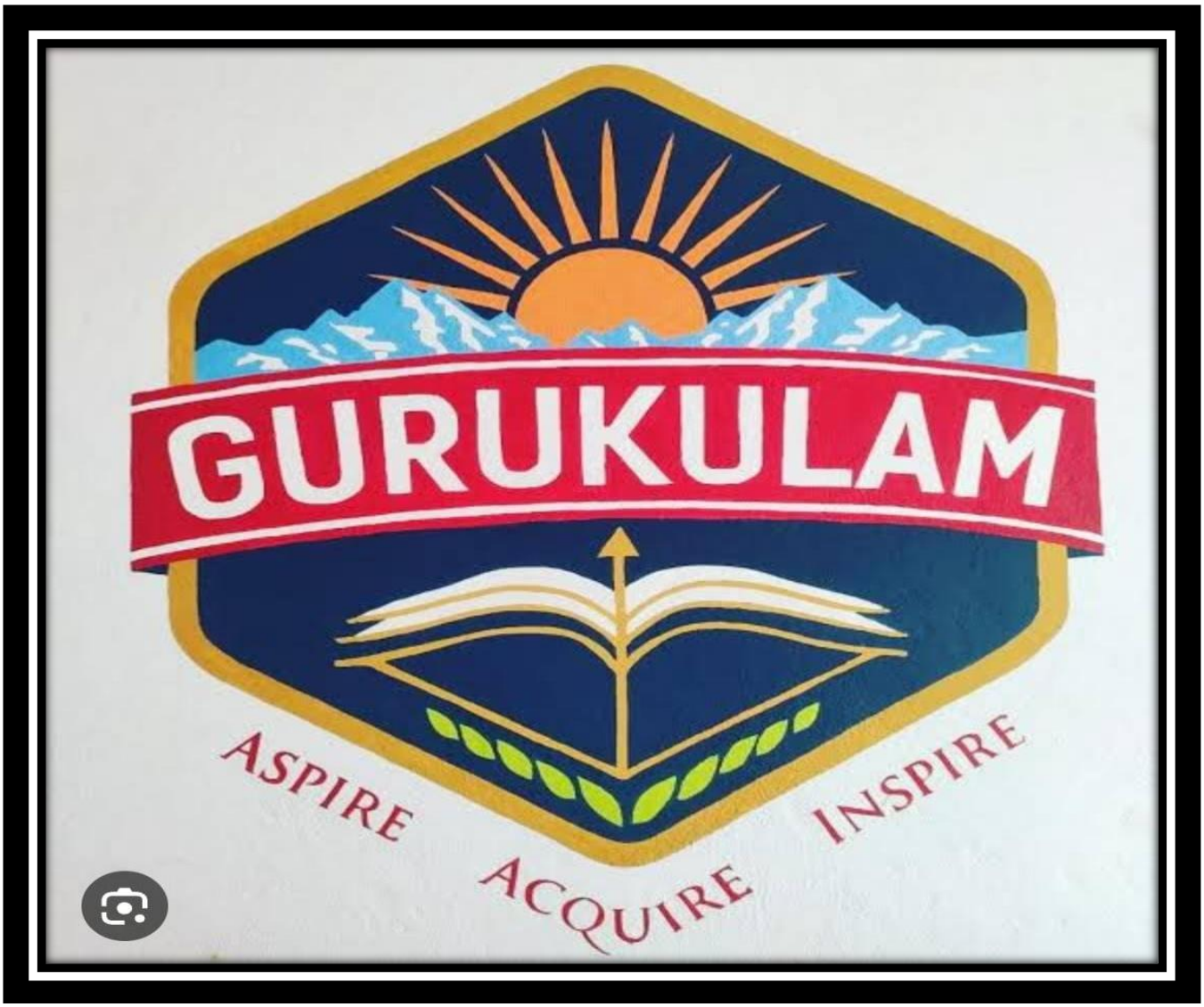
WELCOME TO NAAC PEER TEAM

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE (G) ASIFABAD

DEPARTMENT OF CHEMISTRY


GURUKULAM
ASPIRE
ACQUIRE
INSPIRE

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE (G) ASIFABAD

CONTENTS

I.CURRICULARASPECTS

1. Brief History of the Department Combinations

2. List of Teaching Staff and Supporting Staff

3. Student Strength

4. Socio-Economic Status of Students

5. Result analysis

6. Time-Table

7. Workload

8. Syllabus

9. Annual Academic Plan for Curricular Programme

For the year 2019-2020

ABOUT THE DEPARTMENT

SUCCESSI ON LIST OF IN CHARGES OF THE DEPARTMENT

The following contribution to development of this Department and rendered their services for the up lift women of the department particular and college in general.

Head of the Department ; G.USHARANI

Name of the Lecturer : G.SAISUMA
A.SNEHA

The present existence of the T T W R D C G A S I F A B A D passed through the following stages.

1. This college was started in 08-O8-2017
2. College started with B.A.,B.Com,BZC,MBZC courses
3. In 2017-18 was started CBCS Chemistry.

The Department of Chemistry was established in the year 2017-2018 and successfully run up due to lack of admissions courses were reorganized

And restored in the year2019-20, D.Reena was the first head of the department, started B.Sc. course with the combination of Mathematics, Physics, Botany, Zoology, Chemistry and Computer science/ Computer applications. This Institute was affiliated to Kakatiya University, Warangal.

Courses Offered

At Present the Following combinations are offered in this college as CHEMISTRY one of the Elective subject.

Programme	Course/Group	Medium	Combinations Offered
BSc. Physical Science(CBCS)	B.Sc(MPC)	ENGLISH	Maths,Physics,Chemistry
BSc. Life Science(CBCS)	B.Sc(BZC)	ENGLISH	Botany,Zoology, Chemistry
BSc. Life Science(CBCS)	B.Sc(MBZC)	ENGLISH	Microbiology,zoology,chemisry

FACULTY DETAILS

No.ofTeachingStaff : 03

S.NO.	Name of the faculty	Qualifications	Length of service
1.	G.USHARANI	M.Sc.M.Ed.	17Years
2.	G.SAISUMA	M.Sc.B.ED	2 years
3.	A.SNEHA	M.SC B.ED	2 Years

Non-Teaching staff:

No. of posts sanctioned : 02 No of posts filled: 02

S.NO.	Name of the faculty	Qualifications	Length of service
1.	A.Girijabai	Intermediate	10years
2.	**D.yashoda**	MSC,BED	3 YEARS

Students Strength Particulars

FortheYear2017-2018

B.Sc.IYear

Group	Medium	2017-2018		
		Men	Women	Total
B.Sc.(MPC)	ENGLISH	0	20	20
B.SC.BZC	ENGLISH	0	39	39
	Total		**59**	**59**

B.Sc.IIYear

Group	Medium	2017-2018		
		Men	Women	Total
B.Sc.(MPC)	ENGLISH	0	20	20
B.SC BZC	**ENGLISH**	**0**	**39**	**39**

B.Sc.IIIYear

Group	Medium	2017-2018		
		Men	Women	Total
B.Sc (MPC)	ENGLISH	0	20	20
B.SC BZC	ENGLISH	0	39	32

Students Strength Particulars

FortheYear2018-2019

B.Sc.IYear

Group	Medium	2018-2019		
		Men	Women	Total
B.Sc.(MPC)	ENGLISH	0	17	17
B.SC BZC	ENGLISH	0	35	35
B.SC MBZC	**ENGLISH**	**0**	**22**	**22**
			74	**74**

B.Sc.IIYear

Group	Medium	2018-2019		
		Men	Women	Total
B.Sc(MPC)	ENGLISH	0	17	17
B.Sc(BZC)	ENGLISH	0	35	35
B.SC MBZC	**ENGLISH**	**0**	**22**	**22**

B.Sc.IIIYear

Group	Medium	2018-2019		
		Men	Women	Total
B.Sc(MPC)	ENGLISH	0	17	17
B.Sc (BZC)	TELUGU	0	35	35
B.SC MBZC	ENGLISH	0	22	22

Students Strength Particulars

FortheYear2019-2020

B.Sc.IYear

Group	Medium	2019-2020		
		Men	Women	Total
B.Sc.Physicalscience (CBCS) MPC	ENGLISH	0	23	23
B.Sc.LifeScience(CBCS) BZC	ENGLISH	0	32	32
B.ScLifeScience(CBCS) MBZC	ENGLISH	0	23	23
Total:			78	78

B.Sc.IIYear

Group	Medium	2019-2020		
		Men	Women	Total
B.Sc.Physicalscience(CBCS)	ENGLISH	0	23	23
B.Sc.LifeScience(CBCS)	TELUGU	0	32	32
B.Sc.LifeScience(CBCS)	ENGLISH	0	23	23

B.Sc.IIIYear

Group	Medium	2019-2020		
		Men	Women	Total
B.Sc.Physicalscience(CBCS)	ENGLISH	0	23	23
B.Sc.LifeScience(CBCS)	TELUGU	0	32	32
B.Sc.LifeScience(CBCS)	ENGLISH	0	23	23

Student's Strength Particulars

FortheYear2020-2021

B.Sc.I Year

Group	Medium	2020-2021		
		Men	Women	Total
B.Sc. PHYSICAL SCIENCE MPC	ENGLISH	0	13	13
B.Sc.Life Science(CBCS) BZC	TELUGU	0	31	31
B.ScLife Science(CBCS) MBZC	ENGLISH	0	24	24
Total		0	68	68

B.Sc.IIYear

Group	Medium	2020-2021		
		Men	Women	Total
B.Sc. PHYSICAL SCIENCE(CBCS)	ENGLISH	0	13	13
B.Sc.LifeScience(CBCS)	TELUGU	0	31	31
B.ScLife Science(CBCS)	ENGLISH	0	24	24
Total		0	68	68

B.Sc.IIIYear

Group	Medium	2020-2021		
		Men	Women	Total
B.Sc. PHYSICAL SCIENCE(CBCS)	ENGLISH	0	13	13
B.Sc.LifeScience(CBCS)(CBCS)	TELUGU	0	31	31
B.ScLife Science(CBCS)	ENGLISH	0	24	24
Total		0	68	68

Student's Strength Particulars

FortheYear2021-2022

B.Sc.IYear

Group	Medium	2021-2022		
		Men	Women	Total
B.Sc.(MPC)	ENGLISH	0	21	21
B.SC BZC	ENGLISH	0	31	31
B.SC MBZC	**ENGLISH**	**0**	**28**	**28**
	Total	**0**	**80**	**80**

B.Sc.IIYear

Group	Medium	2021-2022		
		Men	Women	Total
B.Sc.(MPC)	ENGLISH	0	21	21
B.SC BZC	ENGLISH	0	31	31
B.SC MBZC	**ENGLISH**	**0**	**28**	**28**
	Total	0	80	80

B.Sc.IIIYear

Group	Medium	2021-2022		
		Men	Women	Total
B.Sc.(MPC)	ENGLISH	0	21	21
B.SC BZC	ENGLISH	0	31	31
B.SC MBZC	**ENGLISH**	**0**	**28**	**28**
	Total	0	80	80

Students Strength Particulars

FortheYear2022-2023

B.Sc.IYear

Group	Medium	2022-2023		
		Men	Women	Total
B.Sc.(MPC)	ENGLISH	0	19	19
B.SC BZC	ENGLISH	0	26	26
B.SC MBZC	**ENGLISH**	**0**	**22**	**22**
	Total	**0**	**67**	**80**

B.Sc.IIYear

Group	Medium	2022-2023		
		Men	Women	Total
B.Sc.(MPC)	ENGLISH	0	19	19
B.SC BZC	ENGLISH	0	26	26
B.SC MBZC	**ENGLISH**	**0**	**22**	**22**
	Total	**0**	**67**	**80**

B.Sc.IIIYear

Group	Medium	2022-2023		
		Men	Women	Total
B.Sc.(MPC)	ENGLISH	0	19	19
B.SC BZC	ENGLISH	0	26	26
B.SC MBZC	**ENGLISH**	**0**	**22**	**22**
	Total	**0**	**67**	**80**

Socio-Economico Status 0f Students:

For the Year 2017-2018

Sl.No.	course	SC		ST		BC		OC		Total	
		Girls	Total	G	T	G	T	G	T	G	T
1	B.Sc.(Life Science)BZC EM	04	04	32	32	3	3	0	0	39	39
2	B.Sc.(Phy.Science)MPC EM	0	0	19	19	1	1	0	0	20	20
	TOTAL	**04**	**04**	**51**	**51**	**4**	**4**	**0**	**0**	**59**	**59**

Socio-Economic Status Students:

For the Year 2018-2019

Sl.No.	course	SC		ST		BC		OC		Total	
		Girls	Total	G	T	G	T	G	T	G	T
1	B.Sc.(Life Science)BZC EM	06	06	25	25	04	04	0	0	35	35
2	B.Sc.(Life Science)Mbzc EM	04	04	15	15	02	02	01	01	22	22
3	B.Sc.(Phy.Science)MPC EM	01	01	14	14	02	02	0	0	17	17
	TOTAL	**11**	**11**	**54**	**54**	**08**	**08**	**01**	**01**	**74**	**74**

Socio-Economic of Status Students:

For theYear 2019-2020

l.No.	course	SC		ST		BC		OC		Total	
		Girls	Total	G	T	G	T	G	T	G	T
1	B.Sc.(Life Science)BZC EM	07	07	20	20	05	05	0	0	32	32
2	B.Sc.(Life Science)Mbzc EM	03	03	11	11	09	09	0	0	23	23
3	B.Sc.(Phy.Science)MPC EM	0	0	18	18	05	05	0	0	23	23
	TOTAL	**10**	**10**	**49**	**49**	**19**	**19**	**0**	**0**	**78**	**78**

Socio-Economic of Status Students:

For theYear 2020-2021

l.No.	course	SC		ST		BC		OC		Total	
		Girls	Total	G	T	G	T	G	T	G	T
1	B.Sc.(Life Science)BZC EM	02	02	26	26	03	03	0	0	31	31
2	B.Sc.(Life Science)Mbzc EM	02	02	18	18	04	04	0	0	24	24
3	B.Sc.(Phy.Science)MPC EM	0	0	10	10	03	03	0	0	13	13
	TOTAL	**04**	**04**	**54**	**54**	**10**	**10**	**0**	**0**	**68**	**68**

Socio-EconomicofStatus Students:

For theYear 2021-20222

l.No.	course	SC		ST		BC		OC		Total	
		Girls	Total	G	T	G	T	G	T	G	T
1	B.Sc.(Life Science)BZC EM	03	03	26	26	02	02	0	0	31	31
2	B.Sc.(Life Science)Mbzc EM	02	02	23	23	03	03	0	0	28	28
3	B.Sc.(Phy.Science)MPC EM	0	0	17	17	04	04	0	0	21	21
	TOTAL	**05**	**05**	**66**	**66**	**09**	**09**	**0**	**0**	**80**	**80**

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGR GIRLS ,ASIFABAD

DEPARTMENT OF CHEMISTRY 2019-2020

	BSC (BZC)		SEMESTER 1			
S.NO	**NAME OF THE STUDENT**	**SUBJECT**	**INTERNAL 1**	**INTERNAL 2**	**AVERAGE**	**EXTERNAL MARKS /GRADE**
1	A.SANDHYARANI	CHEMISTRY	20	15	15	B
2	A.LAVANYA	CHEMISTRY	17	17	17	B
3	A.MOUNIKA	CHEMISTRY	15	14	15	F
4	A.SANDHYARANI	CHEMISTRY	14	16	16	F
5	A.SHAKUNTHALA	CHEMISTRY	18	18	18	B
6	A.ARCHANA	CHEMISTRY	17	14	17	D
7	B.NANDANA	CHEMISTRY	14	16	16	F
8	D.SOWJANYA	CHEMISTRY	15	18	18	B
9	D.NIRMALA	CHEMISTRY	16	17	17	D
10	G.PRATHIKSHA	CHEMISTRY	17	17	17	F
11	G.PRIYANKA	CHEMISTRY	13	12	13	B
12	J.MANISHA	CHEMISTRY	12	13	13	A
13	J.NIROSHA	CHEMISTRY	11	14	14	D
14	K.SRAVANI	CHEMISTRY	17	15	17	B
15	K.NAVEENA	CHEMISTRY	18	16	18	F
16	K.LALITHA	CHEMISTRY	14	17	17	C
17	K.SURYAKALA	CHEMISTRY	16	18	18	F
18	M.Manisha	CHEMISTRY	15	19	19	B
19	M.Shobha	CHEMISTRY	19	14	19	F
20	M.Sondevi	CHEMISTRY	14	15	15	B
21	M.Vandana	CHEMISTRY	13	14	14	F
22	MD.Anjjuma	CHEMISTRY	14	17	17	B
23	N.Ramya	CHEMISTRY	17	14	17	D
24	N.Kavitha	CHEMISTRY	18	15	18	B
25	N.Neela	CHEMISTRY	16	16	16	F
26	N.Nikhitha	CHEMISTRY	15	14	15	B

SEMESTER 2			
INTERNAL 1	INTERNAL 2	AVERAGE	EXTERNAL MARKS /GRADE
15	14	15	D
14	18	18	F
16	14	16	B
17	16	17	B
18	17	18	B
14	19	19	F
15	14	15	D
17	15	17	D
17	17	17	B
18	14	18	D
14	15	15	F
17	17	17	B
18	18	18	C
13	13	13	D
14	16	16	D
17	14	17	B
18	15	18	A
19	17	19	F
15	13	15	B
14	17	17	B
16	18	18	C
17	14	17	F
16	15	16	B
13	16	16	F
17	17	17	B
16	13	16	B

RESULT ANALYSIS 2018-19

Telangana Tribal Welfare Residential Degree college Girl Asifabad 2018-2019						
Group	**Semester**	**Total**	**Appeared**	**pass**	**fail**	**percentage**
Mbzc	I	20	19	18	1	**95%**
Mbzc	Ii	19	19	18	1	**94.70%**
Bzc	I	34	34	28	3	**82%**
Bzc	II	31	31	22	9	**66.60%**
Bzc	III	35	35	26	9	**82%**
Bzc	IV	35	35	28	7	**80%**
Mpc	I	14	14	13	1	**93%**
Mpc	II	14	14	12	2	**85.70%**
Mpc	III	17	17	15	2	**88%**
Mpc	IV	17	17	14	3	**82.30%**
TOTAL		**236**	**235**	**194**	**38**	**83%**

RESULT ANALYSIS 2019-2020

Telangana Tribal Welfare Residential Degree college Girl Asifabad 2019-2020						
Mbzc	I	16	16	9	7	**56.20%**
Mbzc	II	16	16	16	Nill	**100%**
Mbzc	III	18	18	16	2	**88%**
Mbzc	IV	17	17	7	Nill	**100%**
Bzc	I	28	28	17	11	**60%**
Bzc	II	28	28	26	2	**92%**
Bzc	III	31	31	27	4	**87%**
Bzc	IV	31	30	28	2	**93%**
Bzc	V	34	34	28	7	**82%**
Bzc	VI	34	34	34	Nill	**100%**
Bzc	VII	34	30	30	Nill	**100%**
Bzc	VIII	34	30	30	Nill	**100%**
Mpc	I	22	22	12	10	**54%**
Mpc	II	22	22	22	Nill	**100%**

