticity.  
OR  
b Explain hydrogen ion concentration.
- 7 a Draw the structure of starch and explain.  
OR  
b Infer the reduction reaction of monosaccharides.
- 8 a Describe interesterification of fats.  
OR  
b Define- melting, softening, and slipping point.

Cont...

- 9 a Comment on the gelation and foaming properties of protein.  
OR  
b Explain renaturation of proteins.
- 10 a Provide examples for natural and artificial colours.  
OR  
b Discuss the role of flavour intensifiers.

**SECTION -C (30 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a Narrate the theories of gel formation.  
OR  
b Highlight the importance of water activity.
- 12 a Explain Maillard reaction.  
OR  
b Infer the diverse applications of carbohydrates in the food industry.
- 13 a Discuss the functional properties of fats.  
OR  
b Differentiate hydrolytic and oxidative rancidity.
- 14 a Analyze the physical and chemical properties of proteins.  
OR  
b Examine the structure of protein.
- 15 a Interpret the changes in the pigment- anthocyanin during cooking.  
OR  
b Categorize flavor component of meat, vegetables, and fruits.

Z-Z-Z

END

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

BVoc DEGREE EXAMINATION DECEMBER 2024  
(Fourth Semester)

Branch – FOOD PROCESSING TECHNOLOGY

COMPUTER APPLICATION IN FOOD PROCESSING

Time: Three Hours

Maximum: 50 Marks

**SECTION-A (5 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks (5 x 1 = 5)

1. Name the Windows component that provides a visual representation of the file and folder structure on the computer
  - (i) Taskbar
  - (ii) Start Menu
  - (iii) Control Panel
  - (iv) File Explorer
2. Which of the following is an example of a video conferencing platform widely used for internet communication?
  - (i) WhatsApp
  - (ii) Skype
  - (iii) Gmail
  - (iv) Facebook
3. Choose the file format that is commonly used for saving spreadsheet files
  - (i) .txt
  - (ii) .xlsx
  - (iii) .mp3
  - (iv) .docx
4. Label the tag used to create a hyperlink in HTML
  - (i) <link>
  - (ii) <a>
  - (iii) <href>
  - (iv) <hyperlink>
5. What module is dedicated to managing human resources, including employee schedules and payroll in ERP
  - (i) Finance Module
  - (ii) HR Module
  - (iii) Production Module
  - (iv) Inventory Module

**SECTION - B (15 Marks)**

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

- 6 a. Classify the types of operating system.  
OR  
b. Outline about control panel in short.
- 7 a. Summarize the advantage and disadvantage of internet.  
OR  
b. Narrate the components and ethics of internet communication.
- 8 a. Explain in brief about encrypting a document.  
OR  
b. Sketch the steps to calculate average in excel sheet.

Cont...

- 9 a. Produce the steps in sound insertion in powerpoint presentation.  
OR  
b. State the need of cascading style sheet.
- 10 a. Explain about the importance of documentation in food industry.  
OR  
b. Describe the application of ERP in food industry.

**SECTION -C (30 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a. Categorize the components of hardware system.  
OR  
b. Classify various components of window.
- 12 a. Discuss about the application in working of internet.  
OR  
b. Highlight the components of email.
- 13 a. Infer the steps involved in printing a word document.  
OR  
b. Trace the steps in calculating t test in excel sheet.
- 14 a. Outline the steps in creating slides in powerpoint presentation.  
OR  
b. Enumerate the application and concept of corel draw.
- 15 a. Elucidate the methods of documentation.  
OR  
b. Discuss the guidelines of ERP in food processing industries.

Z-Z-Z

END

PSG COLLEGE OF ARTS & SCIENCE  
(AUTONOMOUS)

BVoc DEGREE EXAMINATION DECEMBER 2024  
(Fifth Semester)

Branch – FOOD PROCESSING TECHNOLOGY

**PLANTATION CROP PROCESSING**

Time: Three Hours

Maximum: 50 Marks

**SECTION-A (5 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 Which process is used to remove caffeine from coffee?  
(i) Roasting (ii) Decaffeination  
(iii) Fermentation (iv) Grinding
- 2 Which part of the coconut is primarily used for oil extraction?  
(i) Shell (ii) Copra (iii) Water (iv) Husk
- 3 What is the primary by-product of sugarcane processing used in ethanol production?  
(i) Jaggery (ii) Molasses (iii) Palm sugar (iv) Fiber
- 4 Which product is primarily obtained from tapioca processing?  
(i) Sago (ii) Potato chips  
(iii) Sweet potato fries (iv) Potato starch
- 5 Which spice is known for its high volatile oil content and is used in oleoresin extraction?  
(i) Ginger (ii) Turmeric (iii) Clove (iv) Pepper

