1.A

GURU NANAK COLLEGE BUDHLADA

Under the Management of S.G.P.C. Sri Amritsar Sahib

Affiliated with Punjabi University, Patiala & Approved by AICTE

NAAC 'A' Grade

COURSE FILE

Name of the Teacher: Hamsha

Designation: Asst. Prof. Department: Chemistry

Subject: Organic Chemistry Joining Date: 16 July, 2016

Session From: 2018 to 2019

Head
Deptt. Of Science
Guru Nanak College
Budhlada(Mansa)

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CONTENTS OF COURSE FILE:

1B

TIME TABLE:-

TIME TABLE (SESSION JAN-APR 2019)

CLASS	SEC/TIME	9:30-10:05	10:05-10:40	10:40-11:15	11:15-11:50	11:50-12:25	12:25-1:00	1:00-1:35	1:35-2:10	2:10-2:45
		I	II	III	IV	V	VI	VII	VIII	IX
B.SC 1	A							PRACTICAL(1-3)		
	B	ORGANIC (1-3)			ORGANIC (1-3)					
	A			ORGANIC (1-3)						
B.SC 2	B							ORGANIC (4-6)		
	A									
B.SC 3	B									
M.SC 1		PRACTICAL(4-6)								
M.SC 2	ORGANIC CHEMISTRY		R.R (1-3)		R.R (4-6)					

Teacher

H.O.D

Head
Deptt. Of Science
Guru Nanak College
Budhlada(Mansa)

Principal

COPY OF SYLLABUS:

Section - A

1. Stereochemistry of Organic Compounds Concept of isomerism. Types of isomerism

Optical isomerisin-elements of symmetry, molecular chirality, enantiomers, stereogenic centrec, optical activity, properties of enantiomers, chiral and achiral molecules with two stereogenic centres, diastereomers, threo and erythro diastereomers, meso compounds, resolution of enantiomers, inversion, retention and racemization.

Relative and absolute configuration, sequence rules, D & Land R & S systems of nomenclature.

Geometric isomerism-determination of configuration of geometric isomers, E & Z system of nomenclature, geometric isomerism in oximes and alicyclic compounds.

Conformational isomerism-conformational analysis of ethane and n-butane; conformations of cyclohexane, axial and equatorial bonds, conformation of mono substituted cyclohexane derivatives.

Newman projection and Sawhorse formulae, Fischer and flying wedge formulae. Difference between conti ration and conformation.

Section – B

2.Arcncs and Aromaticity Nomenclature of benzene derivatives. The aryl group. Aromatic nucleus and side chain. Structure of benzene: molecular formula vand Kekule structure. Stability and carbon-carbon bond lengths of benzene, resonance structure, MO picture.

Aromaticity: the Huckel rule, aromatic ions.

Aromatic electrophilic substitution-general pattern of the mechanism, role of σ and π complexes. Mechanism or nitration, halogenation, sulphonation, mercuration and Friedel-Crafts reaction. Energy profile diagrams. Activating and deactivating substituents, orientation and ortho/para ratio. Side chain reactions of benzene derivatives.

Methods of formation and chemical reaction of alkylbenzenes alkynyl benzenes.

3.Alkyl and aryl halides

Nomenclature and classes of alkyl halides, methods of formation chemical reactions. Mechanisms of nucleophilic substitution reactions of alkyl halides, $S_N2$and S_N1 reactions with energy profile diagrams.

Methods of formation of aryl halides, nuclear and side chain reactions. The addition elimination and the elimination-additional mechanisms of nucleophilic aromatic substitution reactions.

Relative reactivities of alkyl halides vs allyl, vinyl and aryl halides.

TOTAL SPLIT OF SYLLABUS MONTH/LECTURE WISE:

Class: B.Sc.-I,sem II Organic chemistry **Section:** A/B

S. No.	Month	Subject & Section	Contents To Be Taught	Methods & Teaching Aids Used
1	Jan	Sec -A	Stereochemistry of Organic Compounds Concept of isomerism. Types of isomerism	Lecture method & White board
		Sec-B	Stereochemistry of Organic Compounds Concept of isomerism. Types of isomerism	Lecture method & White board
2	Feb	Sec -A	Geometrical and conformational isomerism Arcncs and Aromaticity: mechanism,ortho ,para ,meta,product benzene structure.ortho directing,meta directing	Lecture method & White board
		Sec-B	Geometrical and conformational isomerism Arcncs and Aromaticity: mechanism,ortho ,para ,meta,product benzene structure.ortho directing,meta directing	Lecture method & White board
3	march	Sec -A	**Alkyl and aryl halides** :energy diagram ,sn^1,sn^2 mechanism, method of formation aryl halides	Lecture method & White board
		Sec-B	**Alkyl and aryl halides** :energy diagram ,sn^1,sn^2 mechanism, method of formation aryl halides	
4	april		**Alkyl and aryl halides** Relative reactivities of alkyl halides vs allyl, vinyl and aryl halides.	
			Alkyl and aryl halides Relative reactivities of alkyl halides vs allyl, vinyl and aryl halides.	