Mpc	III	14	14	14	Nill	100%
Mpc	IV	13	13	13	Nill	100%
Mpc	V	17	17	16	1	94%
Mpc	VI	17	17	17	Nill	100%
Mpc	VII	17	17	17	Nill	100%
Mpc	VIII	17	17	17	Nill	100%
TOTAL		405	405	359	46	89%

RESULT ANALYSIS -2020-2021

Telangana Tribal Welfare Residential Degree college Girl Asifabad 2020-2021						
Group	Semester	Total	Appeared	pass	fail	percentage
Mbzc	I	21	21	16	3	86%
Mbzc	II	21	21	19	3	90%
Mbzc	III	16	16	16	Nill	100%
Mbzc	IV	16	16	14	2	87%
Mbzc	V	17	17	17	Nill	100%
Mbzc	VI	17	17	17	Nill	100%
Bzc	I	31	31	18	13	58%
Bzc	II	31	31	20	11	64%
Bzc	III	25	25	24	1	96%
Bzc	IV	25	25	16	9	64%
Bzc	V	31	31	31	Nil	100%
Bzc	VI	30	30	30	Nill	100%
Bzc	VII	31	30	30	Nill	100%
Bzc	VIII	30	30	30	Nill	100%
Mpc	I	12	12	6	6	50%
Mpc	II	11	11	6	5	55%
Mpc	III	22	22	22	Nill	100%
Mpc	IV	19	19	16	3	84.20%
Mpc	V	13	13	13	Nil	100%
Mpc	VI	12	12	12	Nill	100%
Mpc	VII	12	12	12	Nil	100%
Mpc	VIII	12	12	12	Nill	100%
Mbzc	VII	17	17	17	Nill	100%
Mbzc	VIII	17	17	17	Nill	100%
TOTAL		489	489	431	56	88.10%

RESULT ANALYSIS 2021-2022

Telangana Tribal Welfare Residential Degree college Girl Asifabad 2021-2022						
Group	**Semester**	**Total**	**Appeared**	**pass**	**fail**	**percentage**
Bzc	I	30	30	27	3	**90%**
Bzc	II	29	29	24	5	**71.40%**
Bzc	III	28	28	19	9	**68%**
Bzc	IV	28	28	23	5	**82%**
Bzc	V	23	23	23	NIL	**100%**
Bzc	VI	23	23	22	1	**96%**
Mbzc	I	24	24	22	2	**92%**
Mbzc	II	24	24	17	7	**71%**
Mbzc	III	21	21	19	2	**90%**
Mbzc	IV	21	21	21	NIL	**100%**
Mbzc	V	15	15	15	NIL	**100%**
Mbzc	VI	15	15	14	1	**93%**
Mpc	I	21	21	20	1	**90%**
Mpc	II	19	19	19	NIL	**100%**
Mpc	III	12	12	10	2	**83.30%**
Mpc	IV	12	12	12	NIL	**100%**
Mpc	V	17	17	17	NIL	**100%**
Mpc	VI	17	17	15	2	**88%**
TOTAL		**379**	**379**	**339**	**40**	**89.40%**

RESULT ANALYSIS 2022-2023

Telangana Tribal Welfare Residential Degree college Girl Asifabad 2021-2022						
Group	**Semester**	**Total**	**Appeared**	**pass**	**fail**	**percentage**
Bzc	I	30	30	27	3	**90%**
Bzc	II	29	29	24	5	**71.40%**
Bzc	III	28	28	19	9	**68%**
Bzc	IV	28	28	23	5	**82%**
Bzc	V	23	23	23	NIL	**100%**
Bzc	VI	23	23	22	1	**96%**
Mbzc	I	24	24	22	2	**92%**
Mbzc	II	24	24	17	7	**71%**
Mbzc	III	21	21	19	2	**90%**
Mbzc	IV	21	21	21	NIL	**100%**
Mbzc	V	15	15	15	NIL	**100%**
Mbzc	VI	15	15	14	1	**93%**
Mpc	I	21	21	20	1	**90%**
Mpc	II	19	19	19	NIL	**100%**
Mpc	III	12	12	10	2	**83.30%**
Mpc	IV	12	12	12	NIL	**100%**
Mpc	V	17	17	17	NIL	**100%**
Mpc	VI	17	17	15	2	**88%**
TOTAL		**379**	**379**	**339**	**40**	**89.40%**

DEPARTMENTOFCHEMISTRY

TIMETABLE-2019-2020

DAY	I	II	III	IV		V	VI
						2;00-3;00	3;00-5;00
	9;00-10;00	10;00-11;00	11;10-12;00	12;00-1;00			
MON	BZC(2nd year) BZC(3rd year)	MBZC(2nd year) MBZC(3RD YEAR)	MBZC 1ST YEAR BZC 1st year	MPC 3rd year MPC 2nd year			PG Class for 3rd year students
TUE	BZC(2nd year) BZC(3rd year	MBZC(2nd year) MBZC(3RD YEAR	MBZC 1ST YEAR BZC 1st year	MPC 3rd year MPC 2nd year			PG Class for 3rd year students
WED	BZC(2nd year) BZC(3rd year	MBZC(2nd year) MBZC(3RD YEAR	MBZC 1ST YEAR BZC 1st year	MPC 3rd year MPC 2nd year			PG Class for 3rd year students
THU	BZC(2nd year) BZC(3rd year	MBZC(2nd year) MBZC(3RD YEAR	MBZC 1ST YEAR BZC 1st year	MPC 3rd year MPC 2nd year			PG Class for 3rd year students
FRI	Practical for 1st and 2and 3rd year students	Practical for 1st and 2and 3rd year students	Practical for 1st and 2and 3rd year students	Practical for 1st and 2and 3rd year students			

LUNCH TIME 1' 00-2;00 PM

sat	Practical for 1st and 2and 3rd year students	Practical for 1st and 2and 3rd year students	Practical for 1st and 2and 3rd year students	Practical for 1st and 2and 3rd year students			

Work Load Details

S.No	Course&Year	Work load of The Classes in Hrs per week	Work load of Practical Classes in Hrs per week	Internal Subject EST
1	BZC 1st Year	4hr	6hr	2hr
2	BZC 2ndYear	4hr	6hr	-
3	BZC 3rd year	4hr	6hr	4hr
5	MBZC 1st Year	4hr	6hr	2hr
6	MBZC 2ndYear	4hr	6hr	-
7	MBZC 3rdYear	4hr	6hr	4hr
8	MPC 2nd Year	4hr	3hr	
9	MPC,MPCS 3rdYear	4hr	3hr	8hr

Total Workload /Week = 94
Sanctioned post = 04

LIST OF THE TEACHING STAFF

2017-18

SNO	NAME	Designation	Qualification &Specialization
1.	D.Reena	HOD	M.Sc.B,ed

2018-2019

SNO	NAME	Designation	Qualification &Specialization
1.	G.Sravanthi	HOD	M.Sc, B.ed
2.	S.Vijayalaxmi	Lecturer in Chemistry	M.Sc, B.ed
3	G.Usharani	Lecturer in Chemistry	M.Sc, B.ed

2019-2020

SNO	NAME	Designation	Qualification &Specialization
1.	G.Sravanthi	HOD	M.Sc.,B.ed
2.	S.Vijayalaxmi	Lecturer in Chemistry	M.Sc.,B.ed
3	G.Usharani	Lecturer in Chemistry	M.Sc., B.ed

2020-2021

SNO	NAME	Designation	Qualification &Specialization
1.	G. Sravanthi	HOD	M.Sc, B.ed
2.	S.Vijayalaxmi	Lecturer in Chemistry	M.Sc, B.ed

3	G.Usharani	Lecturer in Chemistry	M.Sc.B. ed

2021-2022

SNO	NAME	Designation	Qualification &Specialization
1.	G.Sravanthi	HOD	M.Sc, B.ed
2.	G.Saisuma	Lecturer in Chemistry	M.Sc, B.ed
3	G.Usharani	Lecturer in Chemistry	M.Sc, B.ed

2022-2023

SNO	NAME	Designation	Qualification &Specialization
1.	G.Usharani	HOD	M.Sc, B.ed
2.	G. Sai suma	Lecturer in Chemistry	M.Sc, B.ed
3	G. Neeraja sinha	Lecturer in Chemistry	M.Sc., B.ed

CurriculumofCBCSfortheAcademicYear2019-2020

SEMESTERI
Paper I
Chemistry-I

Unit–I(Inorganic Chemistry)

1. ChemicalBonding

Ionic Solids – lattice and salvation energy, solubility of ionic solids, Fajan's rule, polarity and polarizability of ions. VSEPR Theory – Common hybridization – sp, sp2,sp3,sp3d,sp3d2 and sp3d3, shapes of molecules. Molecular orbital theory: Shapes and sign convention of orbitals.Modes of bonds. Criteria for orbital overlap. LCAO concept. Π andσ overlapping.Concept ofTypes of molecular orbitals- bonding, antibonding and non bonding. MOED of homonucleardiatomics – H2,N2,O2-,F2 (unhybridized diagrams only) and heteronuclear diatomics CO,CN-,NO,NO+andHF.Bondorder,stabilityandmagneticproperties.

2. P-BlockElements1

Group-13: Structure of diborane and higher Boranes (B4H10 and B5H9), Boron nitrogencompounds(B3N3H6andBN),LewisacidnatureofBX3.
Group–14:Carbides-Classification–ionic,covalent,interstitial–
Structuresandreactivity,Industrial applications. Silicones – Classification – straight chain, cyclic and cross-linked.
Group – 15 : Nitrides – Classification- ionic, covalent, interstitial. Rectivity – hydrolysis.Reactions

ofhydrazine,hydroxylamine,phosphazenes.

Unit–II(OrganicChemistry)

1. StructuralTheoryinOrganicChemistry

Bond polarization : factors influencing the polarization of covalent bonds, electronegativity – inductive effect. Applications ofinductive effect (a) Basicity ofamines(b)Acidityofcarboxylicacids(c)Stabilityofcarboniumions.Resonance – Mesomeric effect, application to (a) acidity of phenol. (b) Acidity of carboxylicacidsandBasicity of anilines.Stabilityof carbocations,carbanionsandfreeradicals. Hyper conjugation and its application to stability of carbonium ions, freeradicalsandalkenes.

2. AcyclicHydrocarbons

Alkanes-
Methodsofpreparation:FromGrignardreagent,Kolbesynthesis.Chemicalreactivity–inertnature,free radicalsubstitution,Halogenationexample – reactivity, selectivityandorientation.

Alkenes – Preparation of alkenes(with mechanism) (a)by dehydration of alcohols(b)dehydrohalogenation of alkyl halides (c) by dehalogenation of 1,2 dihalides,Zaitsev's rule. Properties : Anti-addition of halogen and its mechanism. Additionof HX, Markonikov's rule,addition of H2O,HOX,H2SO4 with mechanism andadditionofHBrinthepresenceofperoxide(anti-Markonikov'saddition).Oxidation(cis-additions)-hydroxylationbyKMnO4,OsO4,antiaddition–peracids(viaepoxidation), hydroboration, ozonolysis–locationofdoublebond.

Dienes – Types of dienes,reactions of conjugate dienes – 1,2 and 1,4 addition ofHBrto1,3–butadiene andDiels–Alderreaction.
Alkynes–
Preparationbydehydrohalogenationofvicinaldihalides,dehalogenationoftetrahalides.PhysicalProperties:Chemicalreactivity–electrophilicadditionofX2,HX,H2O(tautomerism),Oxidation(formationofenediol,1,2dionesandcarboxylicacids)andreduction(Metal–ammoniareduction,catalytichydrogenation).

AromaticHydrocarbons
Introductiontoaromaticity:Huckel'srule-
Benzene,NaphthaleneandAnthracene.Reactions–
Generalmechanismofelectrophilicsubstitution,

mechanismofnitration,sulphonationandhalogenations,FriedelCraft'salkylationanda cylation.Orientationof aromaticsubstitution–Definitionofortho, para, and meta direction groups. Ring activating and deactivating groupswith examples. Orientation – (i) activating groups: Amino,methoxy and alkylgroups.(ii)Deactivatinggroups–
nitro,nitrile,carbonyl,carboxylicacid,sulphonic acidandhalogroups.

Unit–III(PhysicalChemistry)

1. Atomicstructureandelementaryquantummechanics

   Black body radiation, heat capacities of solids, Rayleigh Jeans law, Planck'sradiationlaw,photoelectriceffect,Limitationsofclassicalmechanics,Co mptoneffect, deBroglie'shypothesis.Heisenberg'suncertaintyprinciple.

2. Gaseous State

   Deviation of real gases from ideal behavior. Vander Waals equation of state.Criticalphenomenon.PVisothermsofrealgases,continuityofstate.Andrew's isothermsofCO2.ThevanderWaalsconstants.Thelawofcorresponding states, reduced equation of states. Joule Thomson effect andinversion temperature of agas.Liquifaction of gases :i)Linde'smethodbasedonJouleThomsoneffectii)Claude'smethodbasedonadiab aticexpansionofagas.

3. LiquidStateandSolutions

   Intermolecular forces, structure of liquids (qualitative description). Structuraldifferencesbetweensolids,liquidsandgases,Surfacetensionanditsdeter mination using stalagmometer. Viscosity of a liquid and determination ofcoefficient of viscosity using Ostwald viscometer. Effect of temperature onsurface tension and coefficient of viscosity of a liquid (qualitative treatmentonly).
   Solution
   Liquid – liquid mixtures, ideal liquid mixtures, Raoult's and Henry's laws.Nonidealsystems.Azeotropes:HCl-H2OandC2H5OH–
   H2Osystems.Fractional distillation.Partiallymiscibleliquids:Phenol–Water,Trimethylamine–WaterandNicotine–Watersystems.

Unit–IV(GeneralChemistry)

1. GeneralPrinciplesofInorganicQualitative Analysis

Anionanalysis:Theoryofsodiumcarbonateextract,classificationandreactionsofanions-CO_3^{2-},Cl^-,Br^-,SO_4^{2-},PO_4^{3-},BO33-,CH3COO-,NO3-.Interfering ions. Cation Analysis: Principles involved – Solubility product,common ion effect, general discussion for the separation and identification ofgroup I individual cations ($Hg_2$2+, Ag+, Pb+2)with flow chart and chemicalequations. Principle involved in separation of group II & IV cations. Generaldiscussionfortheseparationandidentificationofgroup II(Hg2+,Pb2+,Bi3+,Cd2+, Sb3+), III(Al3+,Fe3+), IV(Mn2+, Zn2+) individual cations withflow chart and chemical equations. General discussion for the separation andidentification of group V individual cations (Ba2+, Sr2+, Ca2+) with flowchart and chemical equations. Theory of flame test. Identification of Group VIcations(Mg2+,NH4+).

2.Isomerism

Isomerism:Definition of isomers.Classificationof isomers:Constitutionaland Stereoisomers- definition and examples. Constitutional isomers: chain,functionalandpositionalisomers.Stereoisomers:EnatiomersandDiasteroemers – Defination and Examples. Representation of Stereoisomers-Wedge,FisherProjection,Sawhorse,Newmannformulae.

ConformationalAnalysis:Classification of Steroisomersbasedon energy.DefinationandExamples–
ConformationalandConfigurationalisomers.Conformational analysis of Ethane, n-butane, 1,2- Dichloro ethane, Dichloroethanol. Cyclic compounds: Bayer's strain theory, conformational analysis ofCycloHexane.
Cis-transisomerism:E-ZNomenclature

3. SolidStateChemistry

Laws of Crystallography: (i) Law of constancy of interfacial angle (ii)Law ofsymmetry- symmetry elements in crystal (iii) Law of rationality of indices.Definationofspacelattice,Unitcell.Bravislatticesandsevencrystalsystem

S

(Abriefreview).X-raydiffractionbycrystals:DerivationofBragg'sequation.Determination of structure of NaCl, KCl and CsCl (Bragg's method&Powdermethod).

LaboratoryCourse:

QualitativeAnalysis-Semimicroanalysisofmixtures

Analysis of two anions (one simple, one interfering) and two cations in thegivenmixture.

SEMESTERII
PaperII
Chemistry-II

Unit-I(InorganicChemistry)

1. p-blockElements-II

Oxides: Types of oxides (a) Normal- acidic, basic amphoteric and neutral (b) Mixed(c) suboxide (d) peroxide e) superoxide. Structure of oxides of C, N, P, S and Cl - reactivity, thermalstability,hydrolysis.

Oxy acids: Structure and acidic nature of oxyacids of B, C, N, P, S and Cl.Redox properties ofoxyacids of Nitrogen: HNO_2(reaction with $FeSO_4$, $KMnO_4$, $K_2Cr_2O_7$), HNO_3(reaction withH_2S,Cu),HNO_4(reactionwithKBr,Aniline),$H_2N_2O_2$(reactionwith$KMnO_4$).Redoxproperties ofoxyacidsofPotasium:H_3PO_2(reactionwith$HgCl_2$),H_3PO_3(reactionwith$AgNO_3$,$CuSO_4$).
Redox properties of oxyacids of Sulphur: H_2SO_3(reaction with $KMnO_4$, $K_2Cr_2O_7$), H_2SO_4(reaction with Zn, Fe, Cu), $H_2S_2O_3$ (reaction with Cu, Au), H_2SO_5 (reaction with KI, $FeSO_4$),$H_2S_2O_8$(reactionwith$FeSO_4$,KI)

Interhalogens- classification- general preparation- structures of AB,AB_3, $AB_5$and AB_7typeand reactivity. Poly halides- definition and structure of ICl_2^-, $ICl_4^-$and I_3^-.Comparison ofPseudohalogenswithhalogens.

2. ChemistryofZerogroupelements

General preparation,structure,bondingandreactivityofXenon compounds–Oxides,Halides

andOxy-halides. ClatheratecompoundsandAnomalous behaviorofHe(II)

3. Chemistryofd-blockelements

Characteristics of d-block elements with special reference to electronic configuration variablevalence,ability toform complexes,magneticproperties&catalyticproperties.Stability ofvarious oxidation states and SRP Comparative treatment of second and third transition serieswith their 3d analogues.Study of Ti, Cr and Cu traids.Titanium triad – electronic configurationandreactivityof+3and+4states–oxidesandhalides.Chromiumtriad– reactivityof+3and
+6 states.Coppertriad– reactivityof+1,+2and +3 states.

Unit-II(Organicchemistry)

1.AromaticHydrocarbons

Conceptof aromaticity –definition,Huckel's rule–application toBenzenoids andNon–Benzenoids(cyclopropenylcation,cyclopentadienylanionandtropyliumcation).