**SECTION - B (15 Marks)**

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a Explain the role of withering in tea processing.  
OR  
b Outline the steps involved in cocoa processing, from harvesting to the production of cocoa butter and cocoa powder.
- 7 a Explain the significance of grading in the processing of cashew nuts.  
OR  
b Summarize the role of the Coconut Development Board in supporting the development of value-added coconut products.
- 8 a Outline the process of producing molasses from sugarcane.  
OR  
b Summarize the importance of Sugarcane Research Institutes in India for the sugarcane industry.
- 9 a Explain the process of making potato flour and its common applications.  
OR  
b Enumerate on factors affecting storability of roots & tubers.

Cont...

- 10 a Outline the role of post-harvest technology in improving the shelf life and quality of minor spices.

OR

- b Explain the differences between major and minor spices.

**SECTION -C (30 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a Elucidate the processing stages of coffee, from harvesting to the production of instant coffee powder.

OR

- b Categorize the different types of tea and the steps involved in their processing.

- 12 a Enumerate the process of coconut milk and cream extraction.

OR

- b Outline the process of cashew nut shelling and discuss how cashew nut shell liquid is extracted?

- 13 a Summarize the importance of clarification in sugarcane processing and its impact on the purity of the final product.

OR

- b Examine the process of manufacturing palm sugar from palmyra tubers, highlighting key steps.

- 14 a Summarize the importance of the Central Tuber Crop Research Institute in promoting research and development in tuber crop processing.

OR

- b Outline the steps involved in producing resistant starch from tapioca and its applications in food products.

- 15 a Discuss the extraction methods of volatile oils and oleoresins from spices.

OR

- b Elucidate the composition and processed products of the major spice turmeric.

Z-Z-Z

END



PSG COLLEGE OF ARTS & SCIENCE  
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BVoc DEGREE EXAMINATION DECEMBER 2024  
(Fifth Semester)

Branch – FOOD PROCESSING TECHNOLOGY

**EXTRUDED AND CONVENIENCE FOODS**

Time: Three Hours

Maximum: 50 Marks

**SECTION-A (5 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks (5 x 1 = 5)

- 1 What is a key advantage of using extrusion in food processing?
  - (i) High energy consumption
  - (ii) Limited product variety
  - (iii) Ability to produce complex shapes and textures
  - (iv) Difficulty in controlling the process
- 2 Which of the following extruded products can you find being produced with a layered or co-extruded structure?
  - (i) Carbonated beverages
  - (ii) Filled snacks
  - (iii) Fresh salads
  - (iv) Whole grains
- 3 Name the primary factor that indicates whether an extruded food product has achieved the desired texture.
  - (i) Colour
  - (ii) pH level
  - (iii) Temperature
  - (iv) Moisture content
- 4 Indicate the primary characteristic of convenience foods?
  - (i) Long cooking times
  - (ii) Requires minimal preparation
  - (iii) High nutritional value
  - (iv) Short shelf life
- 5 Mention the following is a convenience food product often used as a quick breakfast option?
  - (i) Instant oatmeal
  - (ii) Fresh tomatoes
  - (iii) Whole grain rice
  - (iv) Uncooked beans

**SECTION - B (15 Marks)**

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

- 6 a State the disadvantages of extrusion.  
OR  
b Describe on twin screw extruders.
- 7 a Outline the types of long pasta.  
OR  
b Explain on co extruded snacks.
- 8 a Describe on water soluble index.  
OR  
b State the Indian standards for vermicelli.

Cont....

- 9 a Describe the advantages of convenience foods .  
OR  
b Explain the uses of ready to eat foods.

- 10 a Outline meat based convenience foods.  
OR  
b Bring out the types of beverages.

