WELCOME
TO
KNMGDC VISITED
NAAC PEER TEAM

CHEMISTRY

DEPARTMENT OF CHEMISTRY
KNM.GOVT DEGREE COLLEGE
MIRYALAGUDA, TG .508207

CHEMISTRY DEPARTMENT KNMGDC MIRYALAGUDA TG 508207

S.No	TITLE
1.	COLLEGE WITH DEPARTMENT PROFILE
2.	CURRICULUM
3.	SYLLABUS & PROGRAMME OUT COME OF B.Sc & SPECIFIC OUT COMES, COURSE OUT COMES
4.	CURRICULUM ASPECTS
5.	CURRICULUM ACTIVITIES (Departmental Objects)
6.	SUCCESSION LIST OF THE DEPARTMENT
7.	PERSONAL PROFILES
8.	STUDENT STRENGTH PARTICULARS
9.	ADDITIONAL CURRICULAR RESPONSIBILITIES
10.	ANNUAL ACADEMIC PLAN 2019-20
11.	CRITERIA WISE ACTIVITIES
12	RESULT ANALYSIS & MERIT STUDENTS MARKS
13.	BEST PRACTICES
14.	PARTICULAR INSTITUTIONAL SOCIAL RESPONSIBILITY AND EXTENSION ACTIVITIES
15.	HIGHLIGHTS OF THE DEPARTMENT a) Teaching Methods on Practice b)PPT c) Field Trip d) Quiz Computation & Student Seminar e) Extension Lectures f) P.G Ranks (Last 5 Years)
16.	Time Table

I. COLLEGE WITH DEPARTMENT PROFILE:

1.	Name of the Department	**chemistry**			
2.	Year of Establishment	1989			
3.	Courses / Programmes and Subject combinations offered	UG CBCS T/M&E/M BSc (i) Mpc(Maths,Physics,Chemistry)T/M & E/M (ii) MCCs (Maths,Chemistry,Computerscience)EM (iii)BZC(Botany,Zoology,Chemistry)T/E .M (iv) Two Optional with Mooc's Subjects (a) Psychology (Mooc's) (b) Sociology (Mooc's) (c) Geography (Mooc's) (d) Anthropology / Mooc's (e) Journalism			
4.	Number of Teaching Post Sanctioned and Filled	Sanctioned -01			
		Filled – 01			
5.	Number of Administrative Staff	NIL			
6.	Number of Technical Staff	NIL			
7.	Number of Students (Men / Women) Give details Course wise in the year2018-2019	Group	Men	Women	Total
		B.SC– I	31	23	54
		B.SC –II	23	02	25
		B.SC– III	38	03	41
		Total	92	28	120
8.	Ratio of Teachers to Students	1:152			
9.	Ratio of Teachers to Research Scholars	NA			
10.	Number of Research Scholars	NA			
11.	Number of Teachers in academic bodies of other autonomous colleges and universities	NIL			
12.	Last revision of the Circulars	2018-2019			
13.	Number of Students passed in NET / SLET etc. (last 5 years)				
14.	Success Rate of Students				
15.	Demand Ration (No. Of Seats: No. Of Applications	NA DOST			
16.	List of Senior Visiting Faculty	02			
17.	Percentage of Lectures delivered and practicalclasses handled (programme wise) by temporary faculty				
18.	Number of faculty with ongoing projects from a) National b) International funding agencies and grants received	 NIL NIL			
19.	Awards and Recognition received by faculty (Last 5 Years)	NIL			
20.	Faculty who have attended Natl /Intl. Seminars (Last 5 Years)	02			

21.	Number of National in Ternationai seminars organized (Last 5 Years)	NIL
22.	Number of Teachers engaged in consultancy and the reverse generated	NA
23.	Number of ongoing projects and there total outlay	Jignasa,Harithaharam,Natural Aquarium,Vermicompost,Waterharvesting
24.	Research projects completed during last 5 Years & their outlay	In2016 "INHIBITORY AGENTS FOR ALZHEIMER'S AND PARKINSON'S DISEASES AND THEIR MOLECULAR MODELLING STUDIES" In 2018 and2019 student research projects on "DE GENERATIVE DISEASES"through Jignasa
25.	Number of Inventions and Patents	02
26.	Number of Ph.D thesis Guided during the last 5 years	NA
27.	Publications by faculty (last 5 years)	(04) 02
28.	Average citations index and impact factor of publications	2.5
29.	Number of Books in the Department Library if any	Above 100
30	Number of Journals Periodicals in the Department Library	IJPBS,LJRCS
31.	Number of Computers	01
32.	Annual Budget (Excluding Salary)	15000
33.	Faculty as Members in	
	a) National Committees	NIL
	b) International Committees	NIL
	c) Editorial Boards	NIL
	d) Board of Studies	01
34.	Student Projects	20% In 2018 and2019 student research projects on "DE GENERATIVE DISEASES"through Jignasa 50% on Harithaharam ,vermicompost&WaterHarwesting
	a) Percentage of students who have done in-house projects including inter departmental programme	

	S.NO.	TITLE	NAME OF THE STUDENT	CLASS
	1	JIGNASA-2018	M.VENUGOPAL&Team	BSC IstYear
	2	JIGNASA-2019	M.VENUGPAL&Team D.VENKATESH&Team	BSCIIYEAR
	3	DISHAPROJECT	Allthe female students	
	4	HARITHAHARAM	All the BSC students	BSCIIYEAR
	5	NATURALAQUARIUM	M.VENUGPAL&Team D.VENKATESH&Team	BSCIIYEAR

	b) Percentage of students placed for projects in organizations outside the institutions i.e in Research Laboratories, Industry other Agencies	NIL
35	Awards Recognitions received by faculty and students	

S.No	Year	Name & Hall Ticket No	Rank	University

	1	Sep-2016	Dr.B.Venkateswarlu Asst.professor	Excellent grade	Osmania University
	2	Aug-2019	P.Neelambari BSC, MPC H.NO:401815441506	100/100 in chemistryI&IVaiong with district level total highest marks in Languages	Comissio Nerate of collegiate Education
	3	Dec-2019	M.Venugopal BSCBZCH.NO: 18044018445018	10/10GPAget in SEM-III	MG U
	4				
	5				
	6				

36	Diversity of Students			
	Name of the course	% of students from the same state	% of students from the other states	% of students from abroad
	B.SC	100%	0%	0%

37	Students Progression	
	Student Progression	Against % Enrolled
	UG to PG	20-40%
	PG to M. Phil	NIL
	PG to Ph.D	NIL
	PG to Post Doctoral	NIL
	Employed	
	a) Campus Selection	NIL
	b) Other than Campus Selections	30%
	Self Employed	30%
38	Number of students receiving financial assistance from College,University, Government or other agencies	100% (The students get scholarship from social welfare department)

OUR COURSES & COMBINATIONS:

- MPC (Maths, physics, chemistry) E/M&T/M.
- MCCS (Maths, Chemistry, Computer Sceince) E/M.
- BZC (Botany, Zoology, Chemistry) E/M&T/M

KNM GOVERNMENT DEGREE COLLEGE MIRYALAGUDA

DEPARTMENT OF CHEMISTRY PROFILE

Life is chemistry
Dilute your sorrow
Boil your ego
Evaporate your worries
Filter your mistake
You will get the crystal of hapiness

ABOUT THE DEPARTMENT:

Chemistry department established on August 1989 in KNM Degree College as a part of science Wing it is situated at College Building ground floor G-6 & G-7Rooms up to 2016 after that it is shifted into F-4 &F-5 in F-4 Lab used for SEMISTER I,II,III,V volumetric analysis, semi-micro
analysis, organic preparations & identifications, some instrumentations and as well as classroom in F-5 Lab used as store room,SEMISTER-IV & V Analytical balences and some instrumentals as well as classroom. The Department has 56 Hours work load with three sanctiond posts by management and it continues to 1994 with BSC MPC&BZC TeluguMedium Courses to a strength of 90%students belong to rural poor socially and economically backward classes. In 1989 appointed as adhoc basis Faculty members are

1) G.VenkatReddy for physical chemistry
2) B.Venkateswarlu for organic chemistry
3) SK.Ussain for inorganic chemistry

In 1994 &1995 as per DHE guidelines appointed as fulltime with constituted committee as per G.O M.s No .12 they are

1) G.VenkatReddy for physical chemistry
2) B.Venkateswarlu for organic chemistry
3) SK.Ussain for inorganic chemistry
4) K.Prameela for inorganic chemistry (after 7days she is Resignation & joined at AV College HYD)

From 1991 to 2001out going chemistry Department students were got good results in UG Level & PG ranks in osmania, HCU, Kakatiya, and other universitiesSome of students were setteled in very good positions in worldwide, they are

1) Dr.M.Janaki RamRedy MSc, PhD, US Immigrant, Greencard holder
2) Dr.J.PraveenRedy MSc, PhD, US Immigrant, Greencard holder
3) Dr.P.Nagi Redy MSc, PhD, US Immigrant, Greencard holder
4) Dr.S.Raja shekarRedy MSc, PhD, US Immigrant, Greencard holder
5) Dr.M.SomiRedy MSc, PhD, PostDoc at Switzerland
6) Dr.V.VenkatRedy MSc, PhD, PostDoc MITin US Immigrant, Greencard holder
7) Dr.M.Srinivas MSc, PhD, Working as Associate professor at OU
8) Dr.B.Venkat lingam MSc, PhD, Young scientist CSIR-IICT
9) Dr.S.MallaReddy MSc, PhD Managing Director for Startup Company
10) Dr.M.JanakiRamReddy MSc, PhD working as a senior scientist at Hetero Labs

11) Dr.M.Ravinder, MSc, PhD working as a senior scientist at clear synth Labs.

12) Dr.P.Sundar Ram Reddy, MSc, PhD, Working as a senior scientist at GVK BIO Labs.

13) Dr.P.Bhasker, MSc, PhD working as a senior scientist at Newland Labs.

14) Dr.V.SaidiReddy MSc, PhD, Working as Acadamic consultant at Mumbai.

15) P.Ravikumar MSc Asst.PProfessor of chemistry

16) K.Sailaja MSc Software

17) Mr.P.vijay, Working as group leader at IBM-Hyderabad.

18) Mr.B.Vijay bhasker Reddy, Working as consultant overseas companies.

So many students were settled in Reddy labs situated at Thripurarum and HYD. Thousands of students were settled as Government and Non-Government Lecturers for PG, Degree and Junior colleges,Teachers as School Assistants, SGT,Higher to Lower cadre In the police department (DSP, CI, SI, Constables) Other groups of services like Secretariat, Local bodies etc..

In March 2013 B.Venkateswarlu, organic chemistry Lecturer joined in PhD course at osmania university based on Eligibility Test as a Teacher candidate Doctoral work on "INHIBITOTY AGENTS FOR ALZHEIMER AND PARKINSON'S DISEASES AND
THEIR MOLECULAR MODELLING STUDIES" completed Doctoral work September2016 Convocation Awarded PhD from Osmania University with peer reviewed international publications. On10-04-2018 as per commisionerate of collegiate education proceeding number 410/Admin-1/2013 Regularised/Absorbed staff members in chemistry department is

1) Dr.B.Venkateswarlu Asst.Professor of chemistry

2) R.Sujith Reddy Lecturer in chemistry

From 10-04-2018 onwards Dr.B.Venkateswarlu.Asst.Professor of chemistry as a HOD in Chemistry department with additional responsibilities like Jignasa for Student Research Projects, DISHA Projects for career guidance and employability especially for female Students, SWAYM for MOOCS, and Haritha haram as per proceeding number 55 act as vice principal for Academic matters, TC, Study conduct, Examination branch up to 01-01-2020.

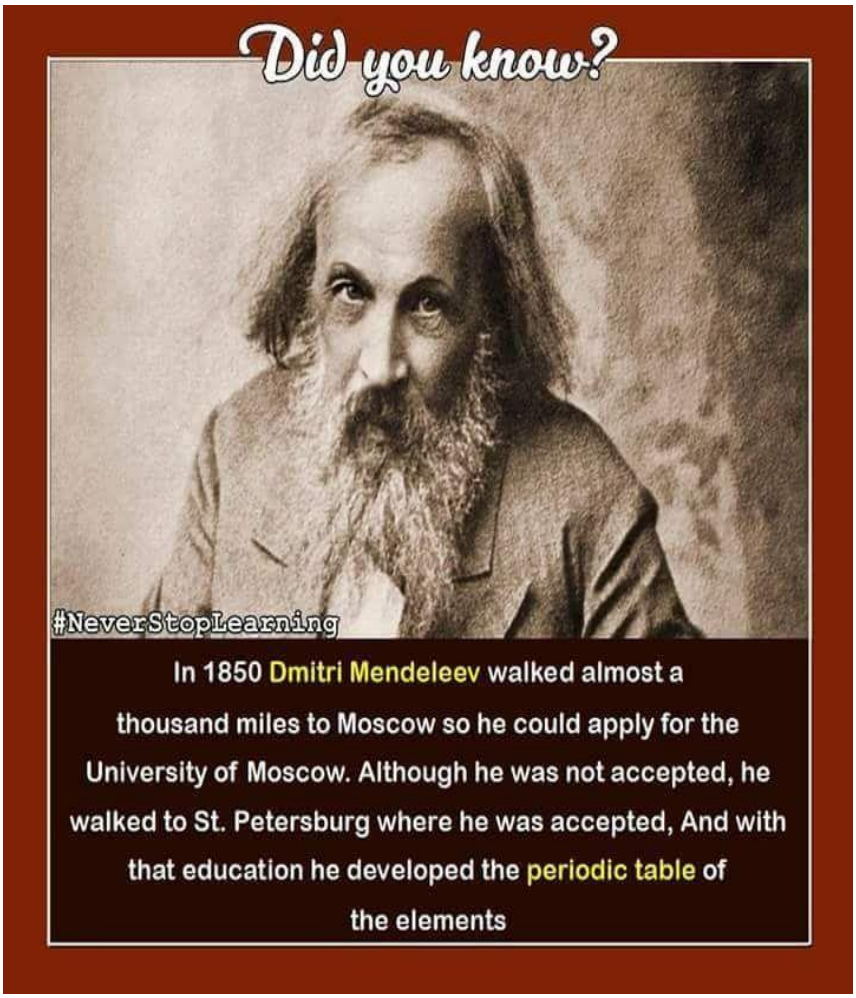
The department has regular connections with MGU Nalgonda. O.U and all Govt. Degree College in the District, students are participating in the NCC, NSS Games, Sports, Library, Cultural Programmes, Swatch Bharath, Harithaharam, Blood Donation and Social Service camps.Free coaching for PG Entrance is being given in summer and as many as Students were selected for university education in the last 5 years.

