

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

**BVoc DEGREE EXAMINATION MAY 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	Which heating method is preferred for gentle and controlled heating in the chemistry lab? a) Open flame b) Bunsen burner c) Microwave d) Water bath	K1	CO1
	2	What is absolute error in chemical analysis? a) The difference between the measured value and the true value b) The ratio of the measured value to the true value c) The difference between two measured values d) The percentage error in measurement	K2	CO1
2	3	In a covalent bond, how are electrons shared between atoms? a) Unequally b) Partially c) Equally d) Randomly	K1	CO2
	4	What is oxidation? a) Gain of electrons b) Loss of electrons c) Gain of protons d) Loss of protons	K2	CO2
3	5	Which of the following expresses the concentration of a solution in terms of the number of moles of solute per kilogram of solvent? a) Molarity b) Molality c) Mole fraction d) Mass percent	K1	CO3
	6	If you have a solution with 20% mass percent of solute, how many grams of solute are present in 500 grams of the solution? a) 100 g b) 200 g c) 250 g d) 400 g	K2	CO3
4	7	Which terpenoid is commonly used in the pharmaceutical industry for its cooling effect? a) Citral b) Menthol c) Geraniol d) Camphor	K1	CO4
	8	Which class of flavonoids is responsible for the blue and red colors in fruits and flowers? a) Anthocyanins b) Flavonols c) Flavanones d) Isoflavones	K2	CO4
5	9	Which of the following is a natural polymer? a) Polyethylene b) Polypropylene c) Starch d) PVC	K1	CO5
	10	Which type of plastic is known for its flexibility and is commonly used in plastic bags? a) LDPE b) HDPE c) PVC d) PET	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.	Compare direct and indirect heating methods in the context of laboratory procedures.	K2	CO1
	(OR)			
	11.b.	Explain the difference between absolute and relative error.		
2	12.a.	How does the electronic theory of valency explain the formation of chemical bonds between atoms?	K3	CO2
	(OR)			
	12.b.	Utilize the Lewis concept to explain complex acid-base reactions.		
3	13.a.	Given a set of data, can you utilize the formulas for molality, molarity, and mole fraction to calculate the concentration of a solution? Mass of solute (m): 25 grams Mass of solvent (S): 150 grams Molar mass of solute (M): 58 g/mol Volume of solution (V): 500 mL	K3	CO3
	(OR)			
	13.b.	Develop a classification for electrolytes based on their conductance properties.		
4	14.a.	Categorize alkaloids based on their structural features and chemical properties.	K4	CO4
	(OR)			
	14.b.	Examine the biological properties of piperine. How does it affect the human body, and what are its potential applications or benefits?		
5	15.a.	Define and compare fiber-reinforced plastic and glass-reinforced plastic.	K4	CO5
	(OR)			
	15.b.	Classify pesticides into insecticides, herbicides, and fungicides.		

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	Analyze the importance of knowing the threshold vapor concentration of a chemical before working with it in the lab.	K4	CO1
2	17	Categorize the electrovalent, covalent, and coordinate bonds. How do they differ in terms of electron sharing?	K4	CO2
3	18	Analyze the relationship between electrolyte imbalances and changes in blood pressure. Discuss how alterations in electrolyte concentrations can affect osmotic pressure in different body compartments.	K4	CO3
4	19	Classify flavonoids based on their chemical structure. Provide examples for each class and discuss the differences between flavones and anthocyanins.	K4	CO4
5	20	Compare and contrast LDPE and HDPE in terms of properties and applications.	K4	CO5