**SECTION -C (30 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a Point out the components & working principle of Hot & Cold extruders.  
OR  
b Discuss the advantages of extrusion.
- 12 a Distinguish between second and third generation snacks.  
OR  
b Discuss the types of extruded product.
- 13 a Highlight the points to be considered while selecting raw material for extruded foods.  
OR  
b Elucidate the textural properties of extruded foods.
- 14 a Discuss the advantages of ready to use foods.  
OR  
b Point out the status of International market of convenience foods.
- 15 a Classify the types of instant mixes.  
OR  
b Summarize the types of cereal based convenience foods.

Z-Z-Z END

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

**BVoc DEGREE EXAMINATION DECEMBER 2024**

(Fifth Semester)

Branch – **FOOD PROCESSING TECHNOLOGY**

**ENTREPRENEURSHIP AND FOOD BUSINESS MANAGEMENT**

Time: Three Hours

Maximum: 50 Marks

**SECTION-A (5 Marks)**

Answer **ALL** questions

**ALL** questions carry **EQUAL** marks (5 x 1 = 5)

- 1 Identify the entrepreneur who fails to adapt the current market trends
 

(i) Fabian entrepreneur	(ii) Innovative Entrepreneur
(iii) ImitativeEntrepreneur	(iv) DroneEntrepreneur
- 2 Find the correct abbreviation for NABARD
 

(i) National Bank for Agriculture and Rural Development	(ii) NationalAssociation of Banks for Rural Development
(iii) National Bank for Agricultural Rural Development	(iv) NationalAuthority for Banking and Rural Department
- 3 Indicate the scheme that provides financial assistance for SC/ST category and/or Women Entrepreneurs in India?
 

(i) Start-up-India	(ii) Stand-up-India
(iii) Made in India	(iv) Make-in-India
- 4 Choose the tool used to schedule, organize and map out tasks within a project?
 

(i) PERT chart	(ii) Gantt chart
(iii) Fishbone diagram	(iv) SWOT analysis
- 5 Which of the following is an internal factor in a SWOC analysis for a software development company?
 

(i) Economic downturn affecting demand for software	(ii) Company's expertise in cloud computing
(iii) Government regulations on data privacy	(iv) Availability of skilled developers in the job market

**SECTION - B (15 Marks)**

Answer **ALL** Questions

**ALL** Questions Carry **EQUAL** Marks (5 x 3 = 15)

- 6 a Summarize the scope of food business in India.  
OR  
b State the characteristics of entrepreneurship.
- 7 a Summarize on food parks.  
OR  
b Outline the functions of SIDO and SIDBI.
- 8 a State the functions of BIRAC.  
OR  
b Outline on rural entrepreneurship.
- 9 a Expand CPM, GANTT and PERT.  
OR  
b State on project planning.

Cont...

- 10 a Explain on SWOC analysis.  
OR  
b Outline on break even analysis.

**SECTION -C (30 Marks)**  
Answer ALL questions  
ALL questions carry EQUAL Marks (5 x 6 = 30)

- 11 a Identify the requisites for successful business.  
OR  
b Highlight the factors affecting entrepreneurial growth.
- 12 a Discuss the functions of FICCI.  
OR  
b Compare the technical support provided the state and central government.
- 13 a Discuss the subsidies available for entrepreneurs.  
OR  
b Highlight the functions of SEED.
- 14 a Discuss the points to be considered while selecting a project.  
OR  
b Discuss in PERT Chart.
- 15 a Identify the legal considerations of a project.  
OR  
b Enumerate the process of registration and licensing to start a food industry.

Z-Z-Z

END

**PSG COLLEGE OF ARTS & SCIENCE**  
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**BVoc DEGREE EXAMINATION DECEMBER 2024**  
(Fifth Semester)

Branch – **FOOD PROCESSING TECHNOLOGY**

**FOOD PACKAGING & LABELLING**

Time: Three Hours

Maximum: 50 Marks

**SECTION-A (5 Marks)**

Answer **ALL** questions

**ALL** questions carry **EQUAL** marks

(5 x 1 = 5)

- 1 Choose the rigid packaging material which is chemically inert.  
(i) Tin can (ii) Glass  
(iii) Card Board (iv) Plastics
- 2 Name the gas which is used in packaging of red meat?  
(i) Oxygen (ii) Carbon dioxide  
(iii) Nitrogen (iv) Hydrogen
- 3 Find the wrap used for cheese.  
(i) Film wrap (ii) Over wrap  
(iii) Foil wrap (iv) Parchment wrap
- 4 Identify the gas used in packaging of potato chips.  
(i) Nitrogen (ii) Oxygen  
(iii) Carbon dioxide (iv) Hydrogen
- 5 Which test is done to measure the quality of corrugated fiber boards?  
(i) Tensile strength (ii) Bursting strength  
(iii) Gas transmission rate (iv) Tear strength