IMPORATANCE OF CHEMISTRY:

Chemisry is a branch of science that deals with the study of matter, its composition, properties and reactions.. It is a universal course which is essentiallyconcerned with the production of artificial substances by utilizing natural components.Among allthe scientificdisciplines,chemistry is often said to be the central part of science,as it is mostextensively connected to other fields of study .some of these fields include environmental science, medicine,biology,engineering,manufacturing,geology,astronomyand economics.To have an idea of how chemistry and its principles are used in different fields,some applications are

- Principles of chemistry are used in chemical industries for manufacturing fertilizers,acids,salts,dyes,polymers,drugs,soaps,detergents,metals,alloys and other materialsthat contribute to thenational economy.
- The techniques employed in the analysis of chemicals are used by thegeologists to identify rock samples,new minerals and oil deposites in metallurgical applications.
- With a better understanding of chemical principles,it has now become possible to design and synthesize new materials which have specific magnetic,electric and optical properties.this has led to the production of super conducting ceramics,conductingpolymers,opticalfibers and largescale miniaturization (integration) of solidstate devices.
- Chemistry plays a significant role in meet human needs for food ,healthcare products and other materials,aimed at improving the quality of life.This is demonstrated by the largescale production of avariety of fertilizers,improved varieties of pesticides insecticides for production of crop and huge variety of drugs for healthcare.
- The modern science of chemistry is often categorized in to four major areas namely inorganicchemistry,organic chemistry,physical chemistry and analytical chemistry(General chemistry) .Each of these areas are concernedwith different aspects of the properties and reactions of substances.

MAXIMUM NUMBEROFNOBLE LAURATES IN CHEMISTRY GROUP PHOTO



"INHIBITORY AGENTS FOR ALZHEIMER AND PARKINSON'S DISEASES AND THEIR MOLECULAR MODELLING STUDIES

A THESIS

SUBMITTED FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

In CHEMISTRY

TO

OSMANIA UNIVERSITY

BY

B. VENKATESWARLU

2016

DEPARTMENT OF CHEMISTRY

OSMANIA UNIVERSITY

HYDERABAD-TELANGANA-INDIA-500007

Osmania University
Centenary Celebrations

A curtain raiser public lecture
on
tulatory Message to Osmania University at its Centenary:
Reflections on my Half-Century in Science"
By
Professor Kurt Wüthrich
Nobel Laureate

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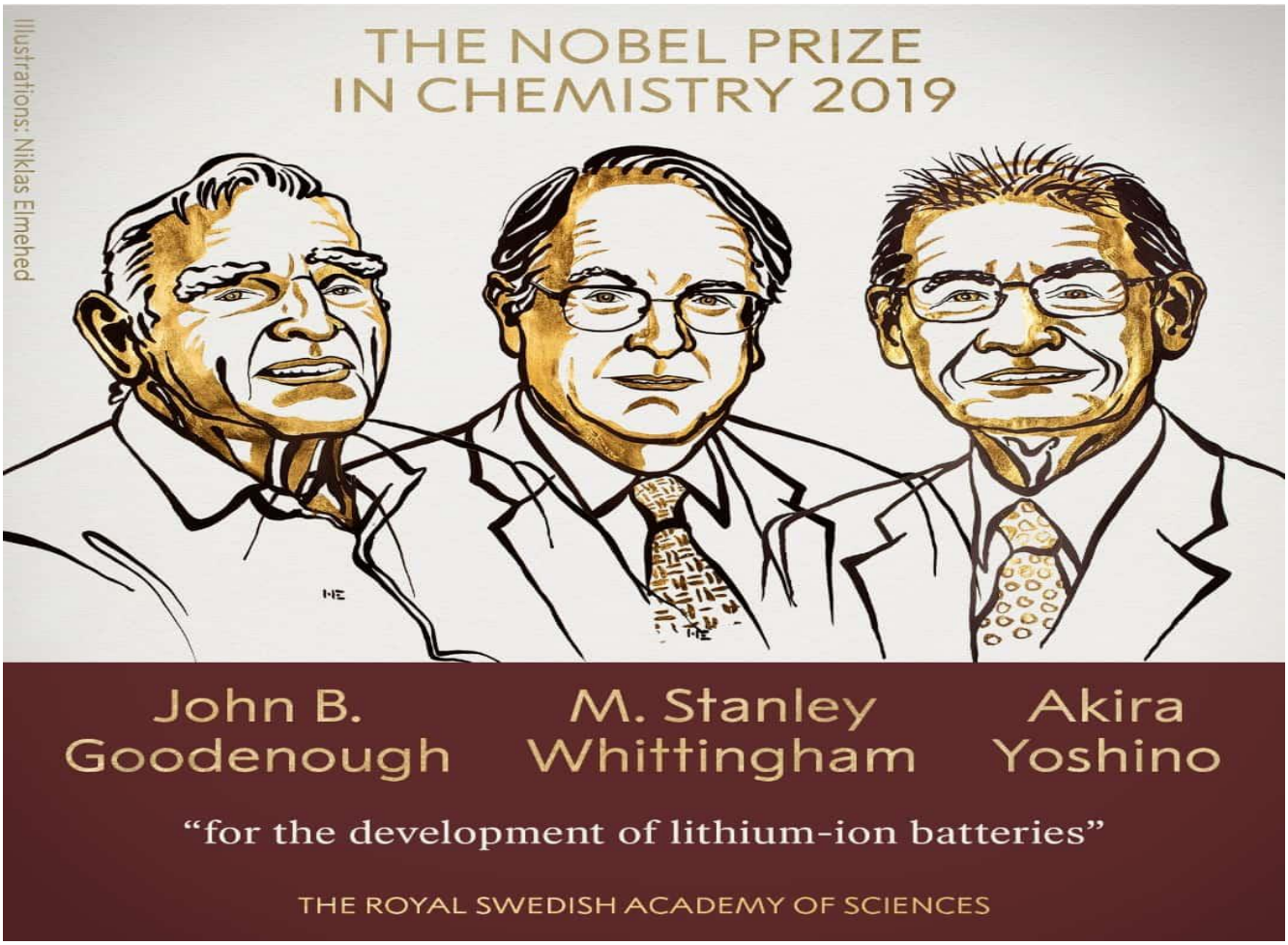
Tagore Auditoriu
Osmania University Campus, Hyderabad



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II. CURRICULUM*:*

The curriculum of the Chemistry for Designed and develop inserts and attitudes, understanding and study skill, to faster all-round and development of the students.The institutional goals achieving communication skills, future plans, ambitions, power, goal setting, good performance and high percentage of results are taken care of while framing the syllabi. Students of Chemistry can compete for the all scientific and industrial research other competitive Examinations successfully. In Fact Chemistry is one of the popular subject Chosen by students of all (P.G, all chemisty combinations M.phil. p.hd.,B.Ed, T.T.C) While competing in the Telangana State Public Service Commission (Group-1,2,3,4),Civil services, and All India services (IAS. IPS, IFS). The study of chemistry trains many of the mental faculties such has critical thinking, memory and imagination motivation from the more practical side and it was climbed that could produce able statesmen and intelligent and use full hereditary of Indian culture. The above objective can he achieved in farming the curriculum of Chemistry. From 2012 to 2013 the department followed the syllabus which was designed by the Osmania University. From 1993 we have been following common core syllabus introduced by the Govt. of A.P. the department strictly follow to academic schedule of the O.U. Hyderabad. Beside the syllabus completion the faculty tries to enlighten the students with recent trends and development in the subject. The department maintains academic records such as attendance registers of the students, teaching diary, teaching schedules, and synapses of the syllabus. The department prepares annual academic plan with class from seminars and assignments.

CURRICULAR ACTIVITIES DEPARTMENTAL OBJECTIVES:

1) To guide the students in all competitive examinations in which our subject is much of importance.
2) To develop social and democratic approach and attitude in the students.
3) To develop cultural awareness and character building among the students.
4) To develop social and cultural, national, unity and integrity.
5) To create awareness among the students about the society such as Dowry system and child marriages, caste system, cultural awareness. Hereditary.
6) To create self confidence among the students.
7) To educate the students to see that they should bring up their children as patriots in future.

1.Teaching, Learning and Evaluation: Teaching Methods and Practices:

1) The faculty members prepare and submit annual academic plans to the principal at the beginning of every academic year. The faculty members are regular in maintaining academic records, such as teaching diary and teaching notes with Synopsis is of the lessons. These two academic records are submitted to the principal. In the first week of every month.
2) Whenever and where ever necessary, the traditional method of lecturing is supplemented by study supervision, team teaching, methods, charts, Field trips.
3) Class seminars are conducted where in academically advanced learning are encouraged to discuss the topics for the benefit of all the students of the class. Seminars for students are conducted in the following topics during the current academic year.
4) Quiz programme are also conducted to sharpen memory of the students. Three Quiz programmes are conducted.
5) The questions Banks are collected and model question papers are prepared for the benefit of the students in the examinations.

2. OUR FACULTY:

S. No.	Name of the Faculty	Education Qualification	Designation	Teaching Experience
1.	Dr. B. Venkateswarlu	M.Sc, PhD	Asst. Professor of Chemistry	31 Years

3. ALL OUR COMBINATIONS:

- UG CBCS, B.Sc (T/M & E/M)
- B.ScM.P.C (Maths, Physics, Chemistry) T/M & E/M
  - BSCM.C.CS (Maths, Chemistry, Computer Science) E/M
  - BSCB.Z.C (Botany, Zoology,Chemistry) T/M & E/M
  - Two Optional with Mooc's Subjects
    (a) Psychology (Mooc's)
    (b) Sociology (Mooc's)
    (c) Geography (Mooc's)
    (d) Anthropology (Mooc's)

III. SYLLABUS & PROGRAMME OUTCOME:

The college is affiliated to Mahatma Gandhi University, Nalgonda. Hence common core syllabys prescribed by the university is followed. The paper wise particulars are as follows.

B.Sc. (2016 NOVEMBER TO TILL TODAY)

B.Sc. Ist Year	B.Sc. IInd Year	B.Sc. IIIrd Year	
SEM-I **Paper – I** Chemistry Unit 1- InOrganic Unit 2- Organic Unit 3- Physical Unit 4- General **SEM-II Paper – II** Chemistry Unit 1- InOrganic Unit 2- Organic Unit 3- Physical Unit 4- General	**SEM III** **Paper – III** Chemistry Unit 1- InOrganic Unit 2- Organic Unit 3- Physical Unit 4- General **SEM IV Paper – IV** Chemistry Unit 1- InOrganic Unit 2- Organic Unit 3- Physical Unit 4- General	**SEM V** **Paper – V** Chemistry Unit 1- InOrganic Unit 2- Organic Unit 3- Physical Unit 4- General **Paper – VI(A)** **(ELECTIVE)** **A)** **B)** **C)**	**SEM VI** **Paper – VII** Chemistry Unit 1- InOrganic Unit 2- Organic Unit 3- Physical Unit 4- Genera **PaperVIII** **(Elective)** **A)** **B)** **C)**

DEPARTMENT OF CHEMISTRY

MAHATMA GANDHI UNIVERSITY-NALGONDA, B.Sc.Chemistry, 2016-17

YEAR	SEM	PAPER TITLE WITH CODE	HRS/PER WEEK	CREDITS	MARKS
FIRST	FIRST	Th: paper I: chemistry I	4	4	100
		Lab: paper I : Qualitative analysis I	2	1	50
	SECOND	Th: paper II: Chemistry II	4	4	100
		Lab: p- II: Qualitative analysis II	2	1	50
SECOND	THIRD	Th: paper III : chemistry III	4	4	100
		Lab: paper III : Quantitative analysis I	2	1	50
	FOURTH	Th: paper IV: Chemistry IV	4	4	100
		Lab: paper IV : Quantitative analysis II	2	1	50
THIRD	FIFTH	Th: paper V : chemistry V	3	3	100
		Lab: paper V :org chem.(chem551)	2	1	50
		Th: paper VI : Theory Paper A/B/C (Electives)	3	3	100
		Lab: paper VI :phy chem.(chem. 552)	2	1	50
	SIXTH	Th: paper VII: chemistry VI	3	3	100
		Lab: Paper-VII (Organic) (Chem 651)	2	1	50
		Th: paper VIII: Theory Paper A/B/C (Electives)	3	3	100
		Lab: Paper- VIII (Physical) (Chem 652**)**	2	1	50

B.Sc I yr CHEMISTRY
SEMESTER WISE SYLLABUS

SEMESTER- I

Paper – I
Chemistry - I

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

S1-I-1. S-block elements: 2h

General Characteristics of groups I and II elements, Diagonal relationship between Li and Mg, Be and Al

S1-I-2. P-block elements 1: 7 h

Group–13: Synthesis and structure of diborane and higher Boranes (B_4H_{10} and B_5H_9), Boron nitrogen compounds ($B_3N_3H_6$ and BN), Lewis acid nature of BX_3
Group – 14: Carbides-Classification – ionic, covalent, interstitial – synthesis. Structures and reactivity. Industrial application. Silicones – Preapartion – a) direct silicon process b) use of Grignard reagent c) aromatic silylation. Classification – straight chain, cyclic and cross-linked.
Group – 15: Nitrides – Classification – ionic, covalent and interstitial. Reactivity – hydrolysis. Preparation and reactions of hydrazine, hydroxyl amine, phosphazenes.