Data From :- HANISHA SHARMA

TEACHER H.O.D PRINCIPLE

RECOMMENDED BOOKS:

1.Organic Chemistry. Morrison and Boyd, Prentice Hall.
2.Organic Chemistry. L.G. Wade lr.Prentice Hall.
3.Fundamentals of Organic Chemistry. Solomons, John Wiley.
4.Organic Chemistry. Vol. I, II & III. S.M. Mukherji, S.P. Singh and R.P. Kapoor, Wiley Eastern Ltd. (New Age International)
5. Organic Chemistry. F.A. Aarey, McGraw Hill India.

EVALUATION PATTERN:

Max Marks : 35

i. Semester paper : 26

ii. Internal Assesments : 09

Pass Marks : 35%

INSTRUCTIONS FOR THE PAPER SETTER

The question paper will consist of three sections: A, B and C. Sections A and B will have four questions each from the respective section of the syllabus and will carry 4 marks each. Section C will consist of 5 short answer questions that will cover the entire syllabus and will be of 2 marks each. Use of scientific non-programmable calculator is allowed.

INSTRUCTIONS FOR THE CANDIDATES

Candidates are required to attempt five questions selecting two questions from each of Section A & B and entire Section C.

Weekly Syllabus Coverage

5

Date	Class & Section	Subject	Topics	Methods & Teaching Aids Used
22/01/19	B.Sc I	organic	Nomenclature of benzene	White
	A & B	Chemistry	derivatives.	Board
				lecture
23/01/19	B.Sc I		Molecular structure of	White
	A & B		benzene. Stability	Board
			of Benzene.	lecture
				method.
~~28/01/19~~	~~B.Sc I~~			

Teacher Hawsle ..... HOD ..... Principal .....

Weekly Syllabus Coverage

Date	Class & Section	Subject	Topics	Methods & Teaching Aids Used
28/01/19	B.Sc I		Resonance structure.	Lecture
	A&B			Method
				& White bo
29/01/19	B.Sc I		MO picture of	Lecture
	A&B		benzene.	Method &
				White Board
30/01/19	B.Sc I		Huckel rule.	Lecture
	A&B		and aromatic ion.	and
				white
				Board.

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Weekly Syllabus Coverage

Date	Class & Section	Subject	Topics	Methods & Teaching Aids Used
05/02/19	B.Sc I	organic	Introduction to syllabus	white
	A & B	chemistry	and University pattern	Board.
			Important questions	& Lecture
				method
06/02/19	B.Sc I	organic	Introduction to Stereo-	white
	A & B	chemistry	chemistry	Board
				& Lecture
				Method.

Teacher Jawisha ..... HOD ..... Principal .....

Weekly Syllabus Coverage

Date	Class & Section	Subject	Topics	Method Teaching Use
11/02/19	B.Sc I	organic	Concept of isomerism.	Lectur
	A & B	Chemistry	Types of isomerism	Method
				White B
12/02/19	B.Sc I	organic	optical isomerism - elements	Lectures
	A & B	Chemistry	of symmetry. Molecular	Metho
			chirality, enatiomers,	White B
			stereogenic centre.	
13/02/19	B.Sc I	Organic	optical activity, Properties	Lecture
	A & B	Chemistry	of enatiomers. clural	Method
			and achural molecules	& White
			with two stereogenic	Board
			centres. diastereomers.	

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Weekly Syllabus Coverage

Date	Class & Section	Subject	Topics	Methods & Teaching Aids Used
8/02/19	B.Sc I A & B	organic Chemistry	Threo and erythro diastereomers, Meso compounds.	White board & Lecture Method
20/02/19	B.Sc I A&B	organic Chemistry	Resolution of enatiomers. En.	White board. & Lecture Method.

Teacher............ [signature] ....HOD..Principal..