**SECTION - B (15 Marks)**

Answer **ALL** Questions

**ALL** Questions Carry **EQUAL** Marks

(5 x 3 = 15)

- 6 a Summarize the functions of food packaging.  
OR  
b Bring out the advantages and disadvantages of using glass as a packaging material.
- 7 a Produce the applications of smart / intelligent packaging materials.  
OR  
b Outline the techniques involved in antimicrobial packaging.
- 8 a Describe the preprocessing steps involved in fruit packaging.  
OR  
b Explain any three characteristic features of packaging material used in meat packaging.
- 9 a Describe any two packaging materials used for bakery products.  
OR  
b Narrate the processing requirements for processed cereals.
- 10 a State the fundamentals in package design.  
OR  
b Produce the definitions for tensile strength, bursting strength and tear strength.

**Cont...**

**SECTION -C (30 Marks)**

Answer **ALL** questions

**ALL** questions carry **EQUAL** Marks

(5 x 6 = 30)

- 11 a Classify the different types of packaging materials.  
OR  
b Enumerate the types of non-woven packaging materials, their properties, advantages and disadvantages.
- 12 a Discuss the methods of aseptic packaging and highlight the principle involved in it.  
OR  
b Outline on the logistics and supply chain management.
- 13 a Summarize the packaging requirements and materials used for packaging milk, butter and cheese.  
OR  
b Elucidate the wholesale and retail packages used for packaging of poultry.
- 14 a Point out the packaging requirements for fats and oils.  
OR  
b Trace the product characteristics and packaging requirements for convenience foods.
- 15 a Explain the procedures involved in testing packaging material by water vapour transmission rate and gas transmission rate.  
OR  
b Highlight the importance and contents to be included in nutritional labelling.

Z-Z-Z

END

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

**BVoc DEGREE EXAMINATION DECEMBER 2024**  
**(Fifth Semester)**

**Branch - FOOD PROCESSING TECHNOLOGY**

**PRINCIPLES OF NUTRITION**

Time: Three Hours

Maximum: 50 Marks

**SECTION-A (5 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

1. Name the term used to determine the energy output  
(i) Basal metabolic rate      (ii) Thermogenesis  
(iii) Physical activity      (iv) All the above
2. Give the proteins which give single amino acid only upon hydrolysis is called as \_\_\_\_  
(i) Derived proteins      (ii) Simple proteins  
(iii) Conjugated proteins      (iv) Complex proteins
3. Which of the following vitamins serves as a hormone precursor?  
(i) Vitamin A      (ii) Vitamin C      (iii) Vitamin D      (iv) Vitamin K
4. Find out the deficiency of nutrient causes hypogonadism in males  
(i) Calcium      (ii) Phosphorus      (iii) Zinc      (iv) Iodine
5. What is the percentage of water in ICF  
(i) 65      (ii) 55      (iii) 50      (iv) 40

**SECTION - B (15 Marks)**

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

6. a) Illustrate about the factors affecting BMR.  
OR  
b) Highlight about the digestion and absorption of carbohydrates.
7. a) Write a short note about functions of proteins.  
OR  
b) Describe the significance of Essential fatty acids.
8. a) Outline the functions of Vitamin D.  
OR  
b) Explain the functions of Vitamin C

**Cont...**

9. a) Write about the functions of phosphorus.  
OR  
b) Narrate the deficiency of iodine.
10. a) State the effect of imbalance of water.  
OR  
b) Summarize the composition of electrolytes.

**SECTION -C (30 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks (5 x 6 = 30)

11. a) Determine the energy value of foods using bomb calorie meter.  
OR  
b) Discuss the classification and functions of dietary fibre.
12. a) Distinguish the methods of evaluating protein quality.  
OR  
b) Discover about the digestion and absorption of proteins.
13. a) Distinguish the functions, deficiency of Vitamin A.  
OR  
b) Elucidate the functions, deficiency of Thiamine.
14. a) Enumerate the functions, deficiency of calcium.  
OR  
b) Highlight the functions, deficiency of zinc.
15. a) Infer the regulation of water balance.  
OR  
b) Outline the regulation of acid base balance.