S1-I-3. General Principles of Inorganic qualitative analysis 6 h
Anion analysis: Theory of sodium carbonate extract, classification and reactions of anions-CO_3^{2-}, Cl^-, Br^-, SO_4^{2-}, PO_4^{3-}, BO_3^{3-}, CH_3COO^-, NO_3^-.
Cation Analysis: Principles involved - Solubility product, common ion effect, general discussion for the separation and identification of group I individual cations (Hg_2^{2+}, Ag+, Pb+) with flow chart and chemical equations. Principle involved in separation of group II & IV cations.
General discussion for the separation and identification of group II (Hg^{2+}, Pb^{2+}, Bi^{3+}, Cd^{2+}, Sb^{2+}), III (Al^{3+}, Fe^{3+}), IV ((Mn^{2+}, Zn^{2+}) individual cations with flow chart and chemical equations. Application of concept of hydrolysis in group V cation analysis. General discussion for the separation and identification of group V individual cations (Ba^{2+}, Sr^{2+}, Ca^{2+}) with flow chart and chemical equations. Theory of flame test. Identification of Group VI cations (Mg^{2+}, NH_4^+).

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

S1-O-1: Structural Theory in Organic Chemistry 6 h
Bond polarization: Factors influencing the polarization of covalent bonds, electro negativity – inductive effect. Application of inductive effect (a) Basicity of amines (b) Acidity of carboxylic acids (c) Stability of carbonium ions. Resonance - Mesomeric effect, application to (a) acidity of phenol. (b) acidity of carboxylic acids and basicity of anilines. Stability of carbo cations, carbanions and free radicals. Hyper conjugation and its application to stability of carbonium ions, Free radicals and alkenes.
Types of organic reactions: Addition reactions- electrophilic, nucleophilic and free radical. Substitution reactions – electrophilic, nucleophilic and free radical. Elimination and Rearrangement reactions– Examples.

S1-O-2: Acyclic Hydrocarbons **6 h**

Alkanes – Methods of preparation: Corey-House reaction, Wurtz reaction, from Grignard reagent, Kolbe synthesis. Chemical reactivity - inert nature, free radical substitution, Halogenation example- reactivity, selectivity and orientation.

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: Addition of Hydrogen – heat of hydrogenation and stability of alkenes. trans-addition of halogen and its mechanism. Addition of HX, Markonikov's rule, addition of H_2O, HOX, H_2SO_4 with mechanism and addition of HBr in the presence of peroxide (anti – Markonikov's addition). Oxidation (cis – additions) – hydroxylation by $KMnO_4$, OsO_4, trans addition- peracids (via epoxidation), hydroboration, ozonolysis – location of double bond. Dienes – Types of dienes, reactions of conjugated dienes – 1,2 and 1,4 addition of HBr to 1,3 – butadiene and Diels – Alder reaction.

Alkynes – Preparation by dehydrohalogenation of vicinal dihalides, dehalogenation of tetrahalides. Physical Properties: Acidity of terminal alkynes (formation of metal acetylides) preparation of higher alkynes, Chemical reactivity – electrophilic addition of X_2, HX, H_2O (tautomerism), Oxidation (formation of enediol, 1,2 diones and carboxylic acids) and reduction (Metal-ammonia reduction, catalytic hydrogenation)

S1-O-3: Alicyclic Hydrocarbons **3 h**

Nomenclature, preapartion by Freunds method, Dickmann, heating dicarboxylic metal salts. Properties – reactivity of cyclo propane and cyclo butane by comparing with alkanes. Stability of cycloalkanes – Baeyer strain theory, Sachse and Mohr predictions and Pitzer strain theory. Conformational structures of cyclopentane, cyclohexane.

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

S1-P-1: Atomic structure and elementary quantum mechanics **6 h**

Black body radiation, heat capacities of solids, Rayleigh Jeans law, Planck's radiation law, photoelectric effect, Limitations of classical mechanics, Compton effect, De Broglie's hypothesis. Heisenberg's uncertainty principle, Schrodinger's wave equation and its importance. Physical interpretation of the wave function, significance of □ and □^{2}, a particle in a box, energy levels, wave functions and probability densities. Schrodinger wave equation for H-atom. Separation of variables, radial and angular functions (only equation), hydrogen like wave functions, quantum numbers and their importance.

S1-P-2: Gaseous State **5 h**

Deviation of real gases from ideal behavior. van der Waals equation of state. Critical phenomenon. PV isotherms of real gases, continuity of state. Andrew's isotherms of CO_2. The van der Waal's equation and critical state. Derivation of relationship between critical constants and van der Waal's constants. The law of corresponding states, reduced equation of states. Joule Thomson effect and inversion temperature of a gas. Liquifaction of gases: i) Linde's method based on Joule Thomson effect ii) Claude's method based on adiabatic expansion of a ga

S1-P-3: Liquid State **4 h**

Intermolecular forces, structure of liquids (qualitative description). Structural differences between solids, liquids and gases. Surface tension and its determination using stalagmometer. Viscosity of a liquid and determination of coefficient of viscosity using Ostwald viscometer. Effect of temperature on surface tension and coefficient of viscosity of a liquid (qualitative treatment only). Liquid crystals, the mesomorphic state: Classification of liquid crystals in to Smectic and Nematic, differences between liquid crystal and solid / liquid. Application of liquid crystals as LCD devices.

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

S1-G-1 Chemical Bonding **11 h**

Ionic solids- lattice and solvation energy, solubility of ionic solids, Fajan's rule, polarity and polarizability of ions, covalent nature of ionic bond, covalent bond - Common hybridization and shapes of molecules.

Molecular orbital theory: Shapes and sign convention of atomic orbitals. Modes of overlapping. Concept of σ and π bonds. Criteria for orbital overlap. LCAO concept. Types of molecular orbitals- bonding, antibonding and non bonding. MOED of homonuclear diatomics – H_2, N_2, O_2, O_2^-, O_2^{2-}, F_2 (unhybridized diagrams only) and heteronuclear diatomics CO, CN^- NO, NO^+ and HF. Bond order, stability and magnetic properties.

S1-G-2 Evaluation of analytical data **4 h**

Significant figures, accuracy and precision. Errors-classification of errors- determinate and indeterminate errors, absolute and relative errors, propagation of errors in mathematical operations – addition, substraction, division and multiplication (with respect to determinate errors.

Laboratory Course **45h (3 h / week)**

Paper I Qualitative Analysis - I

I. Preparations:

1. Tetrammine copper (II) sulphate,
2. Potash alum $KAl(SO_4)_2.\ 12H_2O$,
3. Bis (dimethylglyoximato) nickel(II)

II. Analysis of two anions (one simple and one interferi

References:

Unit- I 1.Principles of Inorganic Chemistry by Puri, Sharma and Kalia Vishal Publications 1996

Unit- II 1.Text book of organic chemistry by Morrison and Boyd.
2.Text book of organic chemistry by Graham Solomons.

Unit III 1.Principles of physical chemistry by Prutton and Marron.
2.Text Book of Physical Chemistry by Soni and Dharmahara

Unit IV 1.Principles of Inorganic Chemistry by PuSharmaandKaliaVishalPublications1996
2.Concise Inorganic Chemistry by J.D. Lee 3rd Edition

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

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

S2-I-1 p-block Elements –II 7 h

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

Oxy acids: Structure and acidic nature of oxyacids of B, C, N, P, S and Cl. Redox properties of oxyacids of Nitrogen: HNO_2 (reaction with $FeSO_4$, $KMnO_4$, $K_2Cr_2O_7$), HNO_3 (reaction with H_2S, Cu), HNO_4 (reaction with KBr, Aniline), $H_2N_2O_2$ (reaction with $KMnO_4$). Redox properties of oxyacids of Potasium: H_3PO_2 (reaction with $HgCl_2$), H_3PO_3 (reaction with $AgNO_3$, $CuSO_4$). 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, $FeSO_4$), $H_2S_2O_8$ (reaction with $FeSO_4$, KI)

Interhalogens - classification- general preparation- structures of AB,AB_3, AB_5 and AB_7 type and reactivity. Poly halides - definition and structure of ICl_2^-, ICl_4^- and I_3^-. Comparison of Pseudohalogens with halogens.

S2-I-2 Chemistry of Zero group elements 2 h

General preparation, structure, bonding and reactivity of Xenon compounds – Oxides, Halides and Oxy-halides. Clatherate compounds and Anomalous behavior of He (II)

S2-I-3 Chemistry of d-block elements 6 h

Characteristics of d-block elements with special reference to electronic configuration variable valence, ability to form complexes, magnetic properties & catalytic properties. Stability of various oxidation states and SRP Comparative treatment of second and third transition series with their 3d analogues. Study of Ti, Cr and Cu traids. Titanium triad – electronic configuration and reactivity of +3 and +4 states – oxides and halides. Chromium triad – reactivity of +3 and +6 states. Copper triad – reactivity of +1, +2 and +3 states.

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

S2-O-1: Aromatic Hydrocarbons 7 h

Concept of aromaticity – definition, Huckel's rule – application to Benzenoids and Non – Benzenoids (cyclopropenyl cation, cyclopentadienyl anion and tropylium cation).

Preapartions: From acetylene, phenols, benzene carboxylic acids and sulphonic acids

Reactions - General mechanism of electrophilic substitution, mechanism of nitration, sulphonation, and halogenation, Friedel Craft's alkylation (polyalkylation) and acylation. Orientation of aromatic substitution - Definition of ortho, para, and meta directing groups. Ring activating and deactivating groups with examples. Orientation – (i) activating groups: Amino, methoxy and alkyl groups. (ii) Deactivating groups - carboxy, nitro, nitrile, carbonyl and sulphonic acid & halo groups.

S2-O-2: Arenes and Polynuclear Aromatic Hydrocarbons **3 h**

Preparation of alkyl benzenes by Friedel Craft's alkylation, Friedel Craft's acylation followed by reduction, Wurtz-Fittig reaction. Chemical reactivity: Ring substitution reactions,side chain substitution reactions and oxidation.

Polynuclear hydrocarbons – Structure of naphthalene and anthracene (Molecular Orbital diagram and resonance energy) Reactivity towards electrophilic substitution. Nitration and sulphonation as examples.

S2-O-3: Halogen compounds **5 h**

Nomenclature and classification: alkyl (primary, secondary, tertiary), aryl, aralkyl, allyl, vinyl, benzyl. Chemical reactivity - reduction, formation of RMgX, Nucleophilic substitution reactions – classification into S_N1 and S_N2. Mechanism and energy profile diagrams of 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 alkyl halide. Structure and reactivity – Ease hydrolysis - comparison of alkyl, vinyl, allyl, aryl, and benzyl halides.

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

S2-P-1: Solutions **5 h**

Liquid - liquid mixtures, ideal liquid mixtures**,** Raoult's and Henry's laws. Non ideal systems. Azeotropes HCl-H_2O and C_2H_5OH - H_2O systems. Fractional distillation,. Partially miscible liquids- Phenol – Water, Trimethyl amine – Water and Nicotine –Water systems. Lower upper consolute temperatures. Effect of impurity on consolute temperature. Immiscible liquids and steam distillation. Nernst distribution law. Calculation of the partition coefficient. Applications of distribution law with solvent extraction.

S2-P-2: Dilute Solutions & Colligative Properties **5 h**

Dilute Solutions, Colligative Properties, Raoult's law, relative lowering of vapour pressure, molecular weight determination. Osmosis - laws of osmotic pressure, its measurement, determination of molecular weight from osmotic pressure. Elevation of boiling point and depression of freezing point. Derivation of relation between molecular weight and elevation in boiling point and depression in freezing point. Experimental methods for determining various colligative properties. Abnormal molar mass, Van't hoff factor, degree of dissociation and assocoation of solutes.