Preapartions:Fromacetylene, phenols,benzenecarboxylicacidsandsulphonicacids

Reactions - General mechanism of electrophilic substitution, mechanism of nitration, sulphonation,andhalogenation,FriedelCraft'salkylation(polyalkylation)andacylation.Orientatio n of aromatic substitution - Definition of ortho, para, andmeta directing groups.Ring activating and deactivating groups with examples. Orientation – (i) activating groups:Amino, methoxy and alkyl groups. (ii) Deactivating groups - carboxy, nitro, nitrile, carbonylandsulphonicacid&halogroups.

2.ArenesandPolynuclearAromatic Hydrocarbons

PreparationofalkylbenzenesbyFriedelCraft'salkylation,FriedelCraft'sacylationfollowedbyred uction,Wurtz-Fittigreaction.Chemicalreactivity:Ringsubstitutionreactions,side chainsubstitutionreactionsandoxidation.

Polynuclearhydrocarbons–Structureofnaphthaleneandanthracene(MolecularOrbitaldiagram and resonance energy) Reactivity towards electrophilic substitution. Nitration andsulphonationasexamples.

3:Halogencompounds

Nomenclature and classification: alkyl (primary, secondary, tertiary), aryl, aralkyl, allyl, vinyl,benzyl.Chemicalreactivity-
reduction,formationofRMgX,Nucleophilicsubstitutionreactions

– classificationinto$S_N1$andS_N2.Mechanismandenergy profilediagramsof $S_N1$and$S_N2$reactions. Stereochemistry of S_N2(Walden Inversion) 2-bromobutane, S_N1(Racemisation) 1-bromo-1-phenylpropane explanation of both by taking the example of optically active alkylhalide.Structure and reactivity – Ease hydrolysis - comparison of alkyl, vinyl, allyl, aryl, andbenzylhalides.

Unit–III(PhysicalChemistry)

1:Solutions

Liquid - liquid mixtures, ideal liquid mixtures**,** Raoult's and Henry's laws. Non idealsystems.AzeotropesHCl-H_2OandC_2H_5OH-H_2Osystems.Fractionaldistillation,.Partiallymiscible liquids- Phenol – Water, Trimethyl amine – Water and Nicotine –Water systems.Lowerupper consolute temperatures.Effect of impurity on consolute temperature.Immiscible liquidsandsteamdistillation.Nernstdistributionlaw.Calculationofthepartitioncoefficient.Applications ofdistributionlawwithsolventextraction.

2:DiluteSolutions&ColligativeProperties

DiluteSolutions,ColligativeProperties,Raoult'slaw,relativeloweringofvapourpressure, molecular weight determination. Osmosis - laws of osmotic pressure, its measurement,determinationofmolecularweightfromosmoticpressure.Elevationofboilingpointanddepression of freezing point.Derivation of relation between molecular weight and elevation inboiling point and depression in freezing point.Experimental methods for determining variouscolligativeproperties.Abnormalmolarmass,Van'thofffactor,degreeofdissociationandassociationofsolutes.

3:SolidstateChemistry

LawsofCrystallography–(i)LawofConstancyofinterfacialangles(ii)LawofSymmetry, Symmetry elements in crystals (iii) Law of rationality of indices. Definition of spacelattice, unit cell.Bravais Lattices and Seven Crystal systems (a brief review).X-ray diffraction bycrystals;DerivationofBragg'sequation,DeterminationofstructureofNaCl,KCl&CsCl(Bragg'smethodandPowdermethod).

Unit–IV(GeneralChemistry)

1:TheoryofQuantitativeAnalysis

Volumetric Analysis: Introduction, standard solutions, indicators, end point, titration curves,Types of titrations: i)neutralization titration- principle, theory of acid base indicators, titrationcurves and selection of indicators- strong acid - strong base, strong acid –weak base, weak acid-strongbaseandweakacid–weakbase.

Gravimetric analysis- Introduction, nucleation, precipitation, growth of precipitate, filtration andwashing,dryingandincinerationofprecipitate,coprecipitationandpostprecipitation.DeterminationofNi^{2+}

2:Theoriesofbondinginmetals:

Valence bond theory, Explanation of metallic properties and its limitations, Free electron theory,thermal and electrical conductivity of metals, limitations, Band theory, formation of bands,explanationofconductors,semiconductorsn-typeandp-type,extrinsic&intrinsicsemiconductors,andinsulators.

3:MaterialScience

Classification of materials- classification as metals, ceramics, organic polymers, composites,biologicalmaterials etc.The propertyofsuperconductivityofmaterials.

Superconductingmaterials-elements,alloysandcompounds.Propertiesofsuperconductors-zeroresistivity,Meisenereffectandthermalproperties.Composites-meaningofcomposites,advancedcomposites,classification–particlereinforcedfiberreinforcedandstructuralcompositesgeneralcharactersofcompositematerials-Particle-reinforcedcomposites–largeparticleanddispersion-strengthenedcomposite.Fiberreinforcedcomposites(continuousanddiscontinuousfibercomposites).

LaboratoryCourse

QualitativeAnalysis-II

Analysisoftwo anionsandtwocationsinthegivenmixture.

Anions: CO_3^{2-}, SO_3^{2-}, $.S^{2-}$ Cl^-, Br^-, I^- CH_3COO^-, $NO_3^-PO_4^{3-}$, BO_3^{3-}, SO_4^{2-}

Cations:Ag^+,Pb^{2+},Hg^+,Hg^{2+},Al^{3+},Cr^{3+},$Fe^{3+}Ni^{2+}$,Co^{2+},$Mn^{2+}Ca^{2+}$,Sr^{2+},Ba^{2+} Mg^{2+},NH_4^+

KAKATIYA UNIVERSITY - WARANGAL - TELANGANA

Under Graduate Courses (Under CBCS 2019–2022)

B.Sc. CHEMISTRY II Year

SEMESTER – III

Paper-III

Chemistry - III

Unit-I (Inorganic Chemistry) 15 h (1 hr/week)

S3-I-1: Chemistry of f-block elements: **5 h**

Chemistry of Lanthanides: Position in periodic table,Electronic structure, oxidation state, ionic and atomic radii- lanthanide contraction- cause and consequences, anomalous behavior of post lanthanides-complexation- type of donor ligands preferred. Magnetic properties-paramagnetism. Colour and spectra, f-f transitions –occurrence and separation– ion exchange method, solvent extraction.

Chemistry of actinides- general features – electronic configuration, oxidation state, actinide contraction, colour and complex formation. Comparison with lanthanides.

S3-I-2: Coordination Compounds-I **6 h**

Simple inorganic molecules and coordination complexes. Nomenclature – IUPAC rules, 1. Coordination number, coordination geometries of metal ions, types of ligands. 2.Brief review of Werner's theory,Sidgwick's electronic interpretation and EAN rule and their limitations. (Valence bond theory (VBT) – postulates and application to (a) tetrahedral complexes $[Ni(NH_3)_4]^{2+}$, $[NiCl_4]^{2-}$ and $[Ni(CO)_4]$ (b) Square planar complexes $[Ni(CN)_4]^{2-}$, $[Cu(NH_3)_4]^{2+}$, $[PtCl_4]^{2-}$ (c) Octahedral complexes $[Fe(CN)_6]^{4-}$, $[Fe(CN)_6]^{3-}$, $[FeF_6]^{4-}$, $[Co(NH_3)_6]^{3+}$, $[CoF_6]^{3-}$. Limitations of VBT. 3. Isomerism in coordination compounds, stereo isomerism – (a)geometrical isomerism in (i) square planar meta l complexes of the type$[MA_2B_2]$, $[MA_2BC]$, $[M(AB)_2]$, [MABCD]. (ii) Octahedral metal complexes of the type $[MA_4B_2]$, $[M(AA)_2B_2]$, $[MA_3B_3]$ using suitable examples, (b) Optical isomerism in (i). tetrahedral complexes [MABCD], (ii). Octahedral complexes $[M(AA)_2B_2]$, $[M(AA)_3]$ using suitable examples. Structural isomerism: ionization, linkage, coordination ligand isomerism using suitable examples.

01/09/2020 01/09/2020 01/09/2020

S3-I-3: Metal carbonyls and Organometallic Chemistry **4 h**

Metal carbonyls: Preparation and properties of $Ni(CO)_4$. Structural features of $Ni(CO)_4$, $Fe(CO)_5$, $Fe_2(CO)_9$, $Fe_3(CO)_{12}$ and $Cr(CO)_6$ -18 valence electron rule.

Definition, nomenclature and classification of organometallic compounds. Methods of preparation, properties and applications of alkyl and aryl compounds of Li, Mg & Al.

Unit - II (Organic Chemistry) 15h(1 hr/week)

S3-O-1: Carboxylic acids and derivatives **5 h**

Preparation: a) Hydrolysis of Nitriles, amides and esters. b) Carbonation of Grignard reagents. Special methods of preparation of Aromatic Acids - Oxidation of Arenes. Physical properties- hydrogen bonding, dimeric association,. Chemical properties – Reactions involving H, OH and COOH groups -salt formation, anhydride formation, Acid halide formation, Esterification (mechanism) & Amide formation. Reduction of acid to the corresponding primary alcohol - via ester or acid chloride. Degradation of carboxylic acids by Huns Diecker reaction, Schmidt reaction (Decarboxylation). Arndt – Eistert synthesis, Halogenation by Hell – Volhard - Zelensky reaction. Carboxylic acid Derivatives – Hydrolysis nand Amonolysis of acid halides, Acid anhydrides and esters (mechanism of ester hydrolysis by base and acid). Hydrolysis and dehydration of amides.

S3-O-2: Nitrohydrocarbons **3 h**

Preparation of Nitroalkanes. Reactivity - halogenation, reaction with HNO_2 (Nitrous acid), Nef reaction, reduction. Aromatic Nitrohydrocarbons: Preparation of Nitrobenzene by Nitration. Physical properties, chemical reactivity –Reduction of Nitrobenzenes in different media.

S3-O-3: Amines, Cyanides and Isocyanides **7 h**

Amines: classification into 1°, 2°, 3° Amines and Quarternary ammonium compounds. Preparative methods – Ammonolysis of alkyl halides, Gabriel synthesis, Hoffman's bromamide reaction (mechanism). Reduction of Amides and Schmidt reaction. Physical properties. Use of amine salts as phase transfer catalysts. Chemical Properties: a) Alkylation b) Acylation c) Carbylamine reaction d) Hinsberg separation. Reaction with Nitrous acid of 1°, 2°, 3° (Aliphatic and aromatic amines). Electophilic substitutions of Aromatic amines – Bromination and Nitration, oxidation of aryl and 3° Amines, diazotisation. Diazonium salts: Preparation with mechanism. Synthetic importance – a) Replacement of diazonium group by – OH, X (Cl)- Sandmeyer and Gatterman reaction, by fluorine (Schiemann's reaction), by iodine, CN, NO_2, H and aryl groups. Coupling Reaction of diazonium salts. i) with phenols ii) with anilines. Reduction to phenyl hydrazines.

Cyanides and isocyanides: Structure. Preparation of cyanides from a) Alkyl halides b) from amides c) from aldoximes. Preparation of isocyanides from Alkyl halides and Amines. Properties of cyanides and isocyanides, a) hydrolysis b) addition of Grignard reagent iii)

01/09/2020 01/09/2020 01/09/2020

reduction iv) oxidation.

Unit III (Physical Chemistry) 15 h (1 hr/week)

S3-P-1:Thermodynamics –I **10 h**

A brief review of - Energy, work and heat units, mechanical equivalent of heat, definition of system, surroundings. First law of thermodynamics statement- various forms mathematical expression. Thermodynamic quantities- extensive properties and intensive properties, state function and path functions. Energy as a state function and exact differential. Work of expansion and heat absorbed as path function.

Expression for work of expansion, sign convention problems on first law. Heat changes at constant pressure and heat changes at constant volume. Enthalpy. Heat capacities at constant pressure and constant volume. Derivation of Cp-Cv = R. Isothermal adiabatic processes. Reversible and irreversible processes. Reversible change and maximum work. Derivation of expression for maximum work for isothermal reversible process. Problems. Internal energy of an ideal gas. Joules experiment. Joule-Thompson coefficient. Adiabatic changes in ideal gas, derivation of equation, PV^{γ}= constant. P-V curves for isothermal and adiabatic processes. Heat of a reaction at constant volume and at constant pressure, relation between ΔH and ΔV. Variation of heat of reaction with temperature. Kirchhoff's equation and problems. Limitations of first law and need for second law. Statement of second law of thermodynamics. Cyclic process. Heat engine, Carnot's theorem, Carnot's cycle. Derivation of efficiency of heat engine. Problems. Thermodynamic scale of temperature.

S3-P-2: Thermodynamics-II **5 h**

Entropy: Definition from Carnot's cycle. Entropy as a state function. Entropy as a measure of disorder. Sign of entropy change for spontaneous and non- spontaneous processes &equilibrium processes. Entropy changes in i). Reversible isothermal process, ii). Reversible adiabatic process, iii). Phase change, iv). Reversible change of state of an ideal gas. Problems. Entropy of mixing of ideal gases. Free energy Gibb's function (G) and Helmholtz'sfunction (A) as thermodynamic quantities. Concept of maximum work and network ΔG as Criteria for spontaneity. Derivation of equation $\Delta G = \Delta H - T\Delta S$. Significance of the equation. Gibbs equations and Maxwell relations. Variation of G with P, V and T.

Unit – IV (General Chemistry) 15 h (1 hr/week)

S3-G-1 Evaluation of analytical data **4 h**

Significant figures, accuracy and precision. Errors-classification of errors- determinate and indeterminate errors, absolute and relative errors. Problems based on mean, median, range, standard deviation

S3-G-2: Carbanions-I **5 h**

Introduction, acidic nature of α-hydrogens and tautomerism in carbonyl compounds, nitro hydrocarbons, ethyl acetoacetate, diethyl malonate. Terminal alkynes. Stabilty of carbanions Reactions : Aldol reaction, Perkin reaction, Benzoin condensation, haloform reaction, conversion of smaller alkynes to higher alkynes.

S3-G-3: Phase Rule **6 h**

Statement and meaning of the terms – Phase, Component and Degrees of freedom, Gibb's Phase rule, phase equilibria of one component system – water system. Phase equilibria of two-component system – Solid-Liquid equilibria, simple eutectic –Pb-Ag system, desilverisation of lead. Solid solutions – compound with congruent melting point – Mg-Zn system and incongruent melting point – NaCl-H_2O system.

References

General reference: B.Sc II Year Chemistry : Semester III, Telugu Academy publication, Hyd

Unit- I

1. Analytical chemistry by G. L. David Krupadanam, D. Vijaya Prasad, K. Varaprasada Rao, K.L.N. Reddy and C. Sudhakar
2. Principles of Inorganic Chemistry by Puri, Sharma and Kalia Vishal Publications(1996).
3. Concise Inorganic Chemistry by J.D. Lee 3rd edn Van Nostrand Reinhold Company(1977)
4. Basic Inorganic Chemistry by F.A.Cotton, G.Wilkinson and Paul.L. Gaus 3rd edn Wiley Publishers (2001).
5. Inorganic Chemistry Principles of structure and reactivity by James E.Huhey, E.A. Keiter and R.L. Keiter 4th edn. (2006)
6. Chemistry of the elements by N.N.Greenwood and A. Earnshaw Pergamon Press(1989).
7. Inorganic Chemistry by Shriver and Atkins 3rd edn Oxford Press (1999).
8. Textbook of Inorganic Chemistry by R Gopalan(Universities Press(2012)
9. College Practical chemistry by V K Ahluwalia, Sunitha Dhingra and Adarsh Gulati Universities Press (India) Limited(2012)

Unit- II

1. Text book of organic chemistry by Soni. Sultan Chand & Sons; Twenty Ninth edition (2012)
2. General Organic chemistry by Sachin Kumar Ghosh. New Age Publishers Pvt Ltd (2008).
3. Text book of organic chemistry by Morrison and Boyd. Person(2009)
4. Text book of organic chemistry by Graham Solomons. Wiley(2015)
5. Text book of organic chemistry by Bruice Yuranis Powla. (2012)
6. Text book of organic chemistry by C N pillai CRC Press (2012)
7. Organic Chemistry by L. G. Wade Jr.
8. Organic Chemistry by M. Jones, Jr
9. Organic Chemistry by John McMurry.

Unit III

1. Principles of physical chemistry by Prutton and Marron. The MacmillanCompany; 4th Edn.(1970)
2. Text Book of Physical Chemistry by Soni and Dharmahara. Sulthan Chand and Sons.(2011)
3. Text Book of Physical Chemistry by Puri and Sharma. S. Nagin chand and Co.(2017)
4. Text Book of Physical Chemistry by K. L. Kapoor. (2012)
5. Colloidal and surface chemistry , M. Satake, Y. Hayashi, Y.Mido, S.A.Iqbal and
6. M.S.sethi, Discovery Publishing Pvt.Ltd (2014)
7. Material science by Kakani & Kakani, New Age International(2016)
8. Physical Chemistry by Ira Levine (Author) McGraw-Hill Education; 6 edition (May 9, 2008)

Unit IV

1. Text book of organic chemistry by Morrison and Boyd, Person(2009)

01/09/2020 01/09/2020

2. Text book of organic chemistry by Graham solomons, Wiley(2015)
3. Text book of organic chemistry by Sony, Sultan Chand & Sons; 29th edition (2012)
4. Text book of organic chemistry by Bruice yuranis Powla, (2012)
5. General Organic chemistry by Sachin kumar Ghosh, New Age Publishers Pvt Ltd (2008)

Laboratory Course

Paper III (Organic Synthesis) **45 h (3h/week)**

1. **Synthesis of Organic compounds:**

   Acetylation: Acetylation of salicylic acid, Benzoylation of Aniline.

   Aromatic electrophilic substitution: Nitration: Preparation of nitro benzene and m-dinitro benzene.

   Halogenation: Preparation of p-bromo acetanilide, Preparation of 2,4,6-tribromo phenol

   Oxidation: Preparation of benzoic acid from benzyl chloride.

   Esterification: Preparation of n-butyl acetate from acetic acid.

   Methylation: Preparation of - naphthyl methyl ether.

   Condensation: Preparation of benzilidine aniline and Benzaldehyde and aniline.

   Diazotisation: Azocoupling of β-Naphthol.

2. **Microwave assisted synthesis of Asprin – DEMO (demonstration only)**

01/09/2020 01/09/2020 01/09/2020

B.Sc. II yr CHEMISTRY
SEMESTER WISE SYLLABUS
SEMESTER IV
Paper-IV
Chemistry - IV

Unit-I (Inorganic Chemistry) 15h (1 h/week)

S4-I-1: Coordination Compounds –II **11 h**

Crystal field theory (CFT)- Postulates of CFT, splitting patterns of d-orbitals in ctahedral, tetrahedral, square planer with suitable examples. Crystalfield stabilization energies and its calculations for various dn configurations in octahedral complexes. High Spin Low Spin complexes. Colour and Magnetic properties of transition metal complexes. Calculations of magnetic moments spin only formula. Detection of complex formation - basic principles of various methods- change in chemical properties, solubility, colour, pH, conductivity, magnetic susceptibility.