Z-Z-Z END



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

**BVoc DEGREE EXAMINATION DECEMBER 2024  
( Sixth Semester)**

**Branch – FOOD PROCESSING TECHNOLOGY**

**FOOD SAFETY AND QUALITY MANAGEMENT SYSTEMS**

Time: Three Hours

Maximum: 50 Marks

**SECTION-A (5 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 Name the toxic component produced during frying of starchy foods
  - (i) Furans
  - (ii) Acrylamide
  - (iii) Dioxins
  - (iv) Nitrosoamines
- 2 Find the additives which helps in retention of moisture in foods
  - (i) Sequestrants
  - (ii) Antioxidants
  - (iii) Maturing agents
  - (iv) Humectants
- 3 Choose the widely used method to measure consumers' preferences and acceptability of food products
  - (i) Hedonic test
  - (ii) Difference test
  - (iii) Rating test
  - (iv) Threshold test
- 4 Food Safety and Standards Authority of India was established in the year
  - (i) 2006
  - (ii) 2008
  - (iii) 2011
  - (iv) 2020
- 5 What is FSMS?
  - (i) Food Safety Management Standards
  - (ii) Food Standards Management System
  - (iii) Food Standards Multinational System
  - (iv) Food Safety Management System

**SECTION - B (15 Marks)**

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a Bring out the common allergens in food and its sources.  
OR  
b Narrate the importance of quality control in raw materials.
- 7 a Compare the natural and synthetics colourants.  
OR  
b Describe the functions of leavening agent.
- 8 a Organize the sensory attributes of food essential for evaluation.  
OR  
b State the principle of titrimetry in objective evaluation of food.
- 9 a Produce the FSSAI standard for anyone cereal product.  
OR  
b Narrate the objective of APEDA.
- 10 a How does GRAS plays a major role in food processing?  
OR  
b Outline the concept of HALAL.

Cont...

**SECTION -C (30 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11 a Categorize Hazards with examples.

OR

b Examine the toxicants formed during processing of foods.

12 a Highlight the mode of action of commonly used preservatives.

OR

b Point out the methods to identify adulterants in any three foods.

13 a Elucidate on different types of rating test in sensory evaluation of foods.

OR

b Summarize the importance of microbiological test in food processing.

14 a Analyze the functions of FSSAI in promoting nation's food safety.

OR

b Discuss the importance of food labeling in consumer health and safety.

15 a Outline the clauses of ISO related to food industry.

OR

b Enumerate on seven principles of HACCP.

Z-Z-Z

END

**PSG COLLEGE OF ARTS & SCIENCE**  
(AUTONOMOUS)  
**BVoc DEGREE EXAMINATION DECEMBER 2024**  
( Sixth Semester)  
**Branch – FOOD PROCESSING TECHNOLOGY**  
**FOOD BIOTECHNOLGY**

Time: Three Hours

Maximum: 50 Marks

**SECTION-A (5 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 Choose the primary function of RNA
  - (i) Energy source
  - (ii) Store genetic information
  - (iii) Protein synthesis
  - (iv) structural support to cells
- 2 Identify the function of restriction endonucleases in gene cloning
  - (i) Ligate DNA
  - (ii) Cut DNA
  - (iii) Restrict RNA
  - (iv) Replicate RNA
- 3 Match the application of SCP in food processing
  - (i) Meat substitutes
  - (ii) Leavening agent
  - (iii) Preservative
  - (iv) Sweeteners
- 4 State the purpose of genetically modified rice
  - (i) to improve yield
  - (ii) to increase shelf life
  - (iii) to reduce pest attack
  - (iv) to increase carotene content
- 5 Name the process commonly used to produce hydrogen from biomass
  - (i) Gasification
  - (ii) Fermentation
  - (iii) Combustion
  - (iv) Distillation

**SECTION - B (15 Marks)**

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a State the importance of biotechnology in food processing.  
OR  
b Organize the properties of DNA.
- 7 a Describe the process of ligation in gene cloning.  
OR  
b Outline the role of T4 plasmids in biotechnology.
- 8 a Bring out the nutritional value of Single Cell Protein.  
OR  
b Narrate the application of amylase enzyme in food industry.
- 9 a State the objective of designer milk production .  
OR  
b Describe the key traits of Flavr Savr tomato.
- 10 a Differentiate bio-plastics from conventional plastics.  
OR  
b Explain the uses of bio-films in food processing sector.

