

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION DECEMBER 2025
(Fifth Semester)

Branch - **CHEMISTRY**

ORGANIC 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 of the following is a monosaccharide? (a) Sucrose (b) maltose (c) Galactose (d) cellulose	K1	CO1
	2	Which of the following statements is false about glucose? (a) it is a reducing sugar (b) it is a disaccharide (c) it has a pyranose form (d) it is a polyalcohol	K2	CO1
2	3	The terpenoid present in peppermint oil is (a) Citral (b) Pulegone (c) menthol (d) Camphor	K1	CO2
	4	Quinine is used as a drug for _____ (a) Typhoid (b) Tuberculosis (c) Malaria (d) Leprosy	K2	CO2
3	5	Malonic ester reacts with urea in the presence of POCl_3 to give _____ (a) veronal (b) barbituric acid (c) luminal (d) Parabanic acid	K1	CO3
	6	Active methylene compounds react with aldehydes in the presence of piperidine to give α,β -unsaturated acids. This reaction is known as _____ (a) Perkin reaction (b) Reformatsky reaction (c) Knoevenagel reaction (d) Clasien reaction	K2	CO3
4	7	Gomberg-Bachmann reaction gives _____ (a) Aryl halide (b) Biaryl compound (c) Ketone (d) alcohol	K1	CO4
	8	Clasien condensation involves _____ (a) Aldehydes only (b) Ketones only (c) Esters with strong base (d) Acid chlorides with water	K2	CO4
5	9	The group responsible for imparting colour in dye is called _____ (a) Auxochrome (b) Chromophore (c) Resonance group (d) catalyst	K1	CO5
	10	β -carotene is a precursor of vitamin _____ (a) B (b) A (c) C (d) K	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.	Outline the following conversions (i) glucose to fructose (ii) fructose to glucose.	K2	CO1
		(OR)		
2	12.a.	Propose an experimental method to confirm cyclic structure of α -pinene.	K3	CO2
		(OR)		
3	12.b.	Ascorbic acid is a reducing agent. Design a test to confirm its reducing property.	K3	CO3
		(OR)		
4	13.a.	Sketch the synthesis of aceto acetic ester and diethyl malonate.	K4	CO4
		(OR)		
5	13.b.	Organize the evidence for enol and keto form of aceto acetic ester.	K4	CO5
	14.a.	Analyze the condensation reaction between acetaldehyde and benzaldehyde in the presence of strong base.		
		(OR)		
	14.b.	Examine the various methods to detect free radicals.		
5	15.a.	Examine the classification of dyes according to the mode of application.	K4	CO5
		(OR)		
	15.b.	Analyze the structure, extraction and uses of anthocyanins.		

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	Examine the structure of cellulose and its applications.	K4	CO1
2	17	Analyze the structure of piperine.	K4	CO2
3	18	Examine the preparation of following from diethylmalonate (a) adipic acid (b) barbituric acid (c) crotonic acid (d) aceto acetic acid	K4	CO3
4	19	Inspect the mechanism of Reformatsky and Perkin reaction.	K4	CO4
5	20	Analyze the synthesis of following dyes (a) Malachite green (b) Phenolphthalein (c) Alizarin	K4	CO5