PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2018
(First Semester)

Branch – **CHEMISTRY**

ORGANIC CHEMISTRY-I

Time : Three Hours Maximum : 75 Marks

Answer **ALL** questions
ALL questions carry **EQUAL** marks (5 x 15 = 75)

1 a Describe the difference between primary and secondary isotope effect. (6)

b Illustrate Baker – Nathan effect with suitable example. (4)

c Write a note on Hammond postulate. (5)

OR

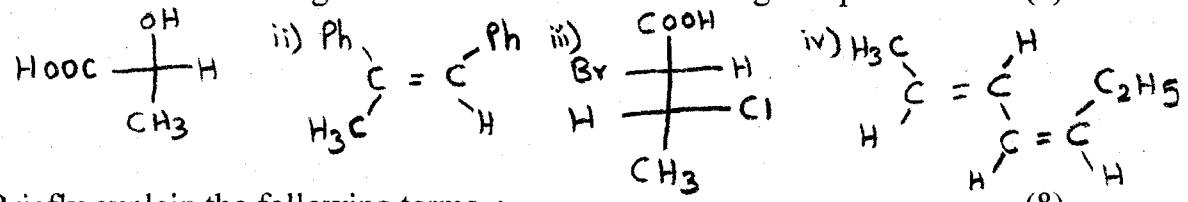
d Explain the following with suitable reasons :
(i) p – methylbenzoic acid is weaker than p-nitrobenzoic acid
(ii) N- elkylated amines are stronger bases than aniline (2+2)

e Explain the following : (i) Hammett equation (ii) Taft equation. (4+4)

f Write a note on hydrogen bonding. (3)

2 a Write a note on optical isomerism of spiranes. (3)

b Give the absolute configuration of each of the following compounds : (4)



c Briefly explain the following terms : (8)
(i) Sawhorse projections (ii) Newman projections
(iii) Erythro and threo nomenclature (iv) Diastereoisomerism

OR

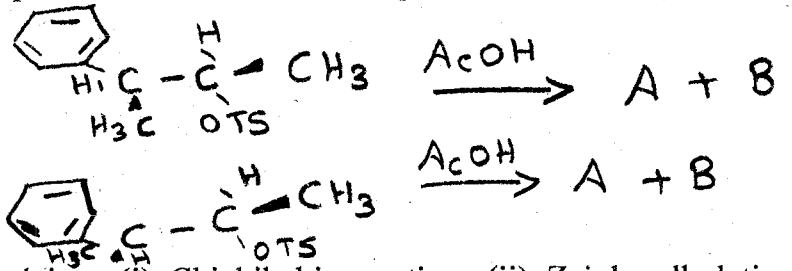
d Discuss the stereochemistry of sulphur compounds. (4)

e Explain the possible conformations for dimethylcyclohexanes. (5)

f Discuss the stereospecific and stereoselective reactions with examples. (6)

3 a Explain the mechanism of SN^i reaction. (3)

b Propose the mechanism of the given reaction and predict the products. (4)



c) Explain : (i) Chichibabin reaction (ii) Zeigler alkylation. (4+4)

OR

d Discuss the ambident substrates and ambident nucleophile. (4)

e Describe the stereochemistry of SN^1 and SN^2 reaction. (8)

f Explain the reactivity of benzyne intermediate. (3)

Cont...

4	a	What is the structural difference between starch and cellulose?	(2)
	b	Outline the structure of cadenine.	(5)
	c	Elucidate the structure and synthesis of tylophorine.	(8)
		OR	
	d	Explain why sources is not a reducing sugar.	(2)
	e	Discuss the structure, configuration and conformation of maltose.	(8)
	f	Discuss the chemistry of thiamine.	(5)
5	a	How will you distinguish between flavones and isoflavones?	(2)
	b	Discuss the synthesis, reactivity and applications of pyrazoles.	(8)
	c	Explain the chemistry of kaemferol.	(5)
		OR	
	d	Elucidate the structure and synthesis of isoflavones.	(8)
	e	Describe the isolation and structure of cyanin chloride.	(7)

Z-Z-Z END