S2-P-3: Solid state Chemistry **5 h**

Laws of Crystallography – (i) Law of Constancy of interfacial angles (ii) Law of Symmetry, Symmetry elements in crystals (iii) Law of rationality of indices. Definition of space lattice, unit cell. Bravais Lattices and Seven Crystal systems (a brief review). X-ray diffraction by crystals; Derivation of Bragg's equation, Determination of structure of NaCl, KCl & CsCl (Bragg's method and Powder method).

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

S2-G-1: Theory of Quantitative Analysis **5 h**

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

Gravimetric analysis- Introduction, nucleation, precipitation, growth of precipitate, filtration and washing, drying and incineration of precipitate, coprecipitation and post precipitation. Determination of Ni^{2+}

S3-G-2: Theories of bonding in metals: 5 h

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.

S2-G-3: Material Science 5 h

Classification of materials- classification as metals, ceramics, organic polymers, composites, biological materials etc. The property of super conductivity of materials.
Super conducting materials- elements, alloys and compounds. Properties of super conductors- zero resistivity, Meisener effect and thermal properties. Composites- meaning of composites, advanced composites, classification –particle rein forced fiber reinforced and structural composites general characters of composite materials-Particle- reinforced composites – large particle and dispersion- strengthened composite. Fiber reinforced composites (continuous and discontinuousfibercomposites

Laboratory Course 45hrs (3 h / week)

Paper II - Qualitative Analysis - II

I Semi micro analysis of mixtures

Analysis of two anions and two cations in the given mixture.

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+}
Pb^{2+}, Bi^{3+} , Cd^{2+}, Cu^{2+}, $As^{3+/5+}$, $Sb^{3+/5+}$, $Sn^{2+/4+}$
Al^{3+}, Cr^{3+}, Fe^{3+}
Zn^{2+}, Ni^{2+}, Co^{2+}, Mn^{2+}
Ca^{2+}, Sr^{2+}, Ba^{2+}
Mg^{2+}, NH_4^+

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

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

S3-I-1: Chemistry of f-block elements: 6 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: Symmetry of molecules 5 h

Symmetry operations and symmetry elements in molecules. Definition of Axis of symmetry types of C_n, Plane of symmetry (σh, σv, σd) Center of symmetry and improper rotational axis of symmetry (S_n). Explanation with examples.

S3-I-3: Non – aqueous solvents 4 h

Classification and characteristics of a solvent. Reactions in liquid ammonia – physical properties, auto-ionisation, examples of ammono acids and ammono bases. Reactions in liquid ammonia – precipitation, neutralization, solvolysis, solvation - solutions of metals in ammonia, complex formation, redox reactions. Reactions in HF – autoionisation, reactions in HF – precipitation, acid – base reactions, protonation.

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

S3-O-1: Alcohols 6 h

Preaparation: 1°, 2° and 3° alchols using Griganard reagent, Ester hydrolysis, Reduction of Carbonyl compounds, carboxylic acids and esters. Physical properties: H-bonding, Boiling point and Solubility. Reactions with Sodium, HX/$ZnCl_2$ (Lucas reagent), esterification, oxidation with PCC, alk. $KMnO_4$, acidic dichromates, conc. HNO_3 and Oppenauer oxidation.
Diols: Pinacol - pinacolone rearrangement
Phenols: Preapartion: (i) from diazonium salts of anilines, (ii) from benzene sulphonic acids and (iii) Cumene hydroperoxide method.
Properties: Acidic nature, formation of phenoxide and reaction with R-X, electrophilic substitution nitration, halogenation and sulphonation. Riemer Tiemann reaction, Gattermann-Koch reaction, Azo-coupling reaction, Schotton-Boumann raction, Houben-Hoesch condensation, $FeCl_3$ reaction.

S3-O-2: Ethers and epoxides 2 h

Nomenclature, preparation by (a) Williamson's synthesis (b) from alkenes by the action of conc. H_2SO_4. Physical properties – Absence of Hydrogen bonding, insoluble in water, low boiling point. Chemical properties – inert nature, action of conc. H_2SO_4 and HI.

S3-O-3 Carbonyl compounds 7 h

Nomenclature of aliphatic and aromatic carbonyl compounds and isomerism.
Praparation of aldehydes & ketones from acid chloride, 1,3-dithianes, nitriles and from

carboxylic acids. Special methods of preparing aromatic aldehydes and ketones by (a) Oxidation of arenes (b) Hydrolysis of benzal halides Physical properties – absence of Hydrogen bonding. Keto-enol tautomerism, polarisability of carbonyl groups, reactivity of the carbonyl groups in aldehydes and ketones. Chemical reactivity: Addition of [a] $NaHSO_3$ (b) HCN (c) RMgX (d) NH_3 (e) RNH_2 (f) NH_2OH(g) $PhNHNH_2$ (h) 2,4DNP (Schiff bases). Addition of H_2O to form hydrate (unstable), comparison with chloral hydrate (stable), addition of alcohols - hemi acetal and acetal formation. Base catalysed reactions with mechanism- Aldol, Cannizaro reaction, Perkin reaction, Benzoin condensation, haloform reaction, Knoevengeal condensation. Oxidation reactions –$KMnO_4$ oxidation and auto oxidation, reduction – catalytic hydrogenation, Clemmenson's reduction, Wolf- kishner reduction, Meerwein Pondoff Verly reduction, reduction with LAH, $NaBH_4$. Analysis – 2,4 –DNP test, Tollen's test, Fehlings test, Scihff's test, haloform test (with equations).

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UNIT – III (Physical Chemistry) **15 hr (1h / week)**

S3-P-1: 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.

S3-P-2: Colloids & surface chemistry **9 h**

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

Micelles: Classification of surface active agents. Surfactant action, micellization and micellar interactions, Structure of micelles – spherical and laminar. Critical micellar concentration (CMC). Factors affecting the CMC of surfactants. Counter ion binding to micelles.

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

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

S3-G-1: Nanomaterials: **3 h**

Nano structured materials – Definition, size, description of graphene, fullerenes, carbon nano tubes. Synthetic techniques, bottom-up-sol-gel method, top-down, electro deposition method. Production of carbon nano tubes – arc discharge, laser vaporization methods. General applications of nano materials.

S3-G-2: Stereochemistry of carbon compounds **10 h**

Isomerism: Definition of isomers. Classification of isomers: Constitutional and Stereoisomers - definition and examples. Constitutional isomers: chain, functional and positional isomers. Stereoisomers: enantiomers and diastereomers – definitions and examples.

Optical activity: Definition, wave nature of light, plane polarised light, optical rotation and specific rotation, chiral centers. Chiral molecules: definition and criteria - absence of plane, center and S_n axis of symmetry – asymmetric and dissymmetric molecules. Examples of asymmetric molecules (Glyceraldehyde, Lactic acid, Alanine) and disymmetric molecules (trans-

1,2-dichlorocyclopropane). Molecules with constitutionally symmetrical chiral carbons (Tartaric acid) Molecules with constitutionally unsymmetrical chiral carbons (2,3-dibromopentane) Number of enantiomers and mesomers - calculation. D, L &, R, S configuration for asymmetric and disymmetric molecules (Allenes, spiro compounds and biphenyls), Cahn-Ingold-Prelog rules. Racemic mixture, Racemisation and Resolution techniques. Geometrical isomerism with reference to alkenes and cyclo alkanes– cis, trans and E, Z configuration.

S3-G-3: Conformational analysis **2 h**

Classification of stereoisomers based on energy. Definition and examples of conformational and configurational isomers. Conformational analysis of ethane, n-butane, 1,2-dichloroethane,2-chloroethanol and methylcyclohexane

Laboratory Course

Paper III - Quantitative Analysis - I **45hrs (3 h / week)**

Acid - Base titrations

1. Estimation of Carbonate in Washing Soda.
2. Estimation of Bicarbonate in Baking Soda.
3. Estimation of Carbonate and Bicarbonate in the Mixture.
4. Estimation of Alkali content in Antacid using HCl.

Redox Titrations

1. Determination of Fe(II) using $K_2Cr_2O_7$
2. Determination of Fe(II) using $KMnO_4$ with sodium oxalate as primary standard.

Determination of Cu(II) using $Na_2S_2O_3$ with $K_2Cr_2O_7$ as primary standard.

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

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

S4-I-1: Coordination Compounds-I 7 h

Simple inorganic molecules and coordination complexes. Nomenclature – IUPAC rules, 1. 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). 2. Coordination number, coordination geometries of metal ions, types of ligands. 3. Isomerism in coordination compounds, stereo isomerism – (a) geometrical isomerism in (i) square planar metal 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.

S4-I-2:Organometallic Chemistry 4 h

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

S4-I-3: Metal carbonyls and related compounds 4 h

18 valence electron rule, classification of metal carbonyls: $Ni(CO)_4$, $Fe(CO)_5$, $Fe_2(CO)_9$, $Fe_3(CO)_{12}$ and $Cr(CO)_6$, Preparation and properties of Ni(CO)4.

UNIT - II (Organic chemistry) 15 h (1 hr/week)

S4-O-1: Carboxylic acids and derivatives 6 h

Nomenclature, classification and methods of preparation a) Hydrolysis of Nitriles, amides and esters. b) Carbonation of Grignard reagents. Special methods of preparation of Aromatic Acids. Oxidation of the side chain of Arenes. Hydrolysis of benzotrichlorides. Kolbe reaction. Physical properties- hydrogen bonding, dimeric association, acidity – strength of acids with the examples of trimethyl acetic acid and trichloro acetic acid, Relative differences in the acidity of Aromatic, aliphatic acids & phenols. 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 – Reactions of acid halides, Acid anhydrides, acid amides and esters (mechanism of ester hydrolysis by base and acid).

S4-O-2: Synthesis based on Carbanions **3 h**

Acidity of □-Hydrogens of withdrawing groups, structure of carbanion. Preparation of Aceto acetic ester (ethylacetoester) by Claisen condensation and synthetic application of Aceto acetic ester. (a) Acid hydrolysis and ketonic hydrolysis: Butanone, 3-Methyl 2-butanone. Preparation of (i) monocarboxylic acids ii) dicarboxylic acids (b) malonic ester – synthetic applications. Preparation of (i) substituted mono carboxylic acids and (ii) substituted dicarboxylic acids.

S4-O-3 Nitro hydrocarbons: **6 h**

Nomenclature and classification of nitro hydrocarbons. Structure. Tautomerism of nitroalkanes leading to aci and keto form. Preparation of Nitroalkanes. Reactivity - halogenation, reaction with HNO_2 (Nitrous acid), Nef reaction, Mannich reaction, Michael addition and reduction. Aromatic Nitro hydrocarbons: Nomenclature, Preparation of Nitrobenzene by Nitration. Physical properties, chemical reactivity – orientation of electrophilic substitution on nitrobenzene. Reduction reaction of Nitrobenzenes in different media.

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

S4-P-1: Electrochemistry & EMF **15 h**

Electrical transport – conduction in metals and in electrolyte solutions, specific conductance and equivalent conductance, measurement of equivalent conductance, variation of specific and equivalent conductance with dilution. Migration of ions and Kholrausch's law, Arrhenius theory of electrolyte dissociation and its limitations, weak and strong electrolytes, Ostwald's dilution law, its uses and limitations. Debye-Huckel-Onsagar's equation for strong electrolytes (elementary treatment only). Transport number, definition and determination by Hittorf's method for attackable electrodes. Applications of conductivity measurements: Determination of degree of dissociation, determination of K_a of acids, determination of solubility product of a sparingly soluble salt, conductometric titrations.

Electrolyte and Galvanic cells – reversible and irreversible cells, conventional representation of electrochemical cells. EMF of a cell and its measurement. Computation of EMF. Types of reversible electrodes- the gas electrode, metal-metal ion, metal-insoluble salt and redox electrodes. Electrode reactions, Nernst equation, cell EMF and single electrode potential, standard Hydrogen electrode – reference electrodes (calamel electrode) – standard electrode potential, sign conventions, electrochemical series and its significance.

Applications of EMF measurements, Calculation of thermodynamic quantities of cell reactions (□G, □H and K). Determination of pH using hydrogen electrode, glass electrode and quinhydrone electrode, Solubility product of AgCl. Potentiometric titrations.

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

S4-G-1: Pericyclic Reactions **5 h**

Concerted reactions, Molecular orbitals of ethene, 1,3-butadiene and allyl radical. Symmetry properties, HOMO, LUMO, Thermal and photochemical pericyclic reactions. Types of pericyclic reactions – electrocyclic, cycloaddition and sigmatropic reactions – one example each and their explanation by FMO theory.

S4-G-2: Synthetic Strategies **5 h**

Terminology – Target molecule (TM), Disconnection approach – Retrosynthesis, Synthon, Synthetic equivalent (SE), Functional group interconversion (FGI), Linear, Convergent synthesis. Retrosynthetic analysis of the following molecules: 1) acetophenone 2) cyclohexene and 3) phenylethylbromide.

S4-G-3: **Asymmetric synthesis** **5 h**

Definition and classification of stereoslective reactions: substrate, product stereoselective reactions, enantio and diastereo selective reactions. Stereospecific reaction – definition – example – dehalogenation of 1,2-dibromides induced by iodide ion. Enantoselective reactions – definition – example –Reduction of Ethylacetoacetate by Yeast. Diastereoselective reaction- definition- example: Acid catalysed dehydration of 1-phenylproponal and Grignard addition to 2- phenyl propanal. Definition and explanation of enantiomeric excess and diastereomeric excess.