Cont...

**SECTION -C (30 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11 a Enumerate on structure of RNA.

OR

b Identify the applications of genetic engineering.

12 a Summarize the steps involved in gene cloning.

OR

b Justify the role of restriction endonuclease and bacteriophage in gene cloning.

13 a Outline the production process of protease.

OR

b Highlight the applications of enzyme in food industry.

14 a Infer on the production of Genetically modified rice and its importance.

OR

b Elucidate on the methodology for developing transgenic fish.

15 a Point out on the process of producing Bio-ethanol from agricultural waste.

OR

b Discuss on the applications of nanotechnology in food industry.

Z-Z-Z

END

PSG COLLEGE OF ARTS & SCIENCE  
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BVoc DEGREE EXAMINATION DECEMBER 2024  
( Sixth Semester)

Branch – FOOD PROCESSING TECHNOLOGY

**ENTREPRENEURSHIP & FOOD BUSINESS MANAGEMENT**

Time: Three Hours

Maximum: 50 Marks

**SECTION-A (5 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks (5 x 1 = 5)

- 1 What is the primary goal of entrepreneurship?  
(i) Profit maximization (ii) Social responsibility  
(iii) Market domination (iv) Innovation and value creation
- 2 Tell the organization primarily involved in agriculture related banking needs is  
(i) NABARD (ii) Canara bank  
(iii) SBI (iv) Central Bank of India
- 3 What does SWOT analysis stand for in the context of entrepreneurship?  
(i) Strengths, Weaknesses, Opportunities, Threats  
(ii) Sales, Workforce, Operations, Technology  
(iii) Strategy, Workflow, Objectives, Targets  
(iv) Stakeholders, Workers, Output, Time
- 4 When is risk analysis done in a project?  
(i) Beginning of the project (ii) Throughout the project  
(iii) End of the project (iv) In between the project
- 5 Which one is a psychological factor affecting consumer behaviour?  
(i) perception (ii) gender  
(iii) social classes (iv) personality

**SECTION - B (15 Marks)**

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

- 6 a Define entrepreneurship and its different types.  
OR  
b Summarize the evolution of food business in India.
- 7 a Outline the role of national small industries corporation.  
OR  
b Summarize on the State government institutions promoting entrepreneurship.
- 8 a List the stages of project identification.  
OR  
b Organise the steps involved in Project Budgeting.
- 9 a Contrast between the various techniques involved in situation analysis.  
OR  
b Examine the accounting conventions.
- 10 a Infer the importance of marketing for success in business.  
OR  
b Inspect the export and government regulations.

Cont...

**SECTION -C (30 Marks)**

Answer ALL questions  
ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a Recall the factors affecting entrepreneurial growth.  
OR  
b Tell the causes for sickness in industries and its solutions.
- 12 a Compare between Industrial Estates and Food Parks.  
OR  
b Outline the role of different commodity boards in India.
- 13 a Identify the various project evaluation tools.  
OR  
b Categorise the types of cost of production in business.
- 14 a Inspect the need and importance of market survey in project  
OR  
b Classify the different types of pricing strategies.
- 15 a Dissect the stages of a project cycle.  
OR  
b Examine the role of digital marketing in promoting a product.

Z-Z-Z

END

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BVoc DEGREE EXAMINATION DECEMBER 2024  
( Sixth Semester)

Branch – FOOD PROCESSING TECHNOLOGY

THERAPEUTIC NUTRITION

Time: Three Hours

Maximum: 50 Marks

**SECTION-A (5 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

- 1 Identify the infusion technique where a large feed is administered in a short time  
(i) Continuous method (ii) Cyclic method  
(iii) Interrupted method (iv) Bolus method
- 2 Wasting is defined as \_\_\_\_\_.  
(i) Low height for age (ii) Low weight for height  
(iii) Low weight for age (iv) Low weight for age and oedema
- 3 Which of the following enhances absorption of iron in the body?  
(i) Citric acid (ii) Calcium  
(iii) Phytate (iv) Ascorbic acid
- 4 Mid Upper Arm Circumference cut off for well-nourished is \_\_\_\_\_.  
(i) < 11 (ii) 11 – 12.5  
(iii) 12.5 – 13.5 (iv) > 13.5
- 5 Calorie requirement for a deep-sea explorer is \_\_\_\_\_ Kcal /Kg/Day  
(i) 30 – 35 (ii) 35 - 45  
(iii) 44 – 52 (iv) 55 – 65