Weekly Syllabus Coverage

Date	Class & Section	Subject	Topics	Method of Teaching Used
26/02/19	B.Sc I	organic	Inversion, Retention	White
	A & B	chemistry	and racemisation.	Board
				& lect
				Method
27/02/19	B.Sc I	organic	Relative and absolute	White
	A & B	chemistry	configuration. Sequence	Board
			Rule.	lecture
				method

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Weekly Syllabus Coverage

Date	Class & Section	Subject	Topics	Methods & Teaching Aids Used
5/03/19	B.Sc I	organic	D & L and R & S systems	White
	A & B	Chemistry	of Nomenclature	Board &
				Lecture
				Method
03/19	B.Sc I	Organic	Geometric Isomerism	White
	A & B	Chemistry	determination of configuration	Board &
			of geometric isomers.	Lecture
			E & Z system of nomen-	Method
			clature.	

Teacher Hawsha HOD Principal

Weekly Syllabus Coverage

Date	Class & Section	Subject	Topics	Method Teaching Used
11/03/19	B.Sc I	organic	Geometric isomerism in	White
	A & B	chemistry	oximes and alicyclic	Board
			compounds.	& lect
				Methe
12/03/19	B.Sc I	organic	Conformational isomerism -	White
	A & B	chemistry	conformational analysis	Board
			of ethane and n-butane -	& Lectu
			conformations of.	Method
			cyclohexane.	
13/03/19	B.Sc I		Axial and equatorial	White
	A & B		bonds, conformation	Board &
			of mono substituted	lecture
			cyclohexane derivatives	Method.

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Weekly Syllabus Coverage

Date	Class & Section	Subject	Topics	Methods & Teaching Aids Used
8/03/19	B.sc I		Newman projection and	Lecture
	A & B		Sawhorse formulas.	method
			Fischer and flying	& white
			wedge formulas.	Board
9/03/19	B.sc I		Arenes and Aromaticity.	
	A & B		The aryl group. Aromatic	Lecture
			Nucleus and side chain	method &
			Structure of benzene	white
			molecular formula and	Board.
			Kekule structure.	

Teacher Harsha .... HOD .... Principal ....

Weekly Syllabus Coverage

Date	Class & Section	Subject	Topics	Metho Teachin Use
25/03/19			Aromatic electrophilic	White
			Substitution general	Boar
			pattern of mechanism	& lec
			role of σ and π.	Meth
			Complexes.	
26/03/19			Mechanism of nitration,	White
			halogenation, Sulphonation	Boar
			mercuration and Friedel.	&
			crafts reaction.	lecture
				Method
27/03/19			Energy profile diagrams -	White
			Activating and deactivating	Board &
			substituents, orientation	lecture
			and ortho/para ratios	Method
			Side chain reactions of	
			benzene derivatives.	
			Alkylbenzenes.	

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Weekly Syllabus Coverage

Date	Class & Section	Subject	Topics	Methods & Teaching Aids Used
1/04/19	B.Sc I	Organic	Alkyl halides and	White
	A & B		formation, chemical	Board
			Rxn. S_N1 and S_N2	& lecture
			Mechanism. Energy Diagrams.	Method
02/04/19	B.Sc I	Organic	Methods of formation	White
	A & B		of aryl halides.	Board &
			Nuclear and side	lecture
			Chain rxn.	Method.
03/04/19	B.Sc I	Organic	The addition elimination	White
	A & B		and the elimination —	Board &
			additional mechanism	Lecture
			of Nucleophilic Rxn	Method.
04/4/19	B.Sc I	Organic	Relative reactivities	
	A & B		of alkyl halides vs	
			allyl, vinyl and aryl	
			halides.	

Teacher.....HOD.....Principal.....

Roll No. .....

Total Pages : 5

2888/M

L–6/2058

ORGANIC CHEMISTRY

Paper–202

Semester–II

Time Allowed : 3 Hours] [Maximum Marks : 55

Note : The candidates are required to attempt **two** questions each from Section A carrying 8 marks each and Section B carrying 8½ marks each and the entire Section C consisting of 11 short answer type questions carrying 2 marks each.