Hard and soft acids bases (HSAB) - Classification, Pearson's concept of hardness and softness, application of HSAB principles – Stability of compounds / complexes, predicting the feasibility of reaction. Thermodynamic and kinetic stability of transition of metal complexes. Stability of metal complexes –stepwise and overall stability constant and their relationship and chelate effect determination of composition of complex by Job's method and mole ratio method.

Applications of coordination compounds: Applications of coordination compounds a) in quantitative and qualitative analysis with suitable examples b) in medicine for removal of toxic metal ions and cancer therapy c) in industry as catalysts polymerization – Ziegler Natta catalyst d) water softening.

S4-I-2:Bioinorganic Chemistry **4 h**

Essential elements, biological significance of Na, K, Mg, Ca, Fe, Co, Ni, Cu, Zn and chloride (Cl-). Toxic metal ions As, Hg & Pb Oxygen transport and storage – structure of hemoglobin, binding and transport of oxygen. Fixation of CO2 in photosynthesis- overview of light and dark reactions in photosynthesis. Structure of chlorophyll and coordination of magnesium. Electron transport in light reactions from water to NADP+ (Z – scheme).

Semester-IV

Unit - II (Organic Chemistry) 15h(1 hr/week)

S4-O-1: Carbohydrates **6 h**

Introduction: Classification and nomenclature. Monosaccharides: All discussion to be confined to (+) glucose as an example of aldo hexoses and (-) fructose as example of ketohexoses. Chemical properties and structural elucidation: Evidences for straight chain pentahydroxy aldehyde structure. Number of optically active, isomers possible for the structure, configuration

of glucose based on D-glyceraldehyde as primary standard (No proof for configuration is required). Evidence for cyclic structure of glucose (Pyranose structure, anomeric Carbon and anomers). Proof for the ring size (methylation, hydrolysis and oxidation reactions). (Haworth formula and chair conformational formula). Structure of fructose: Evidence of 2 – ketohexose structure. Same osazone formation from glucose and fructose, Hydrogen bonding in osazones, cyclic structure for fructose (Furanose structure,Haworth formula).

Inter Conversion of Monosaccharides: : Arabinose to D-glucose, D- mannose (kiliani – Fischer method). Epimers, Epimerisation- Lobry de bruyn van Ekenstein rearrangement. D-glucose to D-arabinose by Ruff's degradation. Aldohexose(+) (glucose) to ketohexose (–) (fructose) and Ketohexose(Fructose) to aldohexose (Glucose).

S4-O-2: Amino acids and proteins **5 h**

Classification. Methods of synthesis: General methods of synthesis of alpha amino acids (specific examples – Glycine, Alanine, Valine and Leucine) by following methods: a) From halogenated Carboxylic acid b)Malonic ester synthesis c) strecker's synthesis. Physical properties: Optical activity of naturally occurring amino acids. Zwitter ion structure – salt like character, definition of isoelectric point. Chemical properties: General reactions due to amino and carboxyl groups – Lactams from gamma and delta amino acids by heating peptide bond (amide linkage). Structure and nomenclature of peptides. Primary structure of proteins, di peptide synthesis

S4-O-3: Heterocyclic Compounds **4 h**

Introduction and definition: 5 membered ring compounds with one hetero atom Ex. Furan. Thiophene and pyrrole. Importance of ring systems –Numbering. Aromatic character

Resonance structures: Explanation of feebly acidic character of pyrrole, electrophillic substitution, Halogenation, Nitration and Sulphonation. Reactivity of furan as 1,3-diene, Diels Alder reactions (one example). Sulphonation of thiophene purification of Benzene obtained from coal tar). Preparation of furan, Pyrrole and thiophene Paul-Knorr synthesis. Structure of pyridine, Basicity – Aromaticity – Comparison with pyrrole – preparation by Hantsch method and properties – Reactivity towards Nucleophilic substitution reaction – chichibabin reaction.

Unit III (Physical Chemistry) 15h (1 hr/week)

S4-P-1: Chemical Kinetics **11 h**

Introduction to chemical kinetics, rate of reaction, variation of concentration with time, rate laws and rate constant. Specific reaction rate. Factors influencing reaction rates: effect of concentration of reactants, effect of temperature, effect of pressure, effect of reaction medium, effect of radiation, effect of catalyst with simple examples. Order of a reaction.

First order reaction, derivation of equation for rate constant. Characteristics of first order reaction. Units for rate constant. Half- life period, graph of first order reaction, Examples- Decomposition of H_2O_2 and decomposition of oxalic acid, Problems.

Pseudo first order reaction, Hydrolysis of methyl acetate, inversion of cane sugar, problems. Second order reaction, derivation of expression for second order rate constant, examples-

Saponification of ester, $2O_3 \rightarrow 3O_2$, $C_2H_4+H_2 \rightarrow C_2H_6$. Characteristics of second order reaction, units for rate constants, half- life period and second order plots. Problems

4 h

S4-P-2: Photochemistry

Introduction to photochemical reactions, Difference between thermal and photochemical reactions, Laws of photo chemistry- Grotthus Draper law, Stark–Einstein's Law of photochemical equivalence. Quantum yield. Examples of photo chemical reactions with different quantum yields. Photo chemical combinations of H_2–$Cl_2$and H_2–Br_2 reactions, reasons for the high and low quantum yield. Problems based on quantum efficiency. Consequences of light absorption. Singlet and triplet states. Jablonski diagram. Explanation of internal conversion, inter- system crossing, phosphorescence, fluorescence.

Unit III (General Chemistry) — 15h (1 hr/week)

4 h

S4-G-1: Theories of bonding in metals

Valence bond theory, Explanation of metallic properties and its limitations, Free electron theory, thermal and electrical conductivity of metals, limitations, Band theory, formation of bands, explanation of conductors, semiconductors n-type and p-type, extrinsic & intrinsic semiconductors, and insulators.

5 h

S4-G-2: Carbanions-II

Mannich reaction , Michael addition and Knoevengeal condensation Synthetic applications of Aceto acetic ester. Acid hydrolysis and ketonic hydrolysis: Preparation of ketones, monocarboxylic acids and dicarboxylic acids Malonic ester– synthetic applications. Preparation of (i) substituted mono carboxylic acids and (ii) substituted dicarboxylic acids.

6 h

S4-G-3: Colloids & Surface Chemistry

Definition of colloids. Classification of colloids. Solids in liquids (sols): preparations and properties – Kinetic, Optical and Electrical stability of colloids. Protective action. Hardy–Schultz law, Gold number. Liquids in liquids (emulsions): Types of emulsions, preparation and emulsifier. Liquids in solids(gels): Classification, preparations and properties, General applications of colloids.

Adsorption: Types of adsorption. Factors influencing adsorption. Freundlich adsorption isotherm. Langmuir theory of unilayer adsorption isotherm. Applications.

References

General reference: B.Sc II Year Chemistry : Semester IV, Telugu Academy publication, Hyd

Unit- I

1. Principles of Inorganic Chemistry by Puri, Sharma and Kalia Vishal Publications (1996).
2. Concise Inorganic Chemistry by J.D. Lee 3rd edn. Van Nostrand ReinholdCompany(1977)
3. Basic Inorganic Chemistry by F.A.Cotton, G.Wilkinson and Paul.L. Gaus 3rd edn Wiley Publishers (2001).
4. Inorganic Chemistry Principles of structure and reactivity by James E.Huhey, E.A. Keiter and R.L. Keiter 4th edn. (2006)
5. Chemistry of the elements by N.N.Greenwood and A. Earnshaw Pergamon Press(1989).
6. Inorganic Chemistry by Shriver and Atkins 3rd edn Oxford Press (1999).
7. Textbook of Inorganic Chemistry by R Gopalan, Universities Press,(2012)

Unit- II

1. Text book of organic chemistry by Soni. Sultan Chand & Sons; Twenty Ninthedition (2012)
2. General Organic chemistry by Sachin Kumar Ghosh. New Age Publishers Pvt Ltd (2008)
3. Text book of organic chemistry by Morrison and Boyd. Person(2009)
4. Text book of organic chemistry by Graham Solomons. Wiley(2015)
5. Text book of organic chemistry by Bruice Yuranis Powla. **(2012)**
6. Text book of organic chemistry by C N pillai CRC Press (2012)
8. Organic Chemistry by L. G. Wade Jr.
9. Organic Chemistry by M. Jones, Jr
10. Organic Chemistry by John McMurry.

Unit III

1. Principles of physical chemistry by Prutton and Marron. The MacmillanCompany; 4th edn. (1970)
2. Text Book of Physical Chemistry by Soni and Dharmahara. Sulthan Chand &sons.(2011)
3. Text Book of Physical Chemistry by Puri and Sharma. S. Nagin chand and Co.(2017)
4. Text Book of Physical Chemistry by K. L. Kapoor. (2012)
5. Physical Chemistry through problems by S.K. Dogra. (2015)
6. Text Book of Physical Chemistry by R.P. Verma.
7. Elements of Physical Chemistry byLewis Glasstone. Macmillan (1966)
8. Industrial Electrochemistry, D. Pletcher, Chapman & Hall, London, 1990

Unit IV

1. Principles of Inorganic Chemistry by Puri, Sharma and Kalia Vishal Publications(1996).
2. Concise Inorganic Chemistry by J.D. Lee 3rd edn. Van Nostrand Reinhold Company (1977)
3. Basic Inorganic Chemistry by F.A.Cotton, G.Wilkinson and Paul.L. Gaus 3rd edn Wiley Publishers (2001).
4. Inorganic Chemistry Principles of structure and reactivity by James E.Huhey, E.A. Keiter and R.L. Keiter 4th edn. (2006)
5. Text book of organic chemistry by Morrison and Boyd, Person (2009)
6. Text book of organic chemistry by Graham solomons, Wiley (2015)
7. Fundamentals of organic synthesis and retrosynthetic analysis by Ratna Kumar Kar, CBA,(2014)
8. Organic synthesis by Dr. Jagadamba Singh and Dr. L.D.S. Yadav, Pragati Prakashan, 2010
7. Stereochemistry of organic compounds by D. Nasipuri, New Academic Science Limited, 2012
8. Organic chemistry by Clayden, Greeves, Warren and Wothers, Oxford University Press, 2001
9. Fundamentals of Asymmetric Synthesis by G. L. David Krupadanam, Universities, Press 2014

Laboratory Course

Paper IV-

Qualitative Analysis of Organic Compounds: 45hrs (3 h/week)

Qualitative analysis: Identification of organic compounds through the functional group analysis - ignition test, determination of melting points/boiling points, solubility test, functional group tests and preparation of suitable derivatives of the following: Carboxylic acids, phenols, amines, urea, thiourea, carbohydrates, aldehydes, ketones, amides, nitro hydrocarbons, ester and naphthalene.

01/09/2020 01/09/2020 01/09/2020

B.Sc., III YEAR CHEMISTRY

SEMESTER-V

DSE-A: Chemistry Paper–V

(*Spectroscopy & Chromatography*)

(04 credits) **60 Hrs (04 Hrs/week)**

UNIT-I: Molecular Spectroscopy (15 Hrs)

***S5-A-E-I*:** Introduction to electromagnetic radiation, interaction of electromagnetic radiations with molecules, various types of molecular spectra.

Rotational spectroscopy (Microwave spectroscopy)

Rotational axis, moment of inertia, classification of molecules (based on moment of inertia), rotational energies, selection rules, determination of bond length of rigid diatomic molecules eg. HCl.

Infra red spectroscopy

Energy levels of simple harmonic oscillator, molecular vibration spectrum, selection rules. Determination of force constant (Problems). Qualitative relation of force constant to bond energies. Anharmonic motion of real molecules and energy levels. Modes of vibrations in polyatomic molecules. Characteristic absorption bands of various functional groups. Finger print nature of infrared spectrum

Electronic spectroscopy

Bonding and anti-bonding molecular orbitals, electronic energy levels of molecules (σ, π, n), types of electronic transitions: σ-σ^*, n-σ^*, n-π^*, π-π^* with suitable examples. Selection rules, Terminology of chromophore, auxochrome, bathochromic and hypsochromic shifts. Absorption of characteristics of chromophones: diene, enone and aromatic chromophores. Representation of UV-Visible spectra. General features of absorption-spectroscopy transmittance, absorbance, and molar absorptivity. Beer-Lambert's law and its limitations.

UNIT-II: NMR & Mass Spectroscopy (15 Hrs)

***S5-A-E-II*: Proton Magnetic Resonance Spectroscopy**

Principles of nuclear magnetic resonance, equivalent and non-equivalent protons, position of signals. Chemical shift, factors affecting chemical shifts, NMR splitting of signals – spin-spin coupling, representation of proton NMR spectrum – Integrations. ^{1}H NMR spectrum of – ethyl bromide, acetaldehyde, 1, 1, 2- tribromo ethane, ethyl acetate and acetophenone.

Mass Spectrometry

Electron Impact Mass: Basic principles, Nitrogen rule, types of ions: Molecular ion, fragment ion and isotopic ions, representation of mass spectrum, types of peaks (molecular ion, fragment and isotopic ion peaks). Determination of molecular formula. Mass spectrum of ethyl chloride, ethyl bromide and acetophenone.

UNIT-III: Separation techniques-I (15 Hrs)

***S5-A-E-III*: Solvent Extraction-** Principle, Methods of extraction: Batch extraction, continuous extraction and counter current extraction. Application– Determination of Iron (III).

Chromatography: Classification of chromatographic methods, principles of differential migration, adsorption phenomenon, nature of adsorbents, solvent systems.

Thin layer Chromatography (TLC): Advantages, preparation of plates, solid phase and mobile phase used in TLC, eluotopic series, development of the chromatogram, Detection of the spots, factors effecting R_f values and applications of TLC.

Paper Chromatography: Principle, choice of paper and solvent systems, development of chromatogram – ascending, descending, radial and two dimensional chromatography, detection of spots, and applications of paper chromatography.

UNIT-IV: Separation techniques-II (15 Hrs)

***S5-A-E-IV*: Column Chromatography-** Principle, Types of stationary phases, Column packing – Wet packing technique, Dry packing technique. Selection criteria of mobile phase solvents for eluting polar, non-polar compounds and its applications.

Ion exchange chromatography: Principle, cation and anion exchange resins, its application in separation of ions, de-ionized water.

Gas Chromatography: Principle, theory and instrumentation (Block Diagram), Types of stationary phases and carrier gases (mobile phase), application of GC.

High performance liquid chromatography: Principle, theory and instrumentation, stationary phases and mobile phases. Applications of HPLC, analysis of Paracetamol.

Recommended Text Books and Reference Books:

1. Fundamentals of Molecular Spectroscopy, C.N. Ban well & Mc Cash.
2. Organic spectroscopy, William Kemp, Palgrave Macmillan; 2nd Revised edition.
3. Spectroscopy, B K Sharma Krishna Prakashan Media,1981.
4. Elements of Organic spectroscopy, YR Sharma.
5. Applications of Absorption spectroscopy of Organic compounds (English paper back, Dyer R.John)
6. Organic chemistry, Morrison and Boyd, Pearson Publications.
7. Introduction to Spectroscopy by Donald Pavia, Gary Lampman and George Kriz. Saunders College Division, 2001.
8. Chemistry text book for B.Sc., published by Telugu academy, Govt. of Telangana.
9. Analytical Chemistry by David Krupadanam, Universities Press (India) Limited.
10. Principles of Instrumental Analysis, D.A.Skoog, F.J.Holler & T.A. Nieman, Cengage Learning India Ed.
11. Fundamentals of Analytical Chemistry 6th Edn, D.A.Skoog, D.M. West, F.J.Holler, Saunders College Publishing, Fort worth (1992).
12. Instrumental Methods of Analysis, 7th Ed. Willard, H.H., Merritt, L.L., Dean, J. & Settle, F.A. Wordsworth Publishing Co.Ltd., Belmont, California, USA, 1988.
13. A Text Book of Quantitative Inorganic Analysis 7th Ed., Vogel, A.I. Prentice Hall.
14. Analytical Chemistry 7 th Edition by Gary D.Christian (2004)
15. Separation Methods, M.N Sastry, Himalaya Publication (2004)

B.Sc., III YEAR CHEMISTRY

SEMESTER-V

DSE-B: Chemistry Paper–V

(*Metallurgy, Dyes and Catalysis*)

(04 credits) **60 Hrs (04 Hrs/week)**

Unit I: General Principles of Metallurgy and Production of Non Ferrous Metals (15 Hrs)

***S5-E-B-I*: Pyrometallurgy:** Drying and calcination, roasting, smelting, products of smelting,
Hydrometallurgy: Leaching methods, leaching agents, leaching of metals, oxides and sulphides. Separation of liquid and solid phases and processing of aqueous solutions
Electrometallurgy: Electrolysis, Refining electrolysis, electrolysis from aqueous solutions, fused-salt electrolysis
Refining processes: Chemical and physical refining processes
Production of selected non-ferrous metals (Copper, Nickel, Zinc): Properties, raw materials, production (flow charts presentations and chemical reactions involved) and uses.

Unit II: Natural and Synthetic Dyes (15 Hrs)

***S5-E-B-II*:** Definition and Classification of dyes - Natural dyes, Synthetic dyes: based on chemical constitution of dyes; Chemical nature of dyes; Application of dyes.
Structures of Natural dyes: Indigo, Tyrian purple, Alizarine, Indigotin.
Structures of Synthetic dyes: Nitro dyes, Nitroso dyes, Azo dyes (Mono azo dye, Bis azo dyes) Diaryl methane dyes, Triaryl methane dyes, Xanthenes dyes, Phenolphthalein, Fluoroseine, Acridine dyes.
Synthesis of dyes: Mono azo dye, Bis azo dyes (Congo red), Auromine O, Malachite Green, Crystal Violet, Rhodamine B, Acridine Yellow, Indigotin. Binding of dyes to fabric. Applications of dyes.

Unit III: Catalysis-I (15 Hrs)

***S5-E-B-III*: Homogeneous and heterogeneous catalysis** - Definition of a catalyst and catalysis. Comparison of homogeneous and heterogeneous catalysis with specific examples. General characteristics of catalytic reactions.
Acid-base catalysis- Examples of acid and base catalysed reactions, hydrolysis of esters. Kinetics of acid catalysed reactions. Specific acid and general acid catalysis, Kinetics of base catalysed reactions. Specific base and general base catalysis. Examples- Aldol condensation and decomposition of nitramide, base catalysed conversion of acetone to di acetone alcohol, Mutarotation of Glucose. Effect of pH on reaction rate of acid and base catalysed reactions.
Phase transfer catalysis: Principle of phase transfer catalysis, classification of phase transfer catalysts. Factors influencing the rate of PTC reactions.