Laboratory Course

Paper IV - Quantitative Analysis - II **45hrs (3h/ week)**

1. Conductometry titrations:
   i) Strong acid Vs Strong base;
   ii) Weak acid Vs Strong base.
2. Potentiometry titration:
   i) Strong acid Vs Strong base;
   ii) Weak acid Vs Strong base.
3. Estimation of Nickel by back titration (Standard $MgSO_4$ solution will be given)

Estimation of Barium as Barium Sulphate

B.Sc III yr CHEMISTRY
SEMESTER WISE SYLLABUS
SEMESTER V
Paper-V
Chemistry -V

Unit-I (Inorganic Chemistry) **11 h**

S5-I-1: Coordination compounds –II **9 h**

Crystal field theory (CFT)- Postulates of CFT, splitting patterns of d-orbitals in octahedral, tetrahedral, square planer with suitable examples. Crystalfield stabilization energies and its calculations for various d^n configurations in octahedral complexes. High Spin Low Spin complexes.

Magnetic properties of transition metal complexes- para, dia, ferro , anti ferromagnetic properties, determination of magnetic susceptibility (Guoy method), spin only formula, calculations of magnetic moments.

Electronic spectra of metal complexes – colour of transtion metal aqua complexes– d-d transitions.Detection of complex formation - basic principles of various methods- change in chemical properties, solubility, colour, pH, conductivity, magnetic susceptibility.

Thermodynamic and kinetic stability of transition of metal complexes . Stability of metal complexes –stepwise and overall stability constant andf their relationship.Factors effecting the stability constants. 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 .

S5-I-2: Boranes and Carboranes: **2 h**

Definition of clusters. Structures of boranes and carboranes- Wade's rules, closo, nido arachno Boranes and carboranes.

Unit-II (Organic Chemistry) 11 h

S5-O-1: Amines, Cyanides and Isocyanides 7 h

Amines:

Nomenclature, classification into 1^0, 2^0, 3^0 Amines and Quarternary ammonium compounds. Preparative methods – 1. Ammonolysis of alkyl halides 2. Gabriel synthesis 3. Hoffman's bromamide reaction (mechanism). Reduction of Amides and Schmidt reaction. Physical properties and basic character – Comparative basic strength of Ammonia, methyl amine, dimethyl amine, trimethyl amine and aniline- comparative basic strength of aniline, N-methylaniline and N,N- dimethyl aniline (in aqueous and non- aqueous medium), steric effects and substituent effects. Use of amine salts as phase transfer catalysts. 4. Chemical Properties: a) Alkylation b) Acylation c) Carbylamine reaction d) Hinsberg separation. 5. Reaction with Nitrous acid of 1^0, 2^0, 3^0 (Aliphatic and aromatic amines). Electophilic substitutions of

Aromatic amines – Bromination and Nitration, oxidation of aryl and 3^0 Amines, diazotisation.

6. 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:

Nomenclature (aliphatic and aromatic) structure. Preparation of cyanides from a) Alkyl halides b) from amides c) from aldoximes. Preparation of isocyanides from Alkyl halides and Amines.

2. Properties of cyanides and isocyanides, a)hydrolysis b) addition of Grignard reagent iii) reduction iv) oxidation.

S5-O-2: Heterocyclic Compounds 4 h

Introduction and definition: Simple 5 membered ring compounds with one hetero atom Ex. Furan. Thiophene and pyrrole. Importance of ring systems – presence in important natural products like hemoglobin and chlorophyll. Numbering the ring systems as per Greek letter and Numbers. Aromatic character – 6- electron system (four-electrons from two double bonds and a pair of non-bonded electrons from the hetero atom). Tendency to undergo substitution reactions. Resonance structures: Indicating electron surplus carbons and electron deficient hetero atom. Explanation of feebly acidic character of pyrrol, electrophillic substitution at 2 or 5 position, Halogenation, Nitration and Sulphonation under mild conditions. 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 from 1,4,- dicarbonyl compounds only, Paul-Knorr synthesis, structure of pyridine, Basicity – Aromaticity – Comparison with pyrrole – one method of preparation and properties – Reactivity towards Nucleophilic substitution reaction – chichibabin reaction.

Unit-III(Physical Chemistry)

S5-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 reaction.

First order reaction, derivation of equation for rate constant. Characteristics of first order reaction. Units for rate constant. Half- life period, graph of 1^{st} order reaction, examples. Decomposition of H_2O_2 and decomposition of oxalic acid.

Pseudo first order reaction, Hydrolysis of methyl acetate, inversion of cane sugar, problems.

Second order reaction, derivation of expression for 2^{nd} order rate constant, examples- Saponification of ester, $2O_3$ ---□ $3O_2$, $C_2H_4 + H_2$ -------.> C_2H_6. characteristics of second order reaction, units for rate constants, half- life period and second order plots.

Zero order reaction: derivation of rate expression, examples i)combination of H_2 and Cl_2 to form HCl, ii) thermal decomposition of HI on gold surface characteristics of Zero order reaction units of k, half-life period and graph, problems.

Determination of order of reaction: i) method of integration, ii) half life method, iii) vant-Hoff differential method iv) Ostwald's isolation method. Problems Kinetics of complex reactions (first order only): opposing reactions, parallel reactions, consecutive reactions and chain reactions. Problems. Effect of temperature on reaction rate, Arrhenius equation. Temperature coefficient. Concept of energy of activation, determination of energy of activation from Arrhenius equation and by graphical method, problems. Simple collision theory based on hard sphere model explanation of frequency factor, orientation or steric factor. The transition state theory (elementary treatment).

Unit-IV (General Chemistry) 12 h
S5-G-2: Molecular spectroscopy 8 h

Introduction to electromagnetic radiation, interaction of electromagnetic rations 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. 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 antibonding molecular orbitals, electronic energy levels of molecules (σ, π, n), types of electronic transitions: □-□*, n-□*, n-□*, □-□* 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.

S5-G-3: Photochemistry 4 h
Introduction to photochemical reactions, Difference between thermal and photochemical reactions, Laws of photo chemistry- Grotthus - Drapper law, Stark – Einsteins Law of photo chemical 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 absorptions. Singlet and triplet states. Jablonski diagram Explanation of internal conversion, inter- system crossing, Phosphorescence, fluorescence.

References :

Unit- I. 1.Principles of Inorganic Chemistry by Puri, Sharma and Kalia Vishal Publications1996.

2.Concise Inorganic Chemistry by J.D. Lee 3rd edn.

Unit- II 1.Text book of organic chemistry by Soni.
2.General Organic chemistry by Sachin Kumar Ghosh.

Unit III 1.Principles of physical chemistry by Prutton and Marron.
2.Text Book of Physical Chemistry by Soni and Dharmahara..

Unit IV **1.**Bioinorganic Chemistry, M.N.Huges
2.Organic spectroscopy, William Kemp

Laboratory Course:

Paper V(Organic Chemistry) 45 h (3h/w)

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.

1. **Thin layer Chromatography**
   Determination of Rf values and identification of organic compounds: preparation and separation of 2,4-dinitrophenyl hydrazones of acetione and 2-butanone using toluene and light petroleum(40:60)
   Separation of ortho & para nitro aniline mixtures

2. **Microwave assisted synthesis of organic compounds – DEMO (demonstration only)**
3. **Thin layer Chromatography**
   Determination of Rf values and identification of organic compounds: preparation and separation of 2,4-dinitrophenyl hydrazones of acetione and 2-butanone using toluene and light petroleum(40:60)
   Separation of ortho & para nitro aniline mixtures

4. **Microwave assisted synthesis of organic compounds – DEMO (demonstration on)**

B.Sc. Chemistry III Year Semester-V, Paper-VI

Elective- A (3 Credits)

Instrumental Methods of Analysis 45Hrs

Unit I: Chromatography I 11Hrs

S5-E-A-I: 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, development of the chromatogram, Detection of the spots, factors effecting Rf values and applications.

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

Unit II: Chromatography II 11Hrs S5-E-A-I: 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.

Gas Chromatography: Theory and instrumentation (Block Diagram), Types of stationary phases and carrier gases (mobile phase).

High performance liquid chromatography: Theory and instrumentation, stationary phases and mobile phases. Analysis of paracetamol.

Unit III: Colorimetry and Spectrophotometry 12Hrs S5-E-A-III: General features of absorption – spectroscopy, transmittance, absorbance, and molar absorptivity. Beer Lambert's law and its limitations, difference between Colorimetry and Spectrophotometry.

Instruments – Single beam UV- Visible Spectrophotometer, Double beam UV- Visible Spectrophotometer. Lamps used as energy sources. Verification of Beer's law. Estimation of iron in water samples by thiocyanate method. Estimation of (i) Chromium and (ii) Manganese in steel.

IR Spectrophotometer: Principle, Sources of Radiations, Sampling, Block diagram of FT-IR Spectrophotometer.

Unit IV: Electroanalytical methods 11Hrs

S5-E-A-IV: Types of Electroanalytical Methods.

I) Interfacial methods – a) Potentiometry: Principle, Electrochemical cell, Electrodes- (i) Indicator and (ii) Reference electrodes – Normal Hydrogen Electrode, Quinhydrone Electrode, Saturated Calomel Electrode. Numerical Problems. Application of Potentiometry – Assay of Sulphanilamide

b) Voltametry – three electrode assembly; Intoduction to types of voltametric techniques, micro electrodes, Over potential and Polarization.

II) Bulk methods – Conductometry, Conductivity Cell, Specific Conductivity, Equivalent Conductivity. Numerical Problems. Applications of conductometry. Estimation of Cl^- using $AgNO_3$. Determination of Aspirin with KOH.

B.Sc.Chemistry III Year
Semester-V, Paper-VI Elective-B (3 Credits) Industrial Chemistry and Catalysis

Unit I: General Principles of Metallurgy and Production of Non Ferrous Metals 11 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 12Hrs

S5-E-B-II: Classification of dyes. Sources of natural dyes: Indigoid, Anthraquinone, Naphthoquinone, Benzoquinone, Flavonoid, Carotenoid and Tannin-based dyes.
Synthetic Dyes: Acidic, basic, dispersive, direct, reactive and vat dyes with examples. Extraction of natural dyes and their sustainability: The different methods for extraction of coloring materials from natural dyes. Aqueous extraction, alkali or acid extraction, microwave and ultrasonic assisted extraction, fermentation, solvent extraction, super critical fluid extraction. Drying methods. Application of natural dyes on textiles, Mordanting- types of mordanting - metallic mordants, oil mordants, Tannins and Tannic acid. Present scenario and sustainability issues in usage of natural dyes and cost considerations.

Unit III: Catalysis I 11Hrs 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. Effect of P^H 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 11Hrs 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 and (iv) Zymase in conversion of glucose to ethanol. Factors affecting enzyme catalysis. Effect of temperature, pH, concentration and inhibitor on enzyme catalysed reactions.

Kinetics of enzyme catalysed reactions: Michaelis-Menton Equation. Mechanism of enzyme catalysed reactions. Significance of Michaelis constant (K_m) and maximum velocity (V_{max}), Lineweaver-Burk plot.

References

1. E. Stocchi: Industrial Chemistry, Vol-I, Ellis Horwood Ltd. UK.
2. R.M. Felder, R.W. Rousseau: Elementary Principles of Chemical Processes, Wiley Publishers, New Delhi.
3. J. A. Kent: Riegel's Handbook of Industrial Chemistry, CBS Publishers, New Delhi.

4. **Kateřina Skotnicová, Monika Losertová, Miroslav Kursa, Theo**ry of production of non-ferrous metals and alloys Study.
5. K Venkataraman, the Chemistry of Synthetic Dyes, Volume 4, Elsevier, Technology & Engineering.
6. Sujata Saxena and A. S. M. Raja by Natural Dyes: Sources, Chemistry, Application and Sustainability Issues.
7. Physical Chemistry by Atkins and De Paula, 8^{th} Edn.
8. Physical Chemistry by Puri, Sharma and Pattania, 2017.
9. Kinetics and mechanism of chemical transformations by Rajarajm and Kuraiacose, Published by Macmillan India Ltd.
10. Text book of Physical Chemistry by K.L. Kapoor Macmillan, 1999.
11. Catalysis by J.C. Kuriacose, Macmillan Macmillan Publishers India Limited, 1980.

Semester - V
Laboratory Course
Experiments in Physical Chemistry-I

Paper VI (Physical Chemistry) **45hrs (3 h / w)**

1. Distribution law

a) Determination of distribution coefficient of iodine between water and carbon Tetrachloride/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) Determination Of dissociation constant (Ka) Of aceticacid by conductivity measurements.

3. Colorimetry

Verification of Beer's law using $KMnO_4$ and determination of theconcentrationof the given solution.

4.Adsorption

Adsorption of acetic acid on animal charcoal, Verification of Freundlich adsorption isotherm.

5,Physical constants

Surface tension and viscosity of liquids. (Demonstration Experiment)

B.Sc. III yr CHEMISTRY

SEMESTER WISE SYLLABUS SEMESTER VI Paper-VII

Unit-I (Inorganic Chemistry) 11 h

S6-I-1:Inorganic reaction mechanisms 4h

Labile and inert complexes, Thermodynamic and kinetic stability based on VBT & CFT: ligand substitution reactions – S_N1 and S_N2 in Octahedral complexes; substitution reactions of square planar complexes – Trans effect and applications of trans effect.
Reactions of tetrahedral complexes - Hydrolysis of silicon halides and phosphorous oxides.