SECTION—A

1. (a) Draw Fischer, Newman and Saw hoarse representations of *meso*-tartaric acid. 3

10A

(b) Discuss how racemic modification is performed in different ways using suitable racemic compounds. 5

2. (a) How to resolve a pair of amino acids and alcohols ? 4

(b) Name the methods for asymmetric induction and discuss one in detail. 4

3. (a) How NMR and IR help in establishing the conformation and stability of 1,2-dihydroxyrthane and 2-hydroxy propionic acid ? 4

(b) Discuss the optical isomerism due to restricted rotation in biphenyls and allenes. 4

4. (a) Explain the path of conversion of one chair from to another chair form using energy considerations. 4

(b) Draw the most stable conformation of

(i) 1,2- and 1,3-dimethylcyclohexane

(ii) 1,3-dihydroxycyclohexane. 4

SECTION—B

5. (a) Discuss Geometrical isomerism using Curtin-Hammett principle. 4

(b) How epoxidation differ with Sharpless asymmetric epoxidation ? Justify and provide mechanism also. 4½

6. (a) Explain the addition of Bromine on 1,3–butadiene at low ad moderate temperature. 4

(b) Discuss the mechanism of addition of Lithium aluminum hydride on ketones and Carboxylic acid. 4½

7. (a) How methyl magnesium bromide, dimethyl zinc and methyl lithium react with unsaturated carbonyl compound ? 6

(b) Provide an example with mechanism of Meerwein Pondroff Varley reduction. 2½

10B

Attendance Detail

- Subject Tital : ORGANIC CHEMISTRY
- Class/Section : B.Sc-I (A)
- Name of Lecturer :HANISHA SHARMA
- Session : 2018-19(APR) SEM-II

S No	Roll No	Student Name	Lect. Attended	%age detail
1	1301	GURPREET KAUR	23	82
2	1302	ARSHPREET KAUR	24	86
3	1303	KHUSHNASEEB	25	89
4	1304	SUKHDEEP KAUR	16	57
5	1306	DIKSHA GOYAL	25	89
6	1307	SATVEER KAUR	23	82
7	1308	TEJINDER KAUR	21	75
8	1309	AARUSHI GOYAL	25	89
9	1310	MADINA	18	64
10	1311	JAGDEEP SINGH	22	79
11	1312	BINEETA	21	75
12	1313	JASHAN	23	82
13	1314	SONALI SINGLA	25	89
14	1315	CHEFFY RANI	25	89
15	1316	SIMRANJEET KAUR	21	75
16	1317	NAVNEET KAUR	25	89
17	1318	SIMRANJEET KAUR	26	93
18	1321	PNEET KAUR	10	36
19	1323	KARMTEJ SINGH	20	71

20	1324	HARPREET SINGH	22	79
21	1325	HARPREET KAUR	14	50
22	1326	KULDEEP SINGH	6	21
23	1328	HARVINDER SINGH	2	7
24	1329	RIYA KAUR	18	64
25	1330	KULDEEP KAUR	19	68
26	1331	RAMANDEEP SINGH	20	71
27	1332	GURWINDER SINGH	3	11
28	1334	JASMEEN KAUR	21	75
29	1335	NAVNEET GILL	22	79
30	2601	MANISHA RANI	20	71
31	2602	DEEPIKA RANI	21	75
32	2603	CHARANJEET KAUR	23	82
33	2604	KAPIL	26	93
34	2605	KHUSHI GARG	25	89
35	2606	RAVI GARG	22	79
36	2607	MANPREET KAUR	21	75
37	2609	SIMRANJIT KAUR SAINI	19	68
38	2610	LOVEPREET SINGH	24	86
39	2611	MANPREET KAUR	24	86
40	2612	SANDEEP SINGH	22	79
41	2613	ROHIT SACHDEVA	27	96
42	2614	GURPREET KAUR	20	71
43	2615	LOVEJIT KAUR	24	86

44	2616	MANPREET KAUR	25	89
45	2617	SUMAN SHARMA	28	100
46	2618	KIRANDEEP KAUR	22	79
47	2619	NIRMARJEET KAUR	24	86
48	2620	SIMRANJEET KAUR	26	93
49	2621	SIMRANJIT KAUR	24	86
50	2622	KOMAL KAUR	21	75
51	2623	GURPREET KAUR	22	79
52	2624	SUMANPREET KAUR	26	93
53	2625	SILVIA KHIPAL	25	89
54	2626	PAWANPREET KAUR	24	86
55	2627	LOVEPREET KHA	28	100
56	2628	SAHIL RISHI	25	89
57	2629	AMANDEEP KAUR	22	79
58	2630	GURDEEP SINGH	17	61
59	2631	HARSIMRANJEET KAUR	25	89
60	2632	MEHAK	21	75
61	2633	SALMA KAPOOR	26	93
62	2634	ARSHDEEP SINGH	22	79
63	2635	SONIA	27	96
64	2636	LABHJEET SINGH	22	79
65	2637	JASPREET KAUR	23	82
66	2638	LOVEPREET KAUR	22	79
67	2639	SUKHVIR KAUR	21	75

