PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BVoc DEGREE EXAMINATION DECEMEBR 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_2 b) N_2 c) HCl d) O_2	K1	CO2
	4	Show the oxidation number of Mn in $KMnO_4$. 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) $C_8H_{17}N$ b) $C_{10}H_{17}N$ c) $C_8H_{27}N$ d) $C_8H_{15}N$	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

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.	Built 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 $NaHCO_3$ 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 $NaHCO_3$ 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

Z-Z-Z   END