S6-I-2:Bioinorganic chemistry 5h

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 CO_2 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).

S6-I-3:Hard and soft acids bases (HSAB) 2h

Classification, Pearson's concept of hardness and softness, application of HSAB principles – Stability of compounds / complexes, predicting the feasibility of reaction

UNIT - II (Organic Chemistry) 11 h

S6-O-1: Carbohydrates 6 h

Introduction: Classification and nomenclature – classification into mono, oligo and polysacchrides, into pentoses, hexoses *etc*., into aldoses and ketoses.
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 (Acetylation, reduction to n-hexane, cyanohydrin formation, reduction of Tollen's and Fehling's reagents and oxidation to gluconic and saccharic acids). 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 (some negative aldehyde tests and mutarotation). Cyclic structure of glucose: Proposition of cyclic structure (Pyranose structure, anomeric Carbon and anomers). Proof for the ring size (methylation, hydrolysis and oxidation reactions). Different ways of writing pyranose structure (Haworth formula and chair conformational formula). Structure of fructose: Evidence of 2 – ketohexose structure (formation of penta acetate, formation of cyanohydrin its hydrolysis and reduction by HI to give 2-Carboxy-n-hexane) Same osazone formation from glucose and fructose, Hydrogen bonding in osazones, cyclic structure for fructose (Furanose structure, Haworth formula).

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

S6-O-2 Amino acids and proteins 5 h

Introduction: Definition of Amino Acids, classification of Amino acids into alpha, beta and gama amino acids. Natural and essential amino acids – definition and examples, Classification of alpha amino acids into acidic, basic and neutral amino acids with examples. Methods of synthesis: General methods of synthesis of alpha amino acids (specific examples – Glycine, Alanine, valine and Leucene) 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: L – configuration, irrespective of sign of rotation. Zwitter ion structure – salt like character, solubility, melting points, amphoteric 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 and proteins, peptide synthesis

Unit-III (Physical Chemistry) 11 h

S6-P-1:Thermodynamics -I 11h

A brief review of - Energy, work and heat units, mechanical equivalent of heat, definition of system, surroundings. I law of thermodynamics statement- various forms mathematical expression. Thermodynamic quantities- extensive properties and intensive properties, state function, 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 I law. Heat changes at constant pressure and heat changes at constant volume. Enthalpy. Heat capacities at constant pressure and constant volume. Derivation 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 and 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. Kirchoff's equation and problems. Limitations of I law and need for II law. Statement of II law of thermodynamics. Cyclic process. Heat engine, Carnot's theorem, Carnot's cycle. Derivation of efficiency of heat engine problems. Thermodynamic scale of temperature.

Unit-IV (GENERAL CHEMISTRY) 12 h

S6-G-1: Proton Magnetic Resonance Spectroscopy 4h

Principles of nuclear magnetic resonance, equivalent and non-equivalent protons, position of signals. Chemical shift, 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.

S6-G-2: Mass Spectrometry 4 h

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 weight Mass spectrum of ethyl chloride, ethyl bromide and acetophenone.

S6-G-3: Thermodynamics- II **4 hrs**

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 inert perfect gases. Free energy Gibb's function (G) and Helmholtz's function (A) as thermodynamic quantities. Concept of maximum work and net work ΔG as criteria for spontaneity. Derivation of equation $\Delta G = \Delta H - T\Delta S$. significance of the equation. Gibbs equations and the Maxwell relations. Variation of G with P, V and T.

Laboratory Course Paper VII

Qualitative and Spectral Analysis of Organic Compounds: 45hrs (3 h/w)

Qualitative analysis: Identification of an Organic compound through the functional group analysis, determination of melting points/boiling points, 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.

Spectral analysis Determination of structures from combined spectral data (IR, ^{1}H-NMR and Mass): Minimum of five problems.

III Year Semester-VI, Paper-VIII Elective-A (3 Credits)

Medicinal Chemistry **45Hrs**

Unit- I:Introduction and Terminology **11Hrs**

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

Terminology in Medicinal Chemistry: Drug, Pharmacology, Pharmacophore, Pharmacodyna-mics, 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. **ADME**: 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.

Unit-II: Enzymes and Receptors 11Hrs 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 **12Hrs**

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

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

Drugs to treat metabolic disorders: Anti diabetic - Tolbutamide; Antiinflammatiory – 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 Health Promoting Drugs 11Hrs 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 .

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

Reference books

1. G.L. Patrick: Introduction to Medicinal Chemistry, Oxford University Press, New York.2013
2. Thomas Nogrady, Medicinal Chemistry, Oxford Univ. Press, New York.2005.
3. David William and Thomas Lemke, Foye's Principles of Medicinal Chemistry, Lippincott Williams & Wilkins, 2008.4.Ashutosh Kar Medicinal Chemistry, New Age International, 2005.
5. O.D.Tyagi & M.Yadav Synthetic Drugs by, Anmol Publications,1998.

B.Sc. Chemistry III Year

Semester –VI, Paper-VIII

Elective-B (3 Credits)

Agricultural and Fuel Chemistry **45 Hrs**

Unit I: – Pesticides **12Hrs**

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, technical manufacture and uses of representative pesticides in the following classes: 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 **11Hrs**

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 fertilisers: 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 11Hrs. 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 bases chemicals, requisites of a good metallurgical coke, Coal gasification (Hydro gasification and Catalytic gasification), Coal liquefaction and Solvent Refining.

Unit IV: Petroleum, Petrochemical Industry and Lubricants 11Hrs. S6-E-B-IV: Petroleum and Petrochemical Industry: Composition of crude petroleum, Refining and different types of petroleum products and their applications.

Fractional Distillation - Principle and process, Cracking -Thermal and catalytic cracking, Reforming of Petroleum and non-petroleum fuels (LPG, CNG, LNG, bio-gas, fuels derived from

biomass), fuel from waste, synthetic fuels (gaseous and liquids), clean fuels. Petrochemicals: Vinyl acetate, Propylene oxide, Isoprene and their uses.

Lubricants: Classification of lubricants, Properties and functions of lubricants (viscosity index, cloud point, pour point) and their determination. Lubricating oils (conducting and non-conducting) Solid and semisolid lubricants, synthetic lubricants.

Reference books

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

Semester - VI

LaboratorycourseExperimentsinPhysicalChemistry-II

Paper VIII (Physical Chemistry) 45hrs (3 h/w)

1. Kinetics

a) Determination of specific reaction rate of the hydrolysis of methyl acetate catalyzed by hydrogen ion at room temperature.

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

C.Conductometry:

Determination of overall order: Saponification of ethyl acetate with NaOH by conductance measurements.

DEPARTMENT OF CHEMISTRY

CURRICULUM ASPECTS:

Year	Paper	Subject	Theory Marks	Internal Marks	Total Marks
B.SC. I Year	SEMI P-1	CHEMISTRY-I	80	20	100
B.SC. I Year	SEM-II P-II	CHEMISTRY-II	80	20	100
B.SC II Year	SEM-III P-III	CHEMISTRY-III	80	20	100
B.SC II Year	SEM-IV P-IV	CHEMISTRY-IV	80	20	100
B.SC III Year	SEM-V P-V	CHEMISTRY-V	80	20	100
B.SC III Year	SEM-V P-VI	CHEMISTRY-VI Electives a)Instrumental methodsof analysis b)Industrialcatalysis c)	80	20	100
B.SC III Year	SEM-VI P-VII	CHEMISTRY-VII	80	20	100
B.A. III Year	SEMVI P-VIII	CHEMISTRY-VIII Electives a)Medicinalchemistry b)Agricultura&fuel c)	80	20	100

Programme Outcomes of B.Sc.:

- After graduation with B.Ed. course, student can chose teaching career.
- Graduates can select Lab technisions in the pharma companies, agro products etc. as their career options.
- Eligible to appear for any competitive exams conducted by UPSC, TSPSC, Indian Railway Board, etc., for entering into the government services.

Programme Specific Outcomes:

- The students obtain thorough fundamental knowledge of besic sciences, facts and figures of the past and make the learner take in the essence of that through multidisciplinary approach.
- It inculcates the learners into the intellectual forum through the study of Chemistry.
- It builds a sense of nationalism to enable the student community to face the onslaught of communalism and casteism.
- Employment Areas include, pharna & Chemical industries, UPSC, TSPSC, Research Centre, Preservation departments, Teaching and coaching for compepative examinations.
- Advance Course in B.SC Chemistry is M.SC (Chemistry), M.Phil.(Chemistry) and Ph.D.(Chemistry).

COURSE OUTCOMES:

S. No.	Semister	Course	Credits	Course Outcomes
1	SEM-I	CHEMISTRY-I Unit-1(Inorganic) UNIT-II(Organic) Unit-III(Physical) Unit-IV(General)	4	➢ It provides a base for understanding the Chemistry of S-block,P-block,Zero group elements and their compounds Chemical bonding in molecules and their ions. ➢ Structural theory of Organic molecules and their chemical reactivity,Aliphatic hydrocarbons,Alicyclic hydrocarbons ➢ Atomic structure and important theories. ➢ Evaluation of analytical data.
2	SEM-II	CHEMISTRY-II Unit-1(Inorganic) UNIT-II(Organic) Unit-III(Physical) Unit-IV(General)	4	➢ Predict structure and geometries of molecular species, applying the VBT and MOT. ➢ Gain knowledge about types of organometallic comounds , nomenclature and preparation of alkyls of main group elements ➢ Name aliphatic compounds, according to IUPAC rules. list their characteristic reactions , recall reagents to predict products, apply Huckel's rules to predict aromaticit
3	SEM-III	CHEMISTRY-III Unit-1(Inorganic) UNIT-II(Organic) Unit-III(Physical) Unit-IV(General)	4	It provides the knowledge to understand the following ➢ Appreciate chemical properties and periodic trends of d&f- block elements. ➢ Understand roults law, solute concentration on various colligative properties. Phase rule, no. of phases, deg. of Freedom. Differentiate thermal and photochemical processes, State Laws of photochemistry ➢ Understand synthetic routes. Explain important physical and chemical properties , predicting the products of reactions. Develop skill of writing mechanisms. ➢ Identify symmetry in molecules. explain stereoisomerism and its types , identify chirality in molecules, assign R&S , cis & trans and E,Z configurations to molecules.

4	SEM-IV	CHEMISTRY-IV Unit-1(Inorganic) UNIT-II(Organic) UnitIII(Physical) Unit-IV(General)	4	It provides the knowledge to understand the following ➢ Develop an understanding of theories of metallic bonding. Semiconductors. EAN and carbonyls. Appreciate the importance and role of metal ions in biological systems. ➢ Characteristic reactions of different carbonyl compounds. Learn and recall reagents to predict products reactions. Develop skill of writing reaction mechanisms. ➢ Derive rate laws, Explain theories of reaction rates. Differentiate homogenous and heterogeneous catalysis. Explain enzyme catalysis and factors affecting it. Recognize the Michaelis-Menten equation ➢ Acquire basic knowledge about synthetic strategies, asymmetric synthesis of organic molecules.
5	SEM-V (Paper – V) (PaperVI)	CHEMISTRY-V Unit-1(Inorganic) UNIT-II(Organic) Unit-III(Physical) Unit-IV(General) CHEMISTRY-VI ElectivePaper a)Instrumental methods of analysis Unit-1 (solventextraction) UNIT-II (chromatographyI) Unit-III (Chromatography-II) Unit-IV (Spectralmethods) b)Industrial&catalysis	3 3	It provides the knowledge to understand the following ➢ Name coordination compounds, understand and apply theories that explain bonding and structure, list merits and demerits, ➢ Classify amines as 1^0, 2^0, 3^0; describe the general methods of preparation, properties and uses of amines and nitro compounds. Learn nomenclature of simple five member rings, give an account of their reactivity and write reactions for their synthesis. ➢ State thermodynamic laws, understand concepts of work , enthalpy entropy and free energy, ➢ Solve problems using relationships between work, enthalpy entropy and free energy

6	SEM-VI Paper -VII Paper-VIII	CHEMISTRY-VII Unit-1(Inorganic) UNIT-II(Organic) Unit-III(Physical) Unit-IV(General) Elective: a)Medicinalchemistry UNIT-I Terminalogy UNIT-II UNIT-III UNIT-IV b)Agricultural&Fuels c)	3 3	It provides the knowledge to understand thefollowing ➢ Beer-Lamberts law, list applications and demerits. Understand fundamentals of light and matter interaction and explain its implications on types of spectra and structure determination. Describe spectroscopic instrumentation and interpret spectra. ➢ Acquire basic knowledge of drug classification and terminologies. Understand scheme of synthesis of few drugs. ➢ Explain solvent extraction; define terms of chromatography, Explain basic principles of chromatographic separations, design and working of instruments and list applications of these techniques.