Unit IV: Catalysis-II (15 Hrs)

***S5-E-B-IV*: Enzyme catalysis-** Characteristics of enzyme catalysis, Examples: (i) Invertase in inversion of cane sugar (ii) Maltase in conversion of maltose to glucose (iii) Urease in decomposition of urea (iv) Zymase in conversion of glucose to ethanol (v) working of carbonic anhydrase and (vi) Mechanism of oxidation ethanol by alcohol dehydrogenase. Factors affecting enzyme catalysis. Effect of temperature, pH, concentration and effect of inhibitor on enzyme catalysed reactions, Catalytic efficiency.

Kinetics of enzyme catalysed reactions: Michaelis-Menton Equation. Mechanism of enzyme catalysed reactions. Significance of Michaelis constant (Km) and maximum velocity (Vmax), Lineweaver-Burk plot. Types of enzyme inhibitors.

Recommended Text Books and Reference Books:

1. Industrial Chemistry B.K.Sharma
2. Engineering Chemistry, Jain and Jain
3. Industrial Chemistry, E. Stocchi, Vol-I, Ellis Horwood Ltd. UK.
4. Handbook of Industrial Chemistry, J. A. Kent: Riegel's, CBS Publishers, New Delhi.
5. Theory of production of non-ferrous metals and alloys Study. Kateřina Skotnicová, Monika Losertová, Miroslav Kursa.
6. The Chemistry of Synthetic Dyes, Volume 4, K.Venkataraman, Elsevier.
7. Organic Chemistry Vol-I by I.L. Finar.
8. Organic Chemistry by Jennice, Gorzinski Smith.
9. Natural Dyes: Sources, Chemistry, Application and Sustainability Issues by Sujata Saxena and A. S. M. Raja.
10. Physical Chemistry by Atkins and De Paula, 8 th Edn.
11. Physical Chemistry by Puri, Sharma and Pattania, 2017.
12. Kinetics and mechanism of chemical transformations by Rajarajm and Kuriacose, Published by Macmillan India Ltd.
13. Text book of Physical Chemistry by K.L. Kapoor Macmillan, 1999.
14. Catalysis by J.C. Kuriacose, Macmillan Publishers India Limited, 1980.
15. Phase Transfer Catalysis, Fundamentals, Applications and Industrial perspectives, C.M.Stark, C.Liotta & M.Halpern, Academic Press.
16. Phase Transfer Catalysis, E.V.Dehmlow & S.S. Dehmlow, Verlag Chemie,Weinheim.

B.Sc., III YEAR CHEMISTRY

SEMESTER-V

LABORATORY COURSE

Paper –V*: Experiments in Physical Chemistry-I*

(01 Credit) **45 Hrs (03 Hrs/week)**

1. **Distribution law**
   a) Determination of molecular status and partition coefficient of benzoic acid in Toluene and water.
   b) Determination of distribution coefficient of acetic acid between n-butanol and water.
2. **Electrochemistry**
   a) Determination of cell constant of conductivity cell.
   b) Verification of Ostwald's dilution law- Determination of dissociation constant (K_a) of acetic acid by conductivity measurements.
3. **Colorimetry**
   a) Verification of Beer's - Lamberts law for $KMnO_4$
   b) Determination of the concentration of the given $KMnO_4$ solution.
4. **Adsorption**
   a) Adsorption of acetic acid on animal charcoal- Verification of Freundlich adsorption isotherm.
5. **Physical constants**
   a) Surface tension and b) Viscosity of liquids. (Demonstration Experiment)

Reference books:

1. Senior Practical Physical Chemistry, B. D Khosla, V. C. Garg , Adarsh Gulati Published by R. Chand & Co.
2. Practical Physical Chemistry, B.Vishwanathan and P.S. Raghavan. Viva Books.
3. Practicals in Physical Chemistry by P.S. Sindhu ISBN-10: 1-4039-2916-5/1403929165 ISBN-13: 978-1-4039-2916-7/9781403929167.

B.Sc., III YEAR CHEMISTRY

SEMESTER-VI

DSE-A: Chemistry Paper–VI

(Medicinal Chemistry)

(04 credits) **60 Hrs (04 Hrs/week)**

Unit- I: Introduction and Terminology (15 Hrs)

***S6-E-A-I*: Diseases**: Common diseases, infective diseases–insect borne, air-borne, water-borne and hereditary diseases.

Terminology in Medicinal Chemistry: Drug, Active Pharmaceutical Ingredient (ADI), Pharmaceuticals, Pharmacology, Pharmacophore, Pharmacodynamics, Pharmacokinetics, metabolites, anti metabolites and therapeutic index.

Drugs: Nomenclature: Chemical name, Generic name and Trade names with examples; Classification: Classification based on structures and therapeutic activity with examples.

ADMET: a) Absorption: Definition, absorption of drugs across the membrane – active and passive absorption, routes of administration of drugs. b) Distribution: definition and effect of plasma protein binding. c) Metabolism: definition, phase I and phase II reactions. d) Elimination: definition and renal elimination. Toxicity.

Unit-II: Enzymes and Receptors (15 Hrs)

***S6-E-A-II*: Enzymes: Introduction**, Mechanism and factors affecting enzyme action, Specificity of enzyme action (including stereo specificity), Enzyme inhibitors and their importance. Types of inhibition - reversible, irreversible and their subtypes with examples.

Receptors: Introduction, Drug action-receptor theory, Mechanism of drug action, concept of agonists and antagonists with examples. Drug receptor interactions involved in drug receptor complex. Binding role of -OH group, $-NH_2$ group, quaternary ammonium salts and double bond. Structure – activity relationships of drug molecules, explanation with sulfonamides.

Unit- III: Synthesis and Therapeutic Activity of Drugs (15 Hrs)

***S6-E-A-III*:** Introduction, synthesis and therapeutic activity of:

Chemotherapeutics: Sulphanilamide, dapsone, Penicillin-G (semi synthesis), Chloroquin, Isoniazid, Cisplatin and AZT.

Drugs to treat metabolic disorders: **Anti diabetic** - Tolbutamide; Anti-inflammatory – Ibuprofen; Cardiovascular- Glyceryl trinitrate; Antipyretic (paracetamol, aspirin) and Antacid- Omeprazole.

Drugs acting on nervous system: Anesthetics-definition, Classification-local and general. Volatile-Nitrous oxide, chloroform uses and disadvantages. Local anesthetics – benzocaine.

Unit- IV: Molecular Messengers and Vitamins and Micronutrients (15 Hrs)

***S6-E-A-IV*: Molecular Messengers:** Introduction to hormones and neurotransmitters, Thyroid hormones, Antithyroid drug-Carbimazol. Adrenaline: Adrenergic drugs- salbutamol, atenelol. Serotonin: SSRIs- fluoxetine. Dopamine: Antiparkinson drug- Levodopa .

Vitamins and Micronutrients: Introduction, Vitamin sources, Deficiency disorders and remedy of Vitamins A,B, C, D, E, K and micronutrients – Na, K, Ca, Cu, Zn and I .

Recommended Text Books and Reference Books:

1. Introduction to Medicinal Chemistry, G.L. Patrick, Oxford University Press, New York. 2013.
2. Medicinal Chemistry, Thomas Nogrady, Oxford Univ. Press, New York.2005.
3. Foye's Principles of Medicinal Chemistry, David William and Thomas Lemke, Lippincott Williams & Wilkins, 2008.
4. Medicinal Chemistry, Ashutosh Kar, New Age International, 2005.
5. Synthetic Drugs, O.D.Tyagi & M.Yadav, Anmol Publications,1998.
6. Medicinal Chemistry, Alka L. Gupta, Pragati Prakashan.
7. Drugs, G. L. David Krupadanam, D.Vijaya Prasad, K.Varaprasad Rao, K. L. N. Reddy, C. Sudhakar, Universities Press (India) Ltd. 2012.

B.Sc., III YEAR CHEMISTRY

SEMESTER-VI

DSE-B: Chemistry Paper–VI

(Agricultural & Fuel Chemistry)

(04 credits) **60 Hrs (04 Hrs/week)**

Unit I: Pesticides (15 Hrs)

***S6-E-B-I*: Introduction**, Definition, classification of pesticides based on use (target). Toxicity and chemical structure with examples. Adverse effects of pesticides and its impact on environmental pollution.

Synthesis, manufacture and uses of representative pesticides: Organochlorines (Cypermethrin); Organophosphates (Parathion); Carbamates (carbaryl); Quinones (Chloranil), Anilides (Alachlor).

Pesticide formulations: Dusts, Granules, Wettable powders, Emulsions and Aerosols.

Biopestcides : Introduction: Potential pesticidal plants of India, Role of Neem in plant protection-constituents, Azadirachtin and its role in pest control, Structure and mode of action of Pyrethrins (pyrethrin-1) and Pyrethroids (permethrin) and nicotinoids (Imidacloprid).

Unit II: Fertilizers (15Hrs)

***S6-E-B-II*: Introduction:** (need of fertilizers), functions of essential plant nutrients (N, P, K), Classification formula and uses of fertilizers:

Nitrogenous fertilizers: Ammonium nitrate, Urea, Calcium Cyanamide, Calcium Ammonium Nitrate, Sodium Nitrate, Ammonium Chloride and their uses.

Phosphate fertilizers: Normal super phosphate, Triple Super Phosphate, Ammonium Phosphate and their uses.

Potassium fertilizers: Potassium chloride, potassium nitrate, potassium sulphate and uses.

Complex fertilizers: Diaammonium Phosphate and mixed fertilizers their uses. Manufacture of urea and Super phosphate of lime and their reactions in the soil.

Biofertilizers: Introduction, definition, classification, Rhizobium, Azatobactor, Azospirillium, Azolla, Blue Green Algae, Vermicomposting and uses.

Organic farming: The principal methods, crop rotation, green manures and compost, biological pest control, and mechanical cultivation and uses.

Unit III: Energy Sources and Coal (15Hrs)

***S6-E-B-III*:** Review of energy sources (renewable and non-renewable). Classification of fuels and their calorific value.

Coal: Uses of coal (fuel and nonfuel) in various industries, its composition, carbonization of coal. Coal gas, producer gas and water gas—composition and uses. Fractionation of coal tar, uses of coal tar based chemicals, requisites of a good metallurgical coke, Coal gasification (Hydro gasification and Catalytic gasification), Coal liquefaction and Solvent Refining.

Unit IV: Petroleum and its products, Petrochemicals and non petroleum fuels (15Hrs)

***S6-E-B-IV*: Petroleum and its products**

Petroleum: Origin, Composition of crude petroleum and classification. Properties-flash point and its determination, Knocking and anti-knocking compounds; Octane number and Cetane number. Distillation of crude petroleum, Fractional Distillation - Principle and process, refining, fractions and uses. Cracking -Thermal and catalytic cracking, Reforming.

Petroleum products – Petrol, Diesel, LPG, Kerosene, Tar and their applications.

Petrochemicals-Vinyl acetate, Propylene oxide, Isoprene and their uses.

Lubricants: Classification of lubricants- Solid, semi solid and liquids; Properties (viscosity, flash point, fire point, cloud point, pour point) and their determination. Functions of Lubricants, Mechanism of lubrication.

Non-Petroleum fuels: Natural Gas- CNG, LNG, clean Fuels- H_2 gas, ethanol, Fuel from waste- bio gas, Fuel from bio mass-Bio ethanol, biodiesel, and Synthetic fuels- syngas based.

Recommended Text Books and Reference Books:

1. Chemistry of pesticides, N. N. Melnikov, Springer-Verlag- Technology & Engineering (2012).
2. Pesticide Synthesis, Thomas A. Unger, Elsevier, (2000).
3. Pesticides, R. Cremlyn, John Wiley, 1980.
4. Manures and Fertilisers, K. Kolay, Published by Atlantic (2007).
5. Sharma, B.K. & Gaur, H. Industrial Chemistry, Goel Publishing House, Meerut (1996).
6. A Text Book of Engineering Chemistry Paperback-2017 by Shashi Chawla.
7. Industrial Chemistry, Vol-I, Stocchi.E, Ellis Horwood Ltd. UK (1990).
8. Jain, P.C. & Jain, M. Engineering Chemistry, Dhanpat Rai & Sons, Delhi.
9. Engineering Chemistry by Shashi Chawla, Dhanpat Rai & Sons, Delhi.

B.Sc., III YEAR CHEMISTRY

SEMESTER-VI

LABORATORY COURSE

Paper –V: *Experiments in Physical Chemistry-II*

(01 Credit) **45 Hrs (03 Hrs/week)**

1. **Kinetics**
   a) Determination of specific reaction rate of the hydrolysis of methyl acetate catalyzed by hydrogen ion at room temperature.
   b) Determination rate of decomposition of hydrogen peroxide catalyzed by $FeCl_3$.
2. **Electrochemistry**

A. Potentiometry:

a) Determination of redox potential of Fe^{2+}/Fe^{3+} by potentiometric titration of ferrous ammonium sulphate vs potassium dichromate.

b) Precipitation titration of KCl vs $AgNO_3$ –Determination of given concentration of silver nitrate.

B. pH metry:

a) pH metric titration of strong acid (HCl) vs strong base- Determination of the concentration of given acid.

b) pH metric titration of strong acid (acetic acid) with strong base (NaOH)- Determination of acid dissociation constant (K_a) of weak acid.

3. **Conductometry:**
   a) Determination of overall order: Saponification of ethyl acetate with NaOH by conductance measurement

Reference books:

1. Senior practical physical chemistry, B.D.Khosla, V.C.Garg, Adarsh Guati.
2. Advanced Practical Physical chemistry, J.B.Yadav.
3. Practical Physical chemistry, B.Vishvanathan and P.S.Raghavan.
4. Practical Physical chemistry, P.S. Sindhu.

Action plan and annual plan

II.TeachingLearning&Evaluation

- Teaching Diary & Lecture Plan
- Annual Academic Plan
- Course Material and Question Papers
- Class Room Seminars
- Quiz competition
- Teaching Models and Aids
- Remedial Coaching
- Paper Clippings
- Study Projects
- Comparative Studies
- Extension Lectures
- Evaluation
- Additional Curriculum

TeachingDiary&LecturePlan:

- These are maintained by every member of the department.
- Periodical checking up these records is taken up once in a weekby the incharge of the Department of Chemistry.Once in amonth by the principal.
- If there is any non coverage of syllabus due toun presented holidays, Remedial measures are suggested.

AnnualAcademicPlan:

- It is designed as per Almanac.

Study materials supplied to students:

- Telugu Academy books supplied
- Running Notes

Question Paper:

- The question papers of the previous years are supplied to the students or The question papers file is circulated among the students and allowed to note down the same.

ClassRoomSeminars:

- The bright students are identified and the topic of their choice from the curriculum is allotted and allowed to present the seminar under the supervision of the lecturer concerned.

Quiz Competitions:

- Quiz on Chemistry subject was conducted by selecting bright students (16Members) and divided into four groups.
- Quiz Competition conducted for year Students.

TeachingModels:

- At present in teaching learning process, faculty follows Lecture method, demonstration methods and also ICT methods.

Remedial Coaching:

- After publication of the results, in the beginning of the academic year the student's performance is assessed and students are categorized in to three types.

a) Slow learners (failed candidates of B.Sc.ISem.paper)
b) Medium learners–secured below 50%marks.
c) Advanced learners-achieved 60% and above

Assignments are given to slow and medium learners and also conducted study hours advanced learners are selected and engaged in doing study project work.

On the other hand for final year student who failed in second year and in first year, the concentration is bestowed in teaching certain important topics and also conducted remedial coaching in zero hours.

.

The details of remedial coaching are recorded and tabulated in the prescribed Perfo ma.

Paper Clippings:

- The news item pertaining to the subject as well as other subjects according to the importance of the matter appeared in the daily news papers and other magazines are procured and displayed on the departmental notice board.

EVALUATION:

The methods adopted for the evaluation of the students are:

a) Conducting Internal exams

b) Conducting Assignments

c) Student Seminars

d) Quizcompetition

e) Group Discussion

f) University examinations(externalexams)

List of Study Material Supplied To Students

Sl. No.	CLASS	PAPER	NAMEOFTHETOPIC
01	B.Sc. IYear	ISEM	Chemical Bonding
02	B.Sc. IYear	ISEM	P-Block Elements
03	B.Sc. IYear	ISEM	Acyclic Hydrocarbons-alkanes,alkenes,alkynes
04	B.Sc. IYear	ISEM	.Isomerism
05	B.Sc. IYear	ISEM	Structural Theory in Organic Chemistry
06	B.Sc. IYear	IISEM	**p-block Elements-II**
07	B.Sc. IYear	IISEM	Chemistry of Zero group elements
08	B.Sc. IYear	IISEM	**.Aromatic Hydrocarbons**
09	B.Sc.IIIYear	IISEM	Chemistry of d-block elements
10	B.Sc.IIIYear	VSEM	Coordination compounds

LIST OF CLASS ROOM SEMINARS ORGANISED DURING 2019-2020

Sl. No.	NAMEOFTHE STUDENT	CLASS	TOPICOFTHESEMINAR
1	Ch.Supriya	MPC 3rd year	Beers lambers law
2	K.krishnaveni	BZC 2nd year	Stability of carbonions
3	K.Chandana	MPC 3rd year	Chromatography
4	B.Lavanya	BZC 2nd year	Kirchoffs equation

LIST OF EXTENSION LECTURES ORGANISED BY THE DEPARTMENT

Sl No.	NAMEOFTHEINVITEE	DESIGNATIONAND ADDRESS	DATE	TOPICDELIVERED	No. ofStudents Participated	VENUE
1	P.Swamy	AsstProfof Chemistry GDC Bendara	08/11/2023	ISOMERISM-CLASSIFICATION	**20**	TTWRDC WASIFABAD

BIO-DATA OFTEACHINGSTAFF:

S No	Name of the Faculty	Designation	Qualifications	Regular/ Contract	Specialization	Length of service
1	G.USHARANI	HOD	M.Sc.B.Ed.	GUEST	ORGANIC CHEMISTRY	18 years

2	G.SAISUMA	Lecturer in Chemistry	M.Sc. B.ED	GUEST	INORGANIC Chemistry	2 Years
3	A.SNEHA	Lecturer in Chemistry	M.Sc. B.ED	GUEST	Physical chemistry	2 Years

INDIVIDUALPROFILEOFTHEFACULTYMEMBER

1. Name : G.USHARANI
2. Father Name :G . A N A N D
3. Date of birth :31/05/1984
4. Qualification : M.Sc (Chem.), B.Ed.
5. Designation :Lecturer in chemistry
6. Place of work :TTWRADC W ASIFABAD
7. Date of appointment : 17/10/2019
8. Experience : 17 years
9. Date of working in the present College:04/12/2023
10. Address :Q.NO 54,24-DIP area, Bellempalli

,Dist.Manchirial,MobileNo;6304177738,7842635668

Declaration

I declare that the particulars furnished above are true to the best of my knowledge and belief. I am liable for the authenticity of each and every bit of this information and indemnify the college administration that I take full responsibility in this regard.