**SECTION - B (15 Marks)**

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

- 6 a Describe the principles of therapeutic nutrition .  
OR  
b Bring out the significance of sodium restricted diet with examples.
- 7 a Analyze the causes of PEM.  
OR  
b Outline the signs and symptoms of vitamin A deficiency disorder.
- 8 a Classify the risk factors for cardiovascular diseases.  
OR  
b Explain the signs and symptoms of diabetes.
- 9 a State the objectives and significance of assessment of nutrition status.  
OR  
b How will you the conduct 24 hour recall dietary survey?
- 10 a Classify aerobic and anaerobic exercises with suitable examples.  
OR  
b Outline the different types of space foods.

Cont...

**SECTION -C (30 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11 a Elucidate the need, methods, advantages and disadvantages of enteral nutrition.  
OR  
b Outline the significance of high fibre and low fibre foods.
- 12 a Discuss the causes, signs and symptoms and dietary treatment for Iron Deficiency Anemia.  
OR  
b How will you prevent osteoporosis?
- 13 a Outline the causes, consequences and dietary treatment for obesity.  
OR  
b Explain the types, causes and prevention of cancer.
- 14 a Summarize the techniques involved in the measurement of height, weight and calculation of BMI.  
OR  
b Classify the biochemical indices to be identified for dyslipidemia and a anemia.
- 15 a Classify the components of fitness and explain in detail.  
OR  
b Infer the role of water and electrolyte in the diet of a sports person and mention its requirement.

Z-Z-Z

END



PSG COLLEGE OF ARTS & SCIENCE  
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BVoc DEGREE EXAMINATION DECEMBER 2024  
( Sixth Semester)

Branch – FOOD PROCESSING TECHNOLOGY

**DISCIPLINE SPECIFIC ELECTIVE – II : FOOD INDUSTRY MANAGEMENT**

Time: Three Hours

Maximum: 50 Marks

**SECTION-A (5 Marks)**

Answer ALL questions

ALL questions carry EQUAL marks (5 x 1 = 5)

1. Which is the social process by which managers of enterprise integrate people to work formally?  
a. organisation    b. Management    c. Leadership    d. personnel management
2. Which style of leadership is also known as Laissez-faire?  
a. Autocratic    b. Democratic    c. Free-rein    d. Functional
3. Management is defined as?  
a. an art or science    b. science    c. an art    d. none of these
4. Which of the following is not a verbal communication?  
a. oral    b. Written    c. gesture    d. graphical
5. An audit program is also known as----?  
a. Audit plan    b. Audit memo    c. Audit notebook    d. Audit work

**SECTION - B (15 Marks)**

Answer ALL Questions

ALL Questions Carry EQUAL Marks (5 x 3 = 15)

- 6 .a. Illustrate the organizational chart for a food processing industry.  
(OR)  
b. Outline the significance of bureaucratic theories of organization.
7. a. Summarize the importance of time management.  
(OR)  
b. Explain semi-fixed cost and variable cost.
8. a. Enumerate any two types of communication.  
(OR)  
b. Enlist the barriers of communication.
9. a. Distinguish between government audit and commercial audit.  
(OR)  
b. Enlist the steps in the process of auditing.
- 10.a. Design a audit memorandum for a company.  
(OR)  
b. Give a short note on hygiene and environmental audit.

Cont...

**SECTION -C (30 Marks)**

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

- 11.a. Discuss the various styles of leadership in an organisation.  
(OR)  
b. Explain the types of decision making in management process.
- 12 a.. Explain the process of selection for a job in Management.  
(OR)  
b. Appraise on the Mundel's class of changes in work simplification.
- 13.a. Describe the methods to overcome barriers of communication.  
(OR)  
b. Enumerate on the channels of communication.
- 14.a. Highlight the classification of auditing.  
(OR)  
b. Infer on the significance of professional conduct and ethics.
- 15.a. Appraise on the advantages and disadvantages of auditing.  
(OR)  
b. Discuss about the importance of financial audit.

Z-Z-Z      END