IV.CURRICULUM ASPECTS:

STAFF PARTICULARS (2014-15)

S. No.	Name of the Faculty	Designation	Qualification
1	Dr.B.Venkateswarlu	Assistant professor of Chemidtry	MSC, B.Ed ,PhD
2	R.SujithReddy	Lecturer	MSC

STAFF PARTICULARS (2015-16)

S. No.	Name of the Faculty	Designation	Qualification
1	Dr.B.Venkateswarlu	Assistant professor of Chemistry	MSC B.Ed PhD
2	R.SujithReddy	Lecturer	MSC

STAFF PARTICULARS (2016-17)

S. No.	Name of the Faculty	Designation	Qualification
1	Dr.B.Venkateswarlu	Assistant professor of Chemistry	MSC, B.Ed, PhD
2	R.SujithReddy	Lecturer	MSC

STAFF PARTICULARS (2017-18)

S. No.	Name of the Faculty	Designation	Qualification
1	Dr.B.Venkateswarlu	Assistant professor of Chemistry	MSC, B.Ed ,PhD
2	R.SujithReddy	Lecturer	MSC

STAFF PARTICULARS (2018-19)

S. No.	Name of the Faculty	Designation	Qualification
1	Dr.B.Venkateswarlu	Assistant Professor of Chemistry	MSC B.Ed PhD

STAFF PARTICULARS (2019-20)

S. No.	Name of the Faculty	Designation	Qualification
1	Dr.B.Venkateswarlu	Assistant Professor of Chemistry	MSC B.Ed PhD

VI. DEPARTMENTAL PROFILE

Chemistry department established on August 1989 in KNM Degree College it is situated at Ground Floor G-6 & G-7 Rooms up to 2016 after that it is shifted in to F-4 &F-5, in F-4Lab used for SEMISTER I, volumetric analysis, SEMISTER II, semi-microanalysis, SEMISTER III, organic Preparations & Identifications, SEMISTER V some instrumentations and as well as classroom. In F-5 Lab used as store room, SEMISTER-IV& V Analytical balences and some instrumentals as well as classroom. Amounts 614348.72 and213562.00 Total 827910.72 spend in Department Laboratories from 04.08.1989 to tilltoday

KNM GOVT.DEGREE COLLEGE : MIRYALAGUDA
DEPARTMENT OF CHEMISTRY

S.NO	DATE	INVOICE NO	AMOUNT
1	04.08.1989	17/89-90	6679.92
2	04.08.1989	SE/16/89-90	21013.50
3	05.08.1989	23/89-90	167.40
4	06.12.1989	52/89-90	793.20
5	03.01.1990	62/89-90	247.75
6	10.01.1990	EMKEY TREDARS	106.00
7	03.02.1990	THE EDUCATION EMPORIUM	304.25
8	08.09.1990	SE/90-91	2442.40
9	08.09.1990	SE/38/90-91	4972.40
10	08.09.1990	SE/38/90-91	1193.00
11	20.11.1990	SE/68/90-91	348.20
12	20.12.1990	KE/09/90-91/246	63919.25
13	20.12.1990	KE/09/90-91/247	30418.25
14	10.01.1991	SE/79/90-91	880.50
15	10.01.1991	SE/78/90-91	2570.30
16	09.02.1991	SE/92/90-91	4015.35
17	09.02.1991	SE/09/90-91	3541.45
18	25.02.1991	JE/110/90-91	303.25
19	13.01.1991	JE/124/90-91	891.15
20	29.11.1991	JE/91/91-92	2447.40
21	29.11.1991	JE/91/91-92	2293.55
22	16.01.1992	09/132/3/91-92	8332.55
23	18.01.1992	09/132/2/91-92	12867.85
24	28.02.1992	09/91-92/175	13712.40
25	03.03.1992	09/91-92/196	272.95
26	06.02.1993	09/92-93/206	33575.05
27	21.01.1994	09/93-94/197	26828.30
28	07.12.1994	191 (UGC)	21293.65
29	16.12.1994	205 (UGC)	161.55
30	19.12.1994	KE/94-95/46	29320.85
31	31.03.1995	566	3094.20
32	31.03.1995	565	7690.00
33	31.03.1995	576	8747.50
34	03.03.1995	186/1	500.00
35	24.01.1996	229	4269.30
36	24.01.1997	110	14637.70

37	24.02.1997	39	1675.00
38	11.11.1997	1860	1710.00
39	24.11.1997	315	11066.00
40	02.02.1999	392	3791.70
41	02.02.1999	436 (UGC IX PLAN)	11128.00
42	22.12.1999	041 TO 043	5766.20
43	28.01.2000	049 TO 050	2873.90
44	21.12.2000	272	5040.00
45	21.12.2000	273	2705.40
46	21.12.2000	274	521.90
47	01.01.2001	292	1044.30
48	17.01.2003	333	1593.00
49	17.01.2003	334	1464.00
50	17.01.2003	335	1599.00
51	17.01.2003	337	879.00
52	03.01.2004	444	10212.00
53	03.01.2004	445	6010.00
54	31.03.2004	606 (UGC)	52764.00
55	29.07.2004	111 (IUGC)	27664.00
56	12.02.2010	1367/09-10	9787.00
57	31.03.2010	1685/09-10	31200.00
58	31.03.2011	145/10-11	18096.00
59	05.02.2013	2147/12-13	15796.00
60	10.02.2014	2107/13-14	31152.00
61	10.02.2014	2108/13-14	2692.00
62	13.01.2015	137/14-15	21266.00
TOTAL			**614348.72**

(Rupees Six Lacks Fourteen Thousand Three Hundred Forty Eight and Seventy Two Pisa Only)

KONDURU NARSAIAH MEMORIAL DEGREE COLLEGE : MIRYALAGUDA
DEPARTMENT OF CHEMISTRY

S.NO	DATE	INVOICE NO	AMOUNT
1	04.10.2004	355	4144.00
2	08.10.2004	296	10000.00
3	01.01.2005	334	28784.00
4	11.01.2005	350	22425.00
5	11.01.2005	351	15586.00
6	30.01.2006	579	2982.00
7	27.01.2006	570	20771.00
8	08.02.2007	492	4138.00
9	08.02.2007	488	10930.00
10	06.02.2008	510/07-08	10486.00
11	31.03.2008	667/07-08 (UGC)	34680.00
12	31.03.2009	1081/09-10 (UGC)	41677.00
13	06.02.2009	402	3783.00
14	06.02.2009	403	3176.00
TOTLAL			**213562.00**

(Rupees Two Lacks Thirteen Thousand Five Hundred and Sixty Two Only)

In 1989 appointed as adhoc basis Faculty members are

1. G.VenkatReddy for physical chemistry
2. B.Venkateswarlu for organic chemistry
3. SK.Ussain for inorganic chemistry

In 1994 &1995 appointed as fulltime with constituted committee as per G.O M.s No .12 they are

1. G.VenkatReddy for physical chemistry
2. B.Venkateswarlu for organic chemistry
3. SK.Ussain for inorganic chemistry
4. K.Prameela for inorganic chemistry (after 7days she is Resignd)

From1991 to 2001out going chemistry students were got good resultsin UG Level & PG ranks in Osmania, HCU, Kakatiya, and other universities.

In March 2013 B.Venkateswarlu, organic chemistry Lecturer joined in PhD course at osmania university based on Eligible Test as a Teacher candidate Doctoral work on "INHIBITOTY AGENTS FOR ALZHEIMER AND PARKINSON'S DISEASES AND THEIR MOLECULAR MODELLING STUDIES" completed Doctoral work September 2016 Convocation Awarded PhD from Osmania University with peer reviewed international publications.

On10-04-2018 as per commisionerate of collegiate education proceeding number410/Admin-1/2013 Regularised/Absorbed staff members in chemistry department is

1).Dr.B.Venkateswarlu Asst.Professor of chemistry

2).R.Sujith Reddy Lecturer in chemistry

From10-04-2018 on words Dr.B.Venkateswarlu.Asst.Professor of chemistry and as a HOD in Chemistry department with additional responsibilities like Jignasa for Student Research Projects, DISHA Projects for career guidance and employability especially for female students, SWAYM for MOOCS, Haritha haram as per proceeding number 55 act as vice principal for Academic matters, TC, Study conduct, Examinationbranchupto01-01-2020.

VII. PERSONAL PROFILE

CURRICULAM VITAE

BOLISETTI VENKATESWARLU

Email: venkateswarlu.bolisetty@gmail.com **Mobile:** +91-9908930386

Summary:

- Over 31 years of teaching experience in Chemistry since 31.08.1990 to till date.
- Working as Vice Principal 2019 in KNM Government Degree College, Miryalaguda An In-Charge Principal for Science groups in the year 2002 to 2003.
- Worked as NSS Program Officer from 2000 to 2004.

Educational Profile:

- PhD in Chemistry on "Inhibitory agents for Alzheimer and Parkinson's diseases and their Molecular Modeling studies" from Osmania University in September 2016.
- B.EdinChemistry1and 2 with an aggregate of 50.22% from Annamalai University in 1993.
- M.Sc in Organic Chemistry with an aggregate of 57.2% from Osmania University in 1990.
- B.Sc in BZC group with an aggregate of 61.6% from Osmania University in 1985.
- Intermediate with 50.00% in Bi.P.C group from B .I. Education, A.P in 1982.
- S.S.C with 51.50% from Board of Secondary Education, A.P in 1980.

Co Curricular Activities:

Published a paper on "CORELATION OF 5, 6, 7, 8 - TETRAHYDROACRIDINE BASED SCAFFOLD INHIBITORYAGENTS FOR ALZHEIMER DISEASE" in "IJPBS" Journal.

- Published a paper on "QSAR AND DOCKING STUDIES OF APHORPHINE BASED DERIVATIVES AS EFFICACIOUS PARTIAL ANTAGONISTS FOR PARKINSON'S DISEASE" in "IJPBS" journal.
- Published a paper on "A STRUCTURE BASED QSAR AND DOCKING STUDIES ON DONEPZILDERIVATIVES AS AChE INHIBITORS" in "IJRCS" journal. on 7-4-2017
- Published a paper on "ANTIBACTERIAL STUDIES OF ECO-FRIENDLY PHYTOSYNTHESIZED PVA CAPPED AgNP'S USING PLASSIFLORA EDULIS" in "UGC" journal. July 2018.
- Published a paper on "GALANTAMINE FOR DEMENTIA DUE TO ALZHEIMER DISEASE AND THEIR MOLECULAR MODELLING STUDIES" journal.
- Seminar on "Research Design" for Molecular Modeling Studies". at OU Chemistry Dept.
- Seminar on "Progress of Research" for Molecular Modelling Studies" at OU Chem Dept.
- Seminar on Pre-Submission of Thesis for"Molecular Modelling Studies" at OU ChemDep
- Seminar on "INHIBITORY AGENTS FOR ALZHEIMER AND PARKINSON'S DISEASES AND THEIR MOLECULAR MODELLING STUDIES" at OU Chem. Dept.
- Seminar on "INHIBITORY AGENTS FOR ALZHEIMER AND PARKINSON'S DISEASES AND THEIR MOLECULAR MODELLING STUDIES" at MANU, HYD.

- Presented a Seminar on Ganesh Symbolism and" MOLECULAR MODELLING STUDIES ON INHIBITORY AGENTS FOR ALZHEIMER AND PARKINSON'S DISEASES" held on 19thSep2016 at Sangamithra Degree College, Jammikunta, KRNR. District.
- Attended a National Seminar on Recent Trends in Separation Process In Pollution Control on 12th &13th July 2014 at KRRGDC Kodad Sponcerd by UGC,New Delhi.
- Attended a Orientation program me on 2019 Sep-13 to oct-03 at MANU, HYD.
- Attended a workshop on Production, Adoption and Promotion of MOOCS on SWAYAM ON 31-08 2018 at DDE, MANU,HYD.
- Attended a workshop on Molecular Modeling and Drug Design in Bits-Pilani, HYD.
- Attended a workshop on" Vidyawaan".on 18-08-2018 at MGU Nalgonda
- Attended a workshop on Moderation board on 18-03-2018&2019 at MGU Nalgonda.

- Attended a Seminar on "BIG DATA ANALYTICS" on 7th October2015 at SITECH Chevella HYD.
- Attended a Seminar on "Advances in chemical sciences" on 27th Aug2015at UCS, OU Chemistry department HYD.
- Attended a 2nd International Conference on 'Emerging Trends in Chemical and Pharmaceutical Sciences" on 15 to 17 October 2014 at CSIR-IICT, HYD.
- Participated in 2nd National Symposium on "Current Trends in Pharmaceutical Sciences" in Bits-Pilani, HYD.
- Participated as a judge state level science fair on 18th to 22nd October 2016 at SVAV Bandlaguda jagir ,HYD.
- Participated as a judge district level science fair on 5th to7th December 2017 at miryalaguda.
- Organise Jignasa-2018 and 2019Student Research project in KNMGDC Miryalaguda.
- Organise DISHA Project in KNMGDC Miryalaguda.
- Organise MOOCS online program me for SWAYAM in KNMGDC Miryalaguda.
- Organise Career guidance and placement cell in KNMGDC Miryalaguda.
- Volleyball Captain in OU Science College (1987-88).