Signature

Date: 04/12/2023 (G.USHARANI)

INDIVIDUALPROFILEOFTHEFACULTYMEMBER

1. Name :G.SAISUMA
2. Father Name : G.CHAINDRAIAH
3. Date of birth :31/08/1999
4. Qualification : M.Sc.(CHEM),B.Ed.
5. Designation :Lecturer in chemistry
6. Place of work :TTWRADC W ASIFABAD
7. Date of appointment : 22/02/2022
8. Experience : 2 years
9. Date of working in the presentCollege:04/12/2023
10. Address: 9-156, Shivajinagar, Utnoor, Dist: Adilabad.

    Mobile number : 9346548792

Declaration

I declare that the particulars furnished above are true to the best of my knowledge and belief. I am liable for the authenticity of each and every bit of this information and indemnify the college administration that I take full responsibility in this regard.

Signature

Date:04/12/2023 (G.SAISUMA)

INDIVIDUALPROFILEOFTHEFACULTYMEMBER

1. Name in Full (with Surname) : ALLENKI SNEHA
2. Designation : LECTURER IN CHEMISTRY
3. Father'sname : ALLENKI RAJU
4. Mother'sname : ALLENKI JYOTHI
5. Date of Birth : 25/06/1997
6. Qualifications (copiesofcertificates) : MSc&B.ED
7. Caste : OC
8. Date of first Appointment : 01/11/2023
9. Mode of Appointment : DEMO THROUGH
10. Teaching Experience e(enclose DL Appointment Order):2YEARS
11. Date of working in the present college :04-12-2023
12. Books Published :(Title Page, concerned pages, Last Page, ISBN/ISSNNo.)-Nil

E-mail:allenkisneha4moto@gmail.com

14. Contact No. : 9959264229
15. Residentia lAddress:H.NO:1-15-191,Balajinagar colony,sirpur kaghaznagar,Asifabad

Declaration

I declare that the particulars furnished above are true to the best of my knowledge and belief. I am liablefor the authenticity of each and every bit of this information and indemnify the college administration that I takefullresponsibilityinthis regard.

Signature

Date:04-12-2023 (ALLENKI SNEHA)

STUDENTSUPPORTANDPROGRESSION

- For each class a staff member is appointed as counselor.
- Ward Registers are maintained.
- Bio-data of the students is procured.
- Consolidated Attendance is recorded.
- Parents are informed about the progress of the students.

The in-charges are in constant contact with students to solve their problems.

- The members of this department drafted as ward counselors.

ORGANIZATION AND MANAGEMENT

The following measure adopted for effective Organization and supervision.

1. Departmental meetings are conducted
2. Academic plans are prepared.
3. Individual time table and syllabus division are allotted.
4. Maintenance of Academic Registers
    a) Teaching Dairy
    b) Synopsis
    c) Attendance Registers
    d) Central Marks Register
5. Conduct of Internal Examinations.
6. Review of the syllabus coverage-RemedialMeasures

HEALTHYPRACTICES

As the most of the programmes are collectively organized by the college through constituting the committees, the Department is motivating the students to participate in the programmes like

A) College level activities

B) AIDS–Awareness programs

C) Health Awareness programs

D) NSS Activities

E) Clean & Green Activities

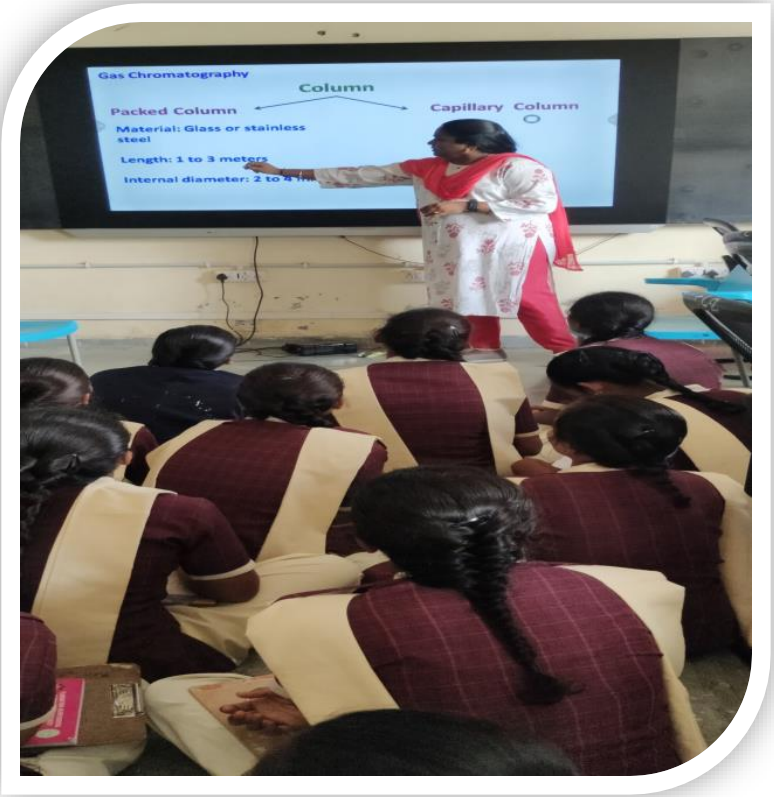
F) Haritha Haram Programmes

A part from this for some classes, lecturers appointed as ward Counsellor to solve the problem per taining to students.

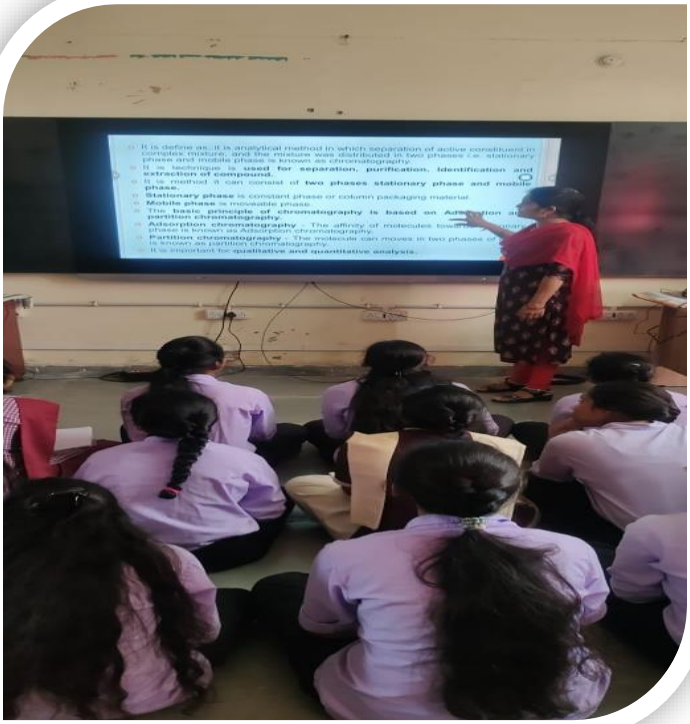
- **Teaching and Learning resources of the departments–By using various Teaching methods like.**

Modern teaching method practiced and use of ICT in teaching learning.

1. Student study projects were conducted.
2. QuestioningandAnsweringmethodisfollowedafterthecompletionofeverychapter.
3. Student Seminars are conducted frequently in every class by each Lecturer.
4. Extension Lectures conducted by Experts
5. Scientific updates like Study materials, Images etc. Shown to the students by downloading and using LCD Projector.


Gas Chromatography
Column
Packed Column
Capillary Column
Material: Glass or stainless steel
Length: 1 to 3 meters


HPLC
GPS Map Camera
Keslapur, Telangana, India
88W8+495, Keslapur, Telangana 504293, India
Lat 19.345258°
Long 79.315998°
23/11/23 10:08 AM GMT +05:30




CHROMATOGRAPHY

STUDENTSEMINARS

STUDENTSEMINARS-1

CH.SUPRIYA	MPCIIIYr	TOPIC: BEER LAMBERT'SLAW

STUDENTSEMINARS-2

2	K.KRISHNAVENI	BZCIIYr	Topic: STAIBILITY OF CARBONIONS

STUDENTSEMINARS-3

3	**CHANDHANA**	MPCIIIYr	Topic : CHROMOTOGRAPHY

STUDENTSEMINARS-4

STUDENTSEMINAR-4

04	**B.LAVANYA**	BSc(BZC)II ND Year	THERMODYNAMICS

QUIZPROGRAMME

Date	Topic	No.of Groups	Group-A	Group-B	WINNER
21/12/2019	General Chemistry	02	Score 04	Score 03	Group-A

Quiz winners:

Group CANDID ATES


Sub:- chemistry
B2C II year
A
B
RDC(D)
34

GROUP DISCUSSTION

Date	Topic	No.of Groups	Group-A NAME OF THEPARTIPICI ANT	Group-B NAME OF THEPARTIPICI ANT
	UNEMPLOY MENT	02	S.DEEPIKA	B.VAISHNAVI

GROUP-AList: BZC II:

S.Deepika, B.Vaishnavi

GROUP-BList:

MZC-II: M.Sandhya, U.Amulya

DDDD

TELANGANA TRIBAL WELFARE RESIDENTIAL

DEGREE COLLEGE FOR (GIRLS) ASIFABAD

DIST: KUMRAM BHEEM (ASIFABAD)-504293

TELANGANA STATE

(Affiliated to Kakatiya University)

DEPARTMENT OF CHEMISTRY

RECORD OF GUEST LECTURER

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE (GIRLS) ASIFABAD

DEPARTMENT OF CHEMISTRY

A REPORT ON GUEST LECTURES ARRANGED 2020-21

A guest lecture on "HEALTH PROMOTING DUGS & VITAMINS" was organized by the Department of Chemistry, Telangana Tribal Welfare Residential Degree College (Girls), Asifabad, District Kumuram Beam, Telangana.

Year	Name of the Guest Lecture	Designation	No. of Students attended
2020-21	N.Gangamani	Lecturer in chemistry	15

Topic: HEALTH PROMOTING DUGS & VITAMINS

Objectives of the Programme:

- Recognize differential health promoting drugs & vitamins
- **Health promotion drugs programme to engage and empower individuals and communities to choose healthy behaviors, and make changes that reduce the risk of developing chronic diseases and other morbidities**.

Highlighting points:

- **The health promoting drugs in vitamins are a group of complex organic compounds required in small quantities by the body for the maintenance of good health.**
- **They are not normally synthesized in the body and hence are to be supplied through the diet food**

Outcome:

- Will be able to explain the concept of health promoting drugs
- Classifies the differential between the vitamins & Micronutrients
- Explains the meaning of vitamins
- Will be able to understand the essential of vitamins to our body
- Will be able to understand the deficiency of vitamins & Micronutrients
- Will be able to understand the activity of vitamins
- Will be able to understand the fat soluble vitamins & water soluble vitamins
- Will be able to given the examples of fat soluble vitamins & water soluble vitamins
- Will be able to understand the Micronutrients & Micronutrients
- Will be able to given the examples of Micronutrients & Micronutrients
- Will be able to given the examples of deficiency of Micronutrients & Micronutrients
- Will be able to understand the sources, deficiency disorder & remedy of vitamins

The lecture was concluded with question and answer method session and vote of thanks.

Signature of the Lecturer Principal

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE (GIRLS) ASIFABAD

DEPARTMENT OF CHEMISTRY

A REPORT ON GUEST LECTURES ARRANGED 2021-2022

A guest lecture on "CARBONYL COMPOUNDS" was organized by the Department of Chemistry, Telangana Tribal Welfare Residential Degree College (Girls), Asifabad, District Kumuram Beam, Telangana.

Year	Name of the Guest Lecture	Designation	No. of Students attended
2022-2023	Dr. S.NAGESWAR RAO	Lecturer in Chemistry	16

Topic: CARBONYL COMPOUNDS

Objectives of the Programme

- To understand the nomenclature of carbonyl compounds
- To understand the properties of carbonyl compounds
- To understand the reactions of carbonyl compounds
- To understand the preparation of carbonyl compounds
- To understand the uses of Carbonyl compounds
-

Highlighting points:

- **The carbonyl compound propanone is used as a solvent since it gets dissolved in water as well as other organic solutions.**
- **Formaldehyde is used in the manufacture of plastics and also it is used in the biological laboratories for preservation purposes.**
- **Butanol is used to provide fragrance for keeping the bread fresh.**

Outcome:

- **Will be able to understand the properties of carbonyl compounds**
- **Will be able to understand the different type of carbonyl compounds**
- **Will be able to understand the reactions of carbonyl compounds**

The lecture was concluded with question-answer session and vote of thanks

Signature of the Lecturer **Principal**

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE (GIRLS) ASIFABAD

DEPARTMENT OF CHEMISTRY

A REPORT ON GUEST LECTURES ARRANGED 2022-2023

A guest lecture on "SYNTHESIS OF CARBIMAZOLE" was organized by the Department of Chemistry, Telangana Tribal Welfare Residential Degree College (Girls), Asifabad, District Kumuram Bheem, Telangana.

Year	Name of the Guest Lecture	Designation	No. of Students attended
2021-2022	REVATHI	Lecturer in Chemistry	20

Topic: SYNTHESIS OF CARBIMAZOLE

Objectives of the Programme:

- To understand the it is related to the anti thyroid drugs
- More potent given in a single daily doses
- To understand the completely absorbed accumulated in thyroid gland
- To understand excreted in urine but slower then PTU

Highlighting points:

- Has little effect on conversion of T4 to T3
- .Has some immunosuppressive action leading to decrease in serum TSH receptor antibodies
- Crosses placenta

Outcome:

- **Will be able understand the Carbimazole blocks the way your body processes iodine and reduces the amount of thyroid hormones produced.**
- **Will be able to understand how long does carbimazole take to work? Carbimazole starts working straight away, but it can take 1 to 2 months before your symptoms improve and you start to feel better.**
- **Will be able to understand Carbimazole is one of several thionamide drugs used in the treatment of hyperthyroidism. It works by inhibiting the thyroid peroxidases (TPO) that catalyze the iodination of tyrosine residues in thymoglobulin and the oxidative coupling of iodinated tyrosines.**

The lecture was concluded with question-answer session and vote of thanks.

Signature of the Lecturer **Principal**

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE (GIRLS) ASIFABAD

DEPARTMENT OF CHEMISTRY

A REPORT ON GUEST LECTURES ARRANGED 2023-2024

A guest lecture on "SYNTHESIS OF PENCILLIN G" was organized by the Department of Chemistry, Telangana Tribal Welfare Residential Degree College (Girls), Asifabad, District Kumuram Beam, Telangana.

Year	Name of the Guest Lecture	Designation	No. of Students attended
2022-2023	N.GANGAMANI	Lecturer in Chemistry	15

Topic: SYNTHESIS OF PENCILLIN G

Objectives of the Programme

- **Penicillin is a helps to medication used to manage and treat a wide range of infections.**
- **It is in the beta-lactic antibiotic class of drugs.**
- **This activity describes penicillin's indications, action, and contraindications as a valuable agent in treating infection.**

Highlighting points:

- **Penicillin G injection is used to treat and prevent certain infections caused by bacteria.**
- **Penicillin G injection is in a class of medications called penicillin's. It works by killing bacteria that cause infections.**
- **Antibiotics such as penicillin G injection will not work for colds, flu, or other viral infections**

Outcome:

- Will be able to understand the synthesis and therapeutic activity of drugs
- will be able to understand the different antibiotics activity
- will be able to given the examples of antibiotics
- will be able to understand the uses of penicillin G

Signature of the Lecturer **Principal**

FIELDTRIP1

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE G ASIFABAD

DISTRICT: KUMRAM BHEEM ASIFABD – 2022-2023

TELANGANA STATE

(AFFLIATED KAKTIYA UNIVERSITY)

DEPARTMENT OF CHEMISTRY

RECORD OF FIELD TRIPS

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE G ASIFABAD

DISTRICT: KUMRAM BHEEM ASIFABD

TELANGANA STATE

(DEPARTMENT OF CHEMISTRY)

RECORD OF FIELD TRIP SUMMARY 2022-23

NAME OF THE ORGANIZER: DEPARTMENT OF CHEMISTRY

TITLE OF THE PROGRAMME: FIELD TRIP

NO OF STUDENTS INVOLVED: 10

NAMES OF THE TEACHERS INVOLVED: Smt G.USHARANI HOD OF THE CHEMISTRY

Sri G. SAI SUMA

Sri A.SNEHA

DATE OF VISIT:

Place of the Visit: **Heena industry (cotton ginning mil at asiafabad**

Objective of the trip: To gain the practical knowledge about the separation of cotton seeds and cotton

To gain the knowledge about how to machineries working process

To gain the knowledge about which type of oils used to the machineries

Expenditure incurred and resource required:

Problem encountered: nil

Outcome of the visit: students got enriched with the knowledge of separation of cotton seeds and cotton

Through the machineries and which type of oils they are used for the working of machineries

Feed back: **feedback is collected**

Resource persons: G.USHARANI HOD OF CHEMISTRY

Signature of the Lecturer

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE GIRL, ASIFABAD

DISTRICT: KUMRAM BHEEM ASIFABAD

TELANGANA STATE

DEPARTMENT OF CHEMISTRY

Activity for future employment competitive examinations 2019-20

The department tries to encourage student who are interested for seeking higher education.
Books useful for common Post Graduation Entrance Test (CPGET) and competitive examination are kept readily for reference in the department library for aspirant. Important concepts for PG entrance test are tough as and when the related topic being covered in the class room The Department organizes Quiz Competitions to enhance the competitive spirit in which questions from Science and Technology are asked with the aim to prepare them for competitive examinations.

Details of students who got admission in higher education (2019-2020):

S.NO	NAME OF THE STUDENT	GOT ADMISSION IN	NAME OF THE INSTITUTION WHERE STUDYING
1	J.MOUNIKA	M.SC (CHEMISTRY)	NIZAM College (OU), HYD
2	SANGEETHA	B.ED	ITDA ,UTNOOR COLLEGE

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE GIRL, ASIFABAD

DISTRICT: KUMRAM BHEEM ASIFABAD

TELANGANA STATE

DEPARTMENT OF CHEMISTRY

Activity for future employment competitive examinations (2021-2022)

The department tries to encourage student who are interested for seeking higher education.
Books useful for common Post Graduation Entrance Test (CPGET) and competitive examination are kept readily for reference in the department library for aspirant. Important concepts for PG entrance test are tough as and when the related topic being covered in the class room The Department organizes Quiz Competitions to enhance the competitive spirit in which questions from Science and Technology are asked with the aim to prepare them for competitive examinations.