68	2640	SHUBHAM SHARMA	23	82
69	2641	PINKI RANI	23	82
70	2642	SIMRAN KAUR	26	93
71	2643	ASHISH KUMAR	16	57
72	2644	NISHA	21	75
73	2645	NEHA	24	86
74	2646	HARPREET SHARMA	26	93
75	2647	JASPREET KAUR	24	86
76	2648	AJAY KUMAR	23	82
77	2649	RAVINDER SINGH	18	64
78	2650	SWINDER KAUR	23	82
79	2651	RAMANDEEP SINGH	24	86
80	2652	KESHAV SINGLA	18	64
81	2653	MUSKAN SINGLA	24	86
82	2654	NAVDEEP KAUR	22	79
83	2657	RAJPREET SINGH	16	57
84	2658	JASWINDER KAUR	24	86
85	2659	AMRITPAL SINGH	24	86
86	2660	GOLDY SINGH	10	36
87	2669	SAHIL KHAN	25	89
88	2673	JASPREET SHARMA	26	93

INCHARGE H.O.D PRINCIPAL

Attendance Detail

- Subject Tital : ORGANIC CHEMISTRY
- Class/Section : B.Sc-I (B)
- Name of Lecturer :HANISHA SHARMA
- Session : 2018-2019(APR) SEM-II

S No	Roll No	Student Name	Lect. Attended()	%age detail
1	2661	MANISHA RANI	23	85
2	2662	ROMAN RANI	16	59
3	2663	SAMEER KHAN	18	67
4	2664	MANJEET KAUR	16	59
5	2665	JASPREET SINGH	19	70
6	2667	INDERPAL SINGH	8	30
7	2668	NAVDEEP KAUR	22	81
8	2670	SARBJEET KAUR	24	89
9	2671	MOHIT GARG	26	96
10	2672	KHUSHBOO GARG	20	74
11	2674	RAJVEER KAUR	22	81
12	2675	RAMANDEEP KAUR	23	85
13	2676	GURWINDER SINGH	23	85
14	2677	NAVDEEP SINGH	19	70
15	2679	LOVEDEEP SINGH	16	59
16	2681	RUPINDER KAUR	19	70
17	2682	KULWINDER SINGH	21	78
18	2683	NEHA RANI	22	81
19	2684	HARMANJIT SINGH	16	59
20	2685	SACHIN SINGLA	16	59

21	2686	JAGDEEP SINGH	25	93
22	2687	PRABHJOT SINGH	19	70
23	2688	MANDEEP SINGH	21	78
24	2689	PRABHJOT	24	89
25	2690	KASHERDEEN	24	89
26	2691	RAVI SAINI	4	15
27	2692	SIMRANJEET KAUR	23	85
28	2693	LOVEPREET SINGH	20	74
29	2695	MAMTA	24	89
30	2696	SANDEEP KAUR	12	44
31	2697	LOVEPREET SINGH	16	59
32	2699	SAHIL	20	74
33	2700	HARDEEP KAUR	20	74
34	2701	RAJANDEEP SINGH	17	63
35	2702	GURSEWAK SINGH	7	26
36	2703	RITIKA	20	74
37	2704	PREETY RANI	22	81
38	2705	PARMINDER SINGH	24	89
39	2706	SUKHPREET KAUR	5	19
40	2707	RENU BALA	22	81
41	2708	POONAM RANI	21	78
42	2709	SATGUR SINGH	13	48
43	2710	VINEET KUMAR	22	81
44	2711	BHARAT SINGH	17	63

45	2712	GURDHYAN KAUR	17	63
46	2713	HARMANJEET KAUR	19	70
47	2715	ISHU BANSAL	24	89
48	2717	DAVINDER	15	56

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SPECIAL ATTENTION FOR MERITORIOUS STUDENTS:

Special attention have been given so that they can score more like

- discussion
- motivation
- additional tasks etc.

SPECIAL ATTENTION FOR WEAKER STUDENTS:

1. Special attention have been given to improve their performance in classes as well as in final examination.
2. Additional work and assignment have been given.
3. Additional time has been given to solve their problems.

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ADDITIONAL DUTIES

1. IN DECORATION COMITTEE DUTY ON NATIONAL SCIENCE DAY
2. DECIPLINE DUTY ON NATIONAL SCIENCE DAY
3. PRACTICAL EXAM DUTY
4. PICTORIAL DUTY
5. PAPER CHECKING DUTY
6. EXAM DUTY
7. SCIENCE CLUB MEMBER

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