Details of students who got admission in higher education (2021-2022):

S.NO	NAME OF THE STUDENT	GOT ADMISSION IN	NAME OF THE INSTITUTION WHERE STUDYING
1	D.SUSHMITHA	M.SC (CHEMISTRY)	ARTS & SCIENCE COLLEGE (OU), HYD
2	ANUSHA	M.SC (CHEM)	GOVT DEGREE COLLEGE OU , MEDAK
3	M.RACHANA	M.SC (CHEM)	OU CAMPUS , HYD
4	M.DURGA	B.ED	ITDA UTNOOR COLLEGE
5	SWATHI	B.ED	ITDA UTNOOR COLLEGE
6	DEEPIKA	B.ED	ITDA UTNOOR COLLEGE
7	PAWAR NEELA	B.ED	ITDA UTNOOR COLLEGE
8	SHOBA	B.ED	ITDA UTNOOR COLLEGE

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE GIRL, ASIFABAD

DISTRICT: KUMRAM BHEEM ASIFABAD

TELANGANA STATE

DEPARTMENT OF CHEMISTRY

Activity for future employment competitive examinations 2022-2023

The department tries to encourage student who are interested for seeking higher education.
Books useful for common Post Graduation Entrance Test (CPGET) and competitive examination are kept readily for reference in the department library for aspirant. Important concepts for PG entrance test are taught as and when the related topic being covered in the class room The Department organizes Quiz Competitions to enhance the competitive spirit in which questions from Science and Technology are asked with the aim to prepare them for competitive examinations.

Details of students who got admission in higher education (2022-2023):

S.NO	NAME OF THE STUDENT	GOT ADMISSION IN	NAME OF THE INSTITUTION WHERE STUDYING
1	NIKSHITHA	M.SC (CHEMISTRY)	NIZAM College (OU), HYD
2	P.SUVARNA	M.SC (CHEM)	TELANGANA UNIVERSITY,NIZAMABAD

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE GIRLS, ASIFABAD

TELANGANA STATE-2021-2022

(AFFILIATED TO KAKATIYA UNIVERSITY)

DEPARTMENT OF CHEMISTRY

A REPORT ON OUT RESEARCH PROGRAM

INTRODUCTION:

As a part of annual curricular and co-curricular plan of Department of chemistry. We the students of B.sc life science have taken up an awareness programme on fertilizers advantages and disadvantages. Fertilizers are additional substances supplied to the crops to increase their productivity. These are used by the farmers daily to increase the crop yield.

OBJECTIVES:

- To spread awareness in the community.
- Fertilizers are additional supplied to the crops to increase their productivity.

For this we have selected a convent fertilizers shop near Asifabad bus stop, District kumram Beam, Telangana state .Firstly we took permission from the shop owner. we all are separated by teams to interacted with different customers ,our teams explained advantages and disadvantages of fertilizers exceed use.

ADVANTAGES OF FERTILIZERS:

- They are quick in providing plant nutrients and restoring soil fertility.
- They are portable and easy to transport.
- Plants easily absorb fertilizers.
- They contain organic matter that helps enhance soil structure, water retention and nutrient availability.

DISADVANTAGES OF FERTILIZERS:

- They get washed away by water easily and cause pollution.
- They harm the microbes present in soil.
- They reduce soil fertility.
- They provide only short term benefits.
- They change the nature of soil, making it either too acidic or too alkaline.

PRECAUTIONS:

- To avoid direct contact of fertilizers products with skin and eyes.
- Their excessive usage has hardened the soil, reduced fertility.

- Excess fertilizers alter the soil by creating too high of a salt concentration, and this can hurt beneficial soil microorganisms.

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE GIRLS, ASIFABAD

TELANGANA STATE

(AFFILIATED TO KAKAYIYA UNIVERSITY)

DEPARTMENT OF CHEMISTRY

A REPORT ON STUDENT STUDY PROJECT

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE GIRLS, ASIFABAD

DEPARTMENT OF CHEMISTRY

CERTIFICATE

This is to certify that student project, "Analysis of fruit and vegetable juices for their acidity" for the academic year 2022- 2023 has been successfully complete by Madavi. Chandana, Ch.Sujatha, A .Sridevi,P. maheshwari ,B.Swathi
Of B.sclife science II yr year for the partial fulfillment of departmental annual curricular plan.

PRINCIPAL

A REPORT ON STUDENT STUDY PROJECT

(Analysis of fruit and vegetable juices for their acidity)

Submitted By

1. Madavi. Chandana- b.sc(Mpc) life science II yr
2. Ch.Sujatha -B.sc (MBZC) life science II yr
3. A.Sridevi -B.sc (BZc) life science II yr
4. P.Maheshwari -B.sc (BZc) life science II yr
5. 5.B.Swathi -B.sc (MBZC) life science II yr

Supervised by: G.Usha rani lecturer of chemistry

REPORT

Title of the project:"Analysis of fruit and vegetable juices for their acidity" for the academic year 2021-2022, Asifabad

Name of the students to whom the work assigned

1. Madavi. Chandana b.sc (Mpc) life science II yr
2. Ch.Sujatha-B.sc (MBZC) life science II yr
3. A.Sridevi -B.sc (BZc) life science II yr
4. P.Maheshwari -B.sc (BZc) life science II yr
5. B.Swathi -B.sc (MBZC) life science II y

Under the guidance of: Smt. G.Usha rani lecturer of chemistry

1. **Objective:** to determine the amount of acids present in various fruits and vegetables and also to detect the presence of iron, carbohydrates, laboratory and sugars in them.
2. **Requirements:** Test tubes, burner, litmus paper, laboratory reagents, juice of various fruits and vegetables.
3. **Theory:** fruits and vegetables are always a part of balanced diet. That means the fruits and a vegetable provides our body the essential iron, carbohydrates, protein, vitamins and minerals. Their presence in these substances can be indicated by some general observations. For example ,freshly cut apple become reddish after some time because iron, carbohydrates, proteins, acids and sugars can be tested in the laboratory by extracting their juices and subjecting them to various tests.
4. **Procedure**:

a) Acid content: Take different fruit juices in different containers and dip the pH paper in them. If pH is less than 7, it is acidic. Determine their acid content by titrating a known quantity of a fruit juice with 0.01M KoH solution using phenolphthalein as indicator. In case of dark colored juices, dilute them with enough distilled water to get sharp end point during titration. Compare the acid contents of juices by comparing their acid values. The acid value of vegetables and fruits is the number of milligrams of koH required for neutralizing acid present in one gram of vegetable or fruit.

b) **Test for carbohydrates:** Take 2ml of juice and add 1 ml of Fehling's solution A&B and boil it. Red precipitate indicates the presence of reducing sugars like maltose, glucose, fructose and lactose.

C) **Test for starch**: take 2 ml of juice in a test tube and add a few drops of iodine solution.If it turns blue black in color, it indicates the presence of starch.

c) **Test for calcium**: take 2 ml of juice in a test tube and add a few drops of ammonium chloride and ammonium hydroxide solutions. Filtrate the solution and add 2ml of ammonium oxalate solution.White precipitate or milkiness indicates the presence of calcium.

Conclusion:

1. Fruits and vegetables contain important vitamins; minerals and plant chemicals. They also contain fiber.

2. A diet high in fruit and vegetables can help protect you against cancer, diabetes and heart disease

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE GIRLS, ASIFABAD

TELANGANA STATE

(AFFILIATED TO KAKAYIYA UNIVERSITY)

DEPARTMENT OF CHEMISTRY

A REPORT ON STUDENT STUDY PROJECT

A REPORT ON STUDENT STUDY PROJECT

(Study of oxalate ion content in Guava fruit)

Submitted By

6. G.sujatha- B.sc(Mpc) life science II yr
7. D.Ravalika -B.sc(Mpc) life science II yr
8. R.vanisri -B.sc(Mpc) life science II yr
9. K.yamuna -B.sc(Mpc) life science II yr
10. 5. A.Parvathi -B.sc(Mpc) life science II yr

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE GIRLS, ASIFABAD

TELANGANA STATE

DEPARTMENT OF CHEMISTRY

CERTIFICATE

This is to certify that student project ,"Study of Oxalate ion content in Guava fruit" for the academic year 2022 - 2023 has been successfully completed by G.Sujatha ,D.Ravalika,R.vanisri,K.yamuna,A.Parvathi
Of B.scII yr for the partial fulfillment of departmental annual curricular plan.

PRINCIPAL

REPORT

Title of the project:"Study of oxalate ion content in Guava fruit" for the academic year 2021-2022, Asifabad

Name of the students to whom the work assigned

1. G.sujatha- b.sc (Mpc) II yr
2. D.Ravalika -b.sc (Mpc) II yr
3. R.vanisri -b.sc (Mpc) II yr
4. K.yamuna -b.sc (Mpc) II yr
5. A.Parvathi -b.sc (Mpc) II yr

Under the guidance of: Smt.G.Usha rani lecturer of chemistry

5. **Objective**: to determine the amount of acids present in various fruits and vegetables and also to detect the presence of iron, carbohydrates, laboratory and sugars in them.
6. **Requirements:** Test tubes, burner, litmus paper, laboratory reagents, juice of various fruits and vegetables.
7. **Theory:** fruits and vegetables are always a part of balanced diet. That means the fruits and vegetables provide our body the essential iron, carbohydrates, protein, vitamins and minerals. Their presence in these substances can be indicated by some general observations. For example ,freshly cut apple become reddish after some time because iron, carbohydrates, proteins, acids and sugars can be tested in the laboratory by extracting their juices and subjecting them to various tests.
8. **Procedure:**

Acid content: Take different fruit juices in different containers and dip the pH paper in them. if pH is less than 7 ,it is acidic. Determine their acid content by titrating a known quantity of a fruit juice with 0.01M KoH solution using phenolphthalein as indicator. In case of dark colored juices, dilute them with enough distilled water to get sharp end point during titration. Compare the acid contents of juices by

d) Comparing their acid values. The acid value of vegetables and fruits is the number of milligrams of koH required for neutralizing acid present in one gram of vegetable or fruit.

e) **Test for carbohydrates:** Take 2ml of juice and add 1 ml of Fehling's solution A&B and boil it. Red precipitate indicates the presence of reducing sugars like maltose, glucose, fructose and lactose.

D) **Test for starch**: take 2 ml of juice in a test tube and add a few drops of iodine solution. If it turns blue black in color, it indicates the presence of starch.

f) **Test for calcium** : take 2 ml of juice in a test tube and add a few drops of ammonium chloride and ammonium hydroxide solutions. Filtrate the solution and add 2ml of ammonium oxalatesolution.White precipitate or milkiness indicates the presence of calcium.

Conclusion:

2. Fruits and vegetables contain important vitamins; minerals and plant chemicals. They also contain fiber.

2. A diet high in fruit and vegetables can help protect you against cancer, diabetes and heart disease

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE FOR (GIRLS) ASIFABAD

DIST: KUMRAM BHEEM (ASIFABAD)-504293

TELANGANA STATE

(Affiliated to Kakatiya University)

DEPARTMENT OF CHEMISTRY

RECORD OF BEST PRACTICES

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE (GIRLS), BURUGUDA, ASIFABAD DISTRICT-KUMURAMBHEEM-504293 TELANGANA STATE

DEPARTMENT OF CHEMISTRY

BEST PRACTICES- 2022-2023

THE DEPARTMENT OF CHEMISTRY WAS STARTED BEST PRACTICES IN THE ACADAMIC YEAR 2021

1. Title of the practice: Preparation of higher education and employment

2. Objectives of the practice:

It focuses on the overall development of the participant and seeks to provide a deeper understanding of various aspects of focuses on study, human relations, social awareness, presentation of self, working with a team while learning to negotiate and manage conflicts while at the same time encouraging independent thinking and decision

3. The context:

In interview and to get the university placements construct Evolving Policy and Practice in Employability, to improve Integrating Learning and Career Development

4. The practice:

Students following the below steps in this best practice

1. **Read and understand the information carefully.**
2. **Analyze critical Concepts**
3. **To follow the student seminars**
4. **Compare the answer obtained with other possibilities.**
5. **To follow group discussion for the tough concepts.**

6. Evidence of success:

All the final year students utilize this opportunity and got university placements, central, state and private jobs

YEAR	NAME	GROUP	PLACE	PLACEMENT
2017-2020	J.MOUNIKA	BZC	NIZAM College (OU), HYD	M.SC (CHEMISTRY)
2017-2020	SANGEETHA	BZC	ITDA ,UTNOOR COLLEGE	B.ED
2019-2022	D.SUSHMITHA	MPC	ARTS & SCIENCE COLLEGE (OU), HYD	M.SC (CHEMISTRY)
2019-2022	ANUSHA	BZC	GOVT DEGREE COLLEGE OU , MEDAK	M.SC (CHEMISTRY)
2019-2022	M.RACHANA	MBZC	OU CAMPUS , HYD	M.SC (CHEMISTRY)
2020-2023	NIKSHITHA	MBZC	NIZAM College (OU), HYD	M.SC (CHEMISTRY)
2020-2023	P.SUVARNA	MPC	TELANGANA UNIVERSITY,NIZAMABAD	M.SC (CHEM)
2019-2022	M.DURGA	MPC	ITDA UTNOOR COLLEGE	BED
2019-2022	SWATHI	MPC	ITDA UTNOOR COLLEGE	BED
2019-2022	DEEPIKA	MPC	ITDA UTNOOR COLLEGE	BED
2019-2022	PAWAR NEELA	MPC	ITDA UTNOOR COLLEGE	BED
2019-2022	SHOBA	MPC	ITDA UTNOOR COLLEGE	BED

CPGET - 2022
DIRECTORATE OF ADMISSIONS : OSMANIA UNIVERSITY, HYDERABAD

RANK CARD

Hall Ticket No.	:	62086820081
Candidate's Name	:	DASARI SUSHMITHA
Father's Name	:	DASARI POCHAIAH
Test Name	:	M.Sc. Chemistry

Community
BC_A

Date of Birth
14/10/2001

Marks Obtained	:	35
Rank	:	449

D Sushmitha

Convener

INSTRUCTIONS TO THE CANDIDATE

1. **The admissions into PG Courses offered by Osmania, Kakatiya, Telangana, Mahatma Gandhi, Palamuru, Satavahana, Telangana Mahila Vishwa Vidyalayam and JNTUH Universities (in campus,constituent and affiliated colleges) will be made through a centralized web counseling. Further, the schedules will be available in websites. The qualified candidates are advised to visit the websites from time to time for further admission schedules.**
   Websites: www.ouadmissions.com , www.osmania.ac.in and https://cpget.tsche.ac.in
2. **The eligibility of the candidates is not verified / decided at the time of application and during the entrance test. The verification will be done only during the admissions. Hence, candidates are advised to ensure that they are eligible for the course/subject they are applying for admission.**
3. **The candidates called for certificate verification must have the following original certificates /documents to be Upload for Online Certificate Verification.**
   i. **Rank Card and Hall Ticket of CPGET – 2022.**
   ii. **Transfer Certificate (T.C) from the institution where the candidate has last studied.**
   iii. **Degree certificate and complete memorandum of marks or consolidated memo of qualifying examination (the downloaded memos are not allowed). The candidate should ensure that he/she has passed the qualifying examination with a requisite percentage of marks without which his/her admission will not be entertained.**
   iv. **SSC or 10th class or its equivalent marks memo.**
   v. **Bonafide certificates from 9th Class onwards or Proof of Local \ Non-Local status of the candidate as per the rules in force (see ANNEXURE - I).**
   vi. **Community / Caste Certificate if applicable.**
   vii. **Latest Income Certificate issued by Tahsildar on or after 01.01.2022, if applicable.**
   viii. **Certificates of special categories, if applicable, and when called for admission under these categories.**
   ix. **Aadhaar Card.**

Print

CPGET - 2022
DIRECTORATE OF ADMISSIONS : OSMANIA UNIVERSITY, HYDERABAD

RANK CARD

Hall Ticket No.	:	62086820189
Candidate's Name	:	MANCHALA RACHANA
Father's Name	:	MANCHALA RAJAM
Test Name	:	M.Sc. Chemistry

Community: ST

Date of Birth: 12/08/2001

Marks Obtained	:	38
Rank	:	147

Rachana. M

Convener

INSTRUCTIONS TO THE CANDIDATE

1. The admissions into PG Courses offered by Osmania, Kakatiya, Telangana, Mahatma Gandhi, Palamuru, Satavahana, Telangana Mahila Vishwa Vidyalayam and JNTUH Universities (in campus,constituent and affiliated colleges) will be made through a centralized web counseling. Further, the schedules will be available in websites. The qualified candidates are advised to visit the websites from time to time for further admission schedules.
   Websites: www.ouadmissions.com , www.osmania.ac.in and https://cpget.tsche.ac.in
2. The eligibility of the candidates is not verified / decided at the time of application and during the entrance test. The verification will be done only during the admissions. Hence, candidates are advised to ensure that they are eligible for the course/subject they are applying for admission.
3. The candidates called for certificate verification must have the following original certificates /documents to be Upload for Online Certificate Verification.
   i. Rank Card and Hall Ticket of CPGET – 2022.
   ii. Transfer Certificate (T.C) from the institution where the candidate has last studied.
   iii. Degree certificate and complete memorandum of marks or consolidated memo of qualifying examination (the downloaded memos are not

10:05

: : Rank Card : :

CPGET – 2022

DIRECTORATE OF ADMISSIONS : OSMANIA UNIVERSITY, HYDERABAD

RANK CARD

Hall Ticket No.	:	62086820140
Candidate's Name	:	MADGANI ANUSHA
Father's Name	:	MADGANI LAXMI NARAYANA
Test Name	:	M. Sc. Chemistry

Community: ST

Date of Birth: 14/12/2001

M. Anusha

Marks Obtained	:	30
Rank	:	1891

Convener

INSTRUCTIONS TO THE CANDIDATE

1. The admissions into PG Courses offered by Osmania, Kakatiya, Telangana, Mahatma Gandhi, Palamuru, Satavahana, Telangana Mahila Vishwa Vidyalayam and JNTUH Universities (in campus, constituent and affiliated colleges) will be made through a centralized web counseling. Further, the schedules will be available in websites. The qualified candidates are advised to visit the websites from time to time for further admission schedules.
   Websites: www.cpgadmissions.com , www.osmania.ac.in and https://cpget.tsche.ac.in
2. The eligibility of the candidates is not verified / decided at the time of application and during the entrance test. The verification will be done only during the admissions. Hence, candidates are advised to ensure that they are eligible for the course/subject they are applying for admission.
3. The candidates called for certificate verification must have the following original certificates /documents to be Upload for Online Certificate Verification.
   i. Rank Card and Hall Ticket of CPGET – 2022.
   ii. Transfer Certificate (T. C) from the institution where the candidate has last studied.
   iii. Degree certificate and complete memorandum of marks or consolidated memo of qualifying examination (the downloaded memos are not allowed). The candidate should ensure that he/she has passed the qualifying examination with a requisite percentage of marks without which his/her admission will not be entertained.
   iv. SSC or 10th class or its equivalent marks memo.
   v. Bonafide certificates from 9th Class onwards or Proof of Local \ Non-Local status of the candidate as per the rules in force (see ANNEXURE – I).
   vi. Community / Caste Certificate if applicable.
   vii. Latest Income Certificate issued by Tahsildar on or after 01. 01. 2022. if applicable.
   viii. Certificates of special categories, if applicable, and when called for admission under these categories.
   ix. Aadhaar Card.

Print

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE FOR (GIRLS) ASIFABAD

DIST: KUMRAM BHEEM (ASIFABAD)-504293

TELANGANA STATE

(Affiliated to Kakatiya University)

DEPARTMENT OF CHEMISTRY

RECORD OF BEST PRACTICES

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE (GIRLS), BURUGUDA, ASIFABAD DISTRICT-KUMURAMBHEEM-504293 TELANGANA STATE

DEPARTMENT OF CHEMISTRY

BEST PRACTICES- 2022-2023

THE DEPARTMENT OF CHEMISTRY WAS STARTED BEST PRACTICES IN THE ACADAMIC YEAR 2020

1. Title of the practice: TEACHING METHODS

- **Reformed Teaching Learning:** Process In education, teachers facilitate student learning which helps students gain skills knowledge and thinking ability. Different ways to teach are often referred to as pedagogy. Teaching using pedagogy involves assessing the educational levels of the students on particular skills. Understanding the pedagogy of the students in the class room involves using differentialised instruction as well as supervision to meet the needs of all students in the classroom.

    - **Student Centric Learning:** As we found a few difficulties in the traditional method of chalk and talk teaching, we have set up the classroom as student centric namely **reformed Teaching Learning (RTL) process**. In this RTL method, the interaction by students has improved considerably. Like they are paeticipated in SEMINARS, GROUP DISCUSSION, DEBATE etc……..

    - **Activity Based Learning**: As this new process is connected with activity based learning such as role play; students get more space to interact with teachers and classmates. Further, PPTs, Videos, OHPs and short seminars are being used in the RTL method that results in easy understanding of the concepts by students.

    - **Project Based Learning;** The RTL method provides a detailed learning to students and also reduces them to initiate a project on the basis of what they have learnt in the classroom.

    - **Quiz**: To get in-depth knowledge in subjects, technical quiz is conducted in each subject which helps students to have specified learning.

- **(e) Mentoring** : The teachers meet students periodically, collects the pros and cons of this method and counsel them to remove the difficulties in their academic performance; this method is called ‘Mentoring system’ ; students’ personal issues are also discussed and a proper guidance and support is provided to ensure the comfort of students in the campus.

- The primary focus of the RTL method is to give students a wide-ranging knowledge, exceptional creativity and more comfort and to bring out their hidden potentials into the limelight.

- **College Outreach Programmes**: It is important to know that the school Teachers should shape their students who go for higher education and should be aware of the latest trend of professional courses such as MBA , MCA,M.SC,PTHARMASUITICAL INDUSTRIES

- Also the UG students should equip their qualities in the entire manner while they transform from UG to college/university.

- To create awareness and to bridge the gap on these aspects, we have designed a few outreach programmes for students and teachers of school.

The following are the benefits of the programmes:

- Teachers will get awareness about the latest teaching aids.

- Providing EXTENSION LECTURES

- Difficulties and barriers of subjects will be cleared thoroughly.

- Bringing school students to this campus and facilitating them to access the college resources

- Students are given valuable exposure by using the new and different resources beyond the reach of many private colleges

- Motivating them to take up CHEMISTRY related courses for higher studies

Signature of the Lecturer PRINCIPAL


TENSES AND VOICE
Health Promoting Drugs:
Vitamins :- A, D, E, K
B, C
Fat soluble vitamins


UNEMPLOYMENT
vivo T1
Dec 4, 2023, 16:24

నమస్తే తెలంగాణ

ఉత్తీర్ణత సాధించేందుకు కృషి చేయాలి

మాట్లాడుతున్న గురుకుల అడ్మిన్ ప్రత్యేక అధికారి ఏకాంబరం

ఆసిఫాబాద్ అంబేద్కర్‌చౌక్, ఫిబ్రవరి 3: డిగ్రీలో వందశాతం ఉత్తీర్ణత సాధించేలా అధ్యాపకులు కృషి చేయాలని గురుకులాల అడ్మిన్ ప్రత్యేక అధికారి ఏకాంబరం అన్నారు. శనివారం స్థానిక గిరిజన గురుకుల మహిట్లాడారు. పరీక్షల పట్ల తీసుకోవాల్సిన జాగ్రత్తలపై దిశానిర్దేశం చేశారు. విద్యార్థులు ఒక లక్ష్యాన్ని ఎంచుకొని ముందుకు సాగాలని సూచించారు. ప్రిన్సిపాల్ డి.శారద, ఏఓ సుజాత, లైబ్రేరియన్ లలిత, పీడీ హారిక, జ్యోతి,

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE GIRLS, ASIFABAD

DISTRICT: KUMRAM BHEEEM ASIFABAD

TELANGANA STATE 504293

INSTITUTIONAL ACTION PLAN ACADEMIC PLAN FOR THE ACADAMIC YEAR (2018-2019)

S.NO	MONTH &WORK	ACTIVITY	DESCRIPTION	CONDUCTEDOR NOT,REASONS IF NOT CONDUCTED	RESOURCE PERSON	REMARKS
1	JUNE	DEPARTMENT ACTION PLAN, CURRICULAR PLAN	Preparation of action plan academic for the year 2018-2019	**Conducted**	All the teaching staff	
2	JULY	DOST ADMISSION WORK QUIZ COMPETITON	DOST Admission process completed Quiz competition	**Conducted** **Conducted**	Principal & All the teaching & non teaching staff G.Sravanthi	
3	AUGUST	INDEPENDENCE DAY Internal Examination -1	Independence day celebrations To Conduct internal exams to the students	**Conducted** **Conducted**	Principal & All the staff G.Sravanthi T.Reena S.Vijayalaxmi	
4	SEPTEMBER	TEACHERS DAY CELEBRATIONS Internal Examination -II	Celebration of Teachers day To Conduct internal exams to the students	**Conducted** **Conducted**	Principal & All the teaching staff	
4	SEPTEMBER	TEACHERS DAY CELEBRATIONS Internal Examination -II	Celebration of Teachers day To Conduct internal exams to the students	**Conducted** **Conducted**	Principal & All the teaching staff	
5	OCTOBER	PRACTICAL EXAMS GROUP DISCUSSION	To Conduct The practical exams to the students Group discussion	**Conducted** **Conducted**	G.Sravanthi T.Reena S.Vijayalaxmi	
6	NOVEMBER	COMMENCEMENT OF SEMESTER EXAM STUDENT	To Conduct the semester exams to the students Student assignment were conducted	**Conducted** **Conducted**	G.Sravanthi T.Reena S.Vijayalaxmi	

7	**DECEMBER**	**COMMENCEMENT OF SEMESTER EXAM**	To Conduct the semester exams to the students	**Conducted** **Conducted**	G.Sravanthi T.Reena S.Vijayalaxmi	
8	**JANUARY**	**STUDENT SEMINAR**	To conduct Seminar for students in the concern subject	**Conducted**	G.Sravanthi T.Reena S.Vijayalaxmi	
9	**FEBRUARY**	**Internal Examination -1**	To Conduct internal exams to the students	**Conducted**	G.Sravanthi T.Reena S.Vijayalaxmi	
10	**MARCH**	**DEBATE**	Debate on the topic	**Conducted**	G.Sravanthi T.Reena S.Vijayalaxmi	
11	**APRIL**	**Internal Examination –II** **Practical exams** **COMMENCEMENT OF SEMESTER EXAM**	To Conduct internal exams to the students To Conduct the semester exams to the students	**Conducted**	G.Sravanthi S.Vijaya laxmi	

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE GIRLS, ASIFABAD

DISTRICT: KUMRAM BHEEEM ASIFABAD

TELANGANA STATE 504293

(AFFLIATED TO KAKATIYA UNIVERSITY)

INSTITUTIONAL ACTIONPLAN ACADEMIC PLAN FOR THE ACADAMIC YEAR-2019-2020

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE GIRLS, ASIFABAD

DISTRICT: KUMRAM BHEEEM ASIFABAD

TELANGANA STATE 504293

(Affiliated Kakatiya University)

INSTITUTIONAL ACTION PLAN ACADEMIC PLAN FOR THE ACADAMIC YEAR-2019-2020

S.NO	MONTH &WORK	ACTIVITY	DESCRIPTION	CONDUCTEDOR NOT,REASONS IF NOT CONDUCTED	RESOURCE PERSON	REMARKS
1	JULY	COMMENCEMENT OF CLASSES FOR I,III,V SEMESTER DEPARTMENT ACTION PLAN, CURRICULAR PLAN	Celebration of college Review of curricular activities	**Conducted**	All the teaching staff	
2	AUGUST	INDEPENDENCE DAY Internal Examination -1	Independence day celebrations To conduct the internal exams to the students for I,III& V	**Conducted** **Conducted**	Principal & all the teaching staff G.Sravanthi S.Vijaya laxmi	
3	SEPTEMBER	TEACHER'S DAY CEIEBRATIONS DEBATE	Celebration of Teachers day Student debate to improve there subject Knowledge	**Conducted** **Conducted**	Principal & all the teaching staff G.Sravanthi S.Vijaya laxmi	
4	OCTOBER	Internal Examination -II	To conduct the internal exams to the students for I,III& V		G.Sravanthi S.Vijaya laxmi	
		STUDENT SEMINAR	**To conduct Seminar for students in the concern subject**	**Conducted**	G.Usharani	
5	NOVEMBER	GROUP DISCUSSION PRACTICAL EXAMS	**Group discussion** **To Conduct practical exams for students For semester I ,III&V**	**Conducted**	G.Sravanthi S.Vijaya laxmi G.Usharani	

		COMMENCEMENT OF SEMESTER EXAM	**To Conduct the semester exams to the students**	**Conducted**		
6	**DECEMBER**	**STUDENT ASSIGNMENT**	**Student assignment were conducetd**	**Conducted**	G.Sravanthi S.Vijaya laxmi G.Usharani	
7	**JANUARY**	**REPUBLIC DAY** **INTERNAL EXAMS -1**	**Republic day Celebraiton at college** **To Conduct internal exams to the students For semester II,IV & VI**	**Conducted**	G.Sravanthi S.Vijaya laxmi G.Usharani	
8	**FEBRUARY**	**Quiz** **SEMINAR**	To conduct the quiz competition to the students to improve their skills To conduct the seminar competition to the students to improve their skills	**Conducted** **Conducted**	G.Sravanthi S.Vijaya laxmi G.Usharani	
9	**MARCH**	**Internal Examination -II**	**To Conduct internal exams to the students For semester II,IV & VI**	**Conducted**	G.Sravanthi S.Vijaya laxmi G.Usharani	
10	**APRIL**	**PRACTICALS** **COMMENCEMENT OF SEMESTER EXAM**	**To Conduct the Practicals exams to the students for SEMESTER II,IV,VI** **To Conduct the semester exams to the students**	**Conducted** **Conducted**	G.Sravanthi S.Vijaya laxmi G.Usharani	

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE (G), ASIFABAD
DEPARTMENT OF CHEMISTRY
ANNUAL, LESSON PLAN FOR THE ACADEMIC YEAR 2018-19

SUBJECT: CHEMISTRY **SEMESTER-V** **PAPER-V**

S.No.	Month	Week	Topic to be covered	Co-curricular, Extracurricular, Innovation, Best Practices
01	July	IV Week	**Unit I: Chromatography-I** Solvent Extraction	Innovative Practice
02	August	I Week	Classification of chromatographic methods	
		II Week	Thin layer Chromatography (TLC)	
		III Week	INTERNAL EXAMINATIONS 1 Paper Chromatography	
		IV Week	**Unit II: Chromatography-II** Column Chromatography	
		V Week	Ion exchange chromatography:	
3	September	I Week	Gas Chromatography	
		II Week	High performance liquid chromatography	Student Seminar
		III Week	**Unit III: Colorimetry and Spectrophotometry**	
		IV Week	Beer Lambert's law	
	October	I Week	Single beam UV- Visible Spectrophotometer INTERNAL EXAMINATIONS 2	
		II Week	IR Spectrophotometer	
		III Week	**Unit IV: Electro analytical methods**	
		IV Week	Types of Electro analytical Methods.	
		V Week	PRACTICAL EXAMS Reference electrodes	
		I Week	Application of Potentiometry	
		II Week	Voltametry	
		III	Over potential and Polarization	

04	**November**	**Week IV Week**	**Bulk methods**	
05	**December**	**I Week**	**Specific Conductivity**	
		II Week	**Applications of conductometry**	**Student- assignment**
		III Week	**Revision for exams**	

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE (G), ASIFABAD
DEPARTMENT OF CHEMISTRY
ANNUAL, LESSON PLAN FOR THE ACADEMIC YEAR 2018-19

SUBJECT: CHEMISTRY **SEMESTER-III** **PAPER-III**

S.No.	Month	Week	Topic to be covered	Co-curricular, extracurricular, Innovation, Best Practices,
01	July	IV Week	Topic to be covered	
02	August	I Week	UNIT-1 Chemistry of f-block elements	
		II Week	coordination Compounds	
		IIIWeek	Metal Carbonyls and Organometallic chemistry INTERNAL EXAMINATIONS 1	
		IV Week	UNIT II ORGANIC CHEMISTRY	
		V Week	Carboxylic acids and derivatives	
03	September	I Week	Nitrohydrocarbons	Student Seminar
		II Week	Amines Cyanides and Isocyanides	
		III Week	Cyanides and Isocyanides	
		IV Week	UNIT III - PHYSICAL CHEMISTRY	
		V Week	Thermodynamics I	
04	October	I Week	Thermodynamics II INTERNAL EXAMINATIONS 2	
		II Week	UNIT IV- GENERAL CHEMISTRY	
		III Week	Evaluvation of analytic chemistry	
		IV Week	Carbanions 1	
		V Week	PRACTICAL EXAMS	
05	November	I Week	Phase rule	
		II Week	Erros, mean mideain	
		III Week	Two components system	
		IV Week	Evaluation of analyatical data	
	December	I Week	PRACTICAL EXAMS	
		II Week	Revision for exams	Student- assignment
		III Week	Revision for exams	

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE (G), ASIFABAD
DEPARTMENT OF CHEMISTRY
ANNUAL, LESSON PLAN FOR THE ACADEMIC YEAR 2018-19

SUBJECT: CHEMISTRY **SEMESTER-I** **PAPER-I**

S.No.	Month	Week	Topic to be covered	Co-curricular, Extra curricular, Innovation, Best Practices,
01	July	IV Week	UNIT 1 INORGANIC CHEMISTRY	
02	August	I Week	Chemical bonding	
		II Week	P-block elements	
		III Week	UNIT-II ORGANIC CHEMISTRY	
		IV Week	Structural Theory in Organic chemistry	quiz
		V Week	Acyclic Hydrocarbons	
03	September	I Week	Aromatic Hydrocarbons	
		II Week	UNIT III PHYSICAL CHEMISTRY INTERNAL EXAMINATIONS 1	
		III Week	Atomic Structure	
		IV Week	Gaseous State	
		V Week	Liquid State and Solutions	
04	October	I Week	Solutions	
		II Week	UNIT IV-GENERAL CHEMISTRY	debate
		III Week	Isomerism	
		IV Week	Solid state chemistry	
05	November	I Week	Conformational analysis INTERNAL EXAMINATIONS 2	
		II Week	Qualitative analysis PRACTICAL EXAMS	
		III Week	UNIT 1 INORGANIC CHEMISTRY INTERNAL EXAMINATIONS 2	

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE (G), ASIFABAD
DEPARTMENT OF CHEMISTRY
ANNUAL, LESSON PLAN FOR THE ACADEMIC YEAR 2018-2019

SUBJECT: CHEMISTRY **SEMESTER-VI** **PAPER-VI**

S.No.	Month	Week	Topic to be covered	Innovation, Best Practices,
01	January	II Week	UNIT-1 INTRODUCTION AND TERMINOLOGY INTERNAL EXAMINATIONS 1	
		III Week	Diseases,Drugs	Group discussion
		IV Week	ADMET	
02	febraury	I Week	UNIT II Enzymes and Receptor	Project Report
		II Week	Enzymes Introducton	
		III Week	Receptor	
		IV Week	UNIT III Synthesis and Therapeutic	Student seminar
			INTERNAL EXAMINATIONS 2	
03	march	I Week	UNIT IV- MOLECULER MESSENGERS , VITAMINS AND MICRONUTRIENTS	Debate
		II Week	Molecular Messenger	
		III Week	Adrenergic drugs	Field trip
		IV Week	SSRIs-Fluoxetine	Quiz
04	April	I Week	Levodopa PRACTICAL EXAMS	

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE (G), ASIFABAD

DEPARTMENT OF CHEMISTRY

ANNUAL, LESSON PLAN FOR THE ACADEMIC YEAR 2018-2019

SUBJECT: ALGEBRA **SEMESTER-IV** **PAPER-IV**

S.No.	Month	Week	Topic to be covered	Co-curricular, extracurricular, Innovation, Best Practices,

01	January	II Week	UNIT 1- INORGANIC CHEMISTRY INTERNAL EXAMINATIONS 1	
		III Week	Coordination compound II	Group discussion
		IV Week	Bioinorganic chemistry	
02	febraury	I Week	UNIT II Organic chemistry	Project Report
		II Week	carbohydrates	
		III Week	Amino acids and proteins	
		IV Week	HETERO CYCLIC COMPOUNDS	Student seminar
		V Week	INTERNAL EXAMINATIONS 2	
03	march	I Week	UNIT III Physical chemistry	Debate
		II Week	INTERNAL EXAMINATIONS 2	
		III Week	Chemical kinetics	Field trip
		IV Week	UNIT IV General chemistry	Quiz
04	April	I Week	Carbanions II PRACTICAL EXAMS	

TELANGANA TRIBAL WELFARE RESIDENTIAL DEGREE COLLEGE (G), ASIFABAD
DEPARTMENT OF CHEMISTRY
ANNUAL, LESSON PLAN FOR THE ACADEMIC YEAR 2018-2019

SUBJECT: CHEMISTRY **SEMESTER-II** **PAPER-II**

S.No.	Month	Week	Topic to be covered	Co-curricular, extracurricular, Innovation, Best Practices,
01	February	II Week	Topic to be covered UNIT 1- Syllabus introductions P- Block elements II CHEMISTRY OF ZERO GROUP ELEMENTS	
		III Week	INTERNAL EXAMINATIONS-1	Group discussion
		IV Week	OXIDES	
02	March	I Week	Chemistry of d- block elements	Project Report
		II Week	UNIT II ORGANIC CHEMISTRY	
		III Week	Halogen compounds	
		IV Week	Hydroxy compounds and ether	Student seminar
		V Week	Carbonyl compounds UNIT III Physical chemistry	
03	April	I Week	INTERNAL EXAMINATIONS 2 Electro chemistry	Debate
		II Week	UNIT IV- General chemistry PRACTICAL EXAMS	
		III Week	Theory of qualitative analysis	Field trip
		IV Week	Stereo isomerism	Quiz