Personal Skills:

- I have good communication ,adminisration and interpersonal skills
- Self driven & self motivating personality
- I am always ready to volunteer any activity which I feel is effective and expedient

Computer Literacy:

- Microsoft Office
- Windows-XP

(Dr.B. VENKATESWARLU)
M. Sc, PhD

VIII. KNM GDCMIRYALAGUDABSC STUDENTS STRENGTH

2014-2015

Course	Year	Men	Women	Total
B.SC(MPC)+(BZC)	I	8	12	20
B.SC(MPC)+(BZC)	II	23	0	23
B.SC(MPC)+(BZC)	III	56	10	66
Total		**87**	**22**	**109**

2015-16

Course	Year	Men	Women	Total
B.SC(MPC)+(BZC)	I	34	7	41
B.SC(MPC)+(BZC)	II	19	12	31
B.SC(MPC)+(BZC)	III	24	0	24
Total		77	**19**	**96**

2016-17

Course	Year	Men	Women	Total
B.SC(MPC)+(BZC)	I	51	06	57
B.SC(MPC)+(BZC)	II	34	05	39
B.SC(MPC)+(BZC)	III	18	08	26
Total		**103**	**19**	**122**

2017-18

Course	Year	Men	Women	Total
B.SC(MPC)+(BZC)	I	21	07	28
B.SC(MPC)+(BZC)	II	41	03	44
B.SC(MPC)+(BZC)	III	38	0	38
Total		**100**	**10**	**110**

2018-19

Course	Year	Men	Women	Total
B.SC(MPC)+(BZC)	I	31	23	54
B.SC(MPC)+(BZC)	II	23	02	25
B.SC(MPC)+(BZC)	III	38	03	41
Total		**92**	**28**	**120**

2019-20

Course	Year	Men	Women	Total
B.SC(MPC)+(BZC)	**I**	**27**	**12**	**39**
B.SC(MPC)+(BZC)	**II**	**29**	**21**	**50**
B.SC(MPC)+(BZC)	**III**	**20**	**01**	**21**
Total		**76**	**34**	**110**

IX. ADDITIONAL CURRICULAR RESPONSIBILITIES:

- Coordinater for jignasa project from 2018
- Convenor of Criteriain III NAAC
- Convenor UGC Committee
- Member of Admissions committee for BSc Admissions from 2014
- Mentor BSc II and IIIrd Year Students.
- Mentor for SWAYAM Moocs from 2017
- Member of Haritha haram
- Member of establish Committee.
- Member of Extension Lecturer Committee.
- Member of Timetable Committee.
- Member of Scholarship Committee.
- Member of Magazine Committee.
- Member of Clean & Green Committee.
- Member of Mentor Mentee Committee.
- Member of OBC cell Committee.
- Confidential work for MGU, Nalgonda and NG College (A), Nalgonda, 2014 to Present Chief Examiner to BSc chemistry Annual & Semester Examination, Mahatma Gandhi University, Nalgonda,

ACTIVITIES PARTICIPATED IN:

- Clean and Green
- Harithaharam
- International Yoga Day
- World Populationday
- Jayashankar Jayanti
- Gandhi Jayanti
- Rastriya Ekta Diwas
- Constitution Day
- National Youth Day
- Teacher's Day
- Swatch Bharath / Swatch Telangana Programme in the College
- Campus AIDS day Rallies of awareness and importance of vote in Votes Day Rallies for clean and green Telangana.
- All NSS activities Participated

DEPARTMENTAL ACTIVITIES:

- Students Study Projects
- conducting Students Seminars
- Departmental Quiz competitions
- Competitive Awareness Group Discussions
- Competitive Exams Awareness

X. ANNUAL ACADEMICPLAN 2019-2020

DEPARTMENT OF CHEMISTRYKNM GDC MIRYALAGUDA

S. NO.	MONTH	ACTIVITIES
1.	JUNE (2019)	DEPARTMENT MEETING, DOST ADMISSIONS ORIENTATION TO FIRST SEMESTER – I
2.	JULY (2019)	BSc STUDENTS, CLEAN AND GREEN, REGULAR CLASSES AS PER SCHEDULE
3.	AUGUST (2019)	STUDENT SEMINARS, SWACHH BHARAT EXTENSION LECTURE
4.	SEPTEMBER (2019)	ESSAY WRITING COMPETITIONS SYLLABUS REVIEW MEETING, MIDTERM
5.	OCTOBER (2019)	VACATIONS SEMESTER END
6.	NOVEMBER (2019)	SEM WISE PRACTICAL & THEORY EXAMINATIONS
7.	DECEMBER (2019)	INDUSTRIAL TOOR FOR CAREER AND GUIDANCE
8.	JANUARY(2020)	STATE LEVEL SEMINAR, QUIZCOMPITATIONS STUDENTS SEMINARS, REVIEW OF SYLLABUS
9.	FEBRUARY (2020)	SYLLABUS AWARENESS ON ENTRANCE TO PG
10	MARCH (2020)	PRACTICAL EXAMINATIONS
11.	APRIL (2020)	SEMISTER END EXAMINATIONS

XI. CRITERIA WISE ACTIVITIES:

1. CURRICULAR ASPECTS:

- Semester System with utilized syllabus
- Study Projects
- Seminars, Extension Lectures and guest lectures
- Bridge Classes Previous Question Papers
- Students feed back
- Preparation of Annual Academic Year

2. a) TEACHING:

- Academic Plans
- Synopsis
- Maintaining Teaching Diaries
- Enabling of disadvantage and slow learners
- Feed back on teachers and teaching
- Personal Counselling – Minimization of drop out
- Keeping relevant paper clipping at the reach of the student
- Providing study material

b) LEARNING PRACTICLES:

- Study Projects
- Department Library
- Charts, Maps
- Field Work
- Question Paper
- Study Material
- Paper Clipping

c) EVALUTING:

- Slip Tests
- Quizzes
- Study Projects
- Ward Counselling
- Internal Assessment
- Student Seminars
- Group Discussions
- Debates
- Elocution
- Question – Answers
- Interaction with parents of students
- PPT Classes

3. RESEARCH, CONSULTANCY & EXTENSION:

RESEARCH

- Creation of research culture among students through Jignasa study projects

CONSULTANCY

- Collaboration with other departments colleges and local universities
- Mentor Mentee System
- Free Education consultancy for the benefits of students
- Linkage with association and organisation related to higher educations.

EXTENSION

- Organizing awareness Programs for benefits of youth and students
- Debates, Group Discussions
- Regular Participation Clean & Green Program
- Organizing Round Table conference on the day to day issue of Nation and State

4. INFRASTRUCTURE & LEARNING:

RESOURCES

- Imparting training to the students creating awareness to utilize library resource effectively.
- Dept. Library Books
- Chat Maps
- Paper Clippings
- Practice of books regarding and review computation among students.
- Providing material for PG and other Entrance Test.
- Providing Model Question Papers.

5. STUDENT SUPPORT & PROGRESSION:

- Department is trying to its level best for the student progression and support.

STUDENT SUPPORT

- Coaching for PG Entrance Test
- Regular Counselling
- Financial Support
- Career Guidance
- Effort to solve personal Problem of Students

STUDENT PROGRESSION

- Our Students got Opportunities in various fields
- Sceintists, Doctorals
- MSc chemistry & other PG Courses B.Ed, LLB,MBA Couses
- Lecturers, Teachers, Police Department
- Teacher’s Training Courses
- Business Service, Social Activist
- Govt. Service, Private Service

6. ORGANIZATION

Participation of the faculty in various activities of the college through the concerned communities

NSS, NCC, RedRibben

- College Administration
- Admission Work
- Linkage with OU, KU University, Junior Colleges & Degree College, Student and Civil Society

7. HEALTH PRACTICES

- Department Books
- Mentor Mentee system
- Question Banks
- Study Materials
- Feed Backs

PARTICIPATION IN INSTITUTIONAL SOCIAL RESPONSIBILITY (ISR) AND EXTENSION ACTIVITIES:

- Students of the Department Participate in ISR & Extension activities through their membership in NSS & NCC
- They also contribute to their social responsibilities by teaching the students of SC hostels.
- They also contribute rice once every week which is distributed to orphan homes.
- Students are also members of women empowerment cell through which they learn women empowerment.
- Students also participate in Swachcha Bharat and keep their surrounding clean.
- Students of chemistry taken initiative in plantation of trees programme as a part of Harita Haram initiated by Honorable Chief Minister of Telangana State.
- Many Students did Voluntary service during Election Duty 2018.

STRENGTHS:

- Previous students of the faculty received state ranks in chemistry in 1992 to 2019
- Faculty actively involved in Publishing.
- Faculty encouragestudents listening lessons through telecast in MANA TV
- Facility is good at presentation of PPT's and using at other AV techniques.

WEAKNESSES:

- Inadequate physical infrastructural like no separate department room, a functional library, etc.
- No separate E-Class room for the students. Most of the students are coming from out station.

OPPORTUNITIES:

- Analytical power & soft skill endemic to chemistry students can be channelled better in exploring existing aspects of employability like Pharma and Research wings.
- With the girl's hostel fast coming up on campus, it is likely that the department does not lose out on some outstation female students on account of accommodation issues.
- Proximity of the department to many historically important location around the college, enable the students for further research.

CHALLENGES:

- Making all chemistry class room ICT enabled at present the department has to go to E-Class room
- Crating employability skills in the students of chemistry.

DEPARTMENT VISION & FUTURE PLAN FOR FIVE YEARS:

- Introduction of PG Course in chemistry for employ bilitymanagement
- Submission of proposals for minor research projects
- Collection o regular feed backs
- Brining out department Bulletin
- Organizing department alumni meet
- Continuation of industrialTours
- PPT, Video Lessons are regularly displayed in ICT Lab.
- Strengthen the Earn while learn plan.
- To conduct National seminars / workshops

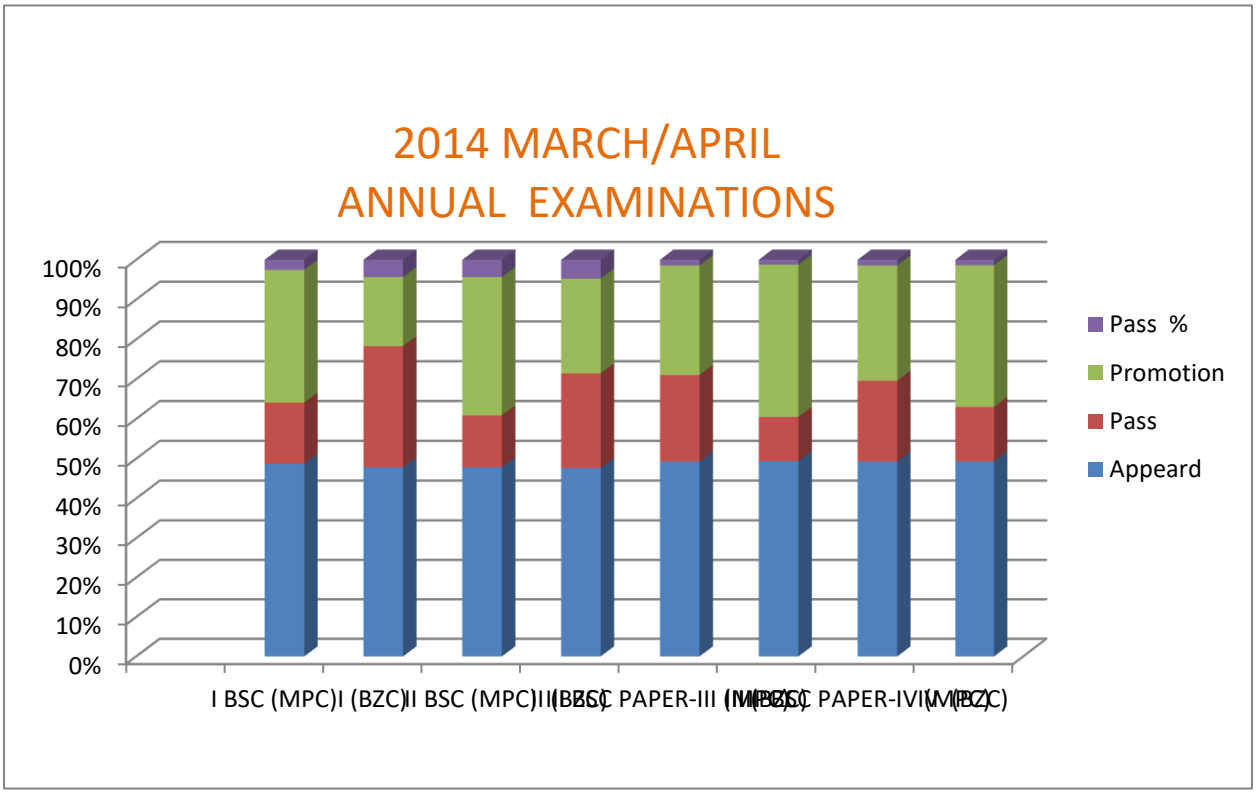
XII. RESULT ANALYSIS :

DEPARTMENT OF CHEMISTRY KNM G DC MLG

I	2014-2015MARCH/APRIL	2015ANNUAL
II	2015NOV/DEC	2015 SUPLIMENTRY
III	2015-16MARCH/APRIL	2016ANNUAL
IV	2016 NOV/DEC	(I BSC - I SEM - START) 2016 SUPLIMENTRYBSCII&III
V	2017 APRIL II SEM	IBSC-II SEM
		IIBSC-ANNUAL
		IIIBSC-ANNUAL
VI	2017- NOV - DEC	IBSC-I SEM , IIBSC-III SEM
		III BSC2017 SUPLIMENTRY
VII	2018 - APRIL - MAY	IBSC- II SEM
		IIBSC-IVSEM
		IIIBSC-ANNUAL
VIII	2018 - NOV - DEC	I BSC-SEM I
		IIBSC- SEM III
		IIIBSC- SEM V
IX	2019 - APRIL - MAY	IBSC- SEM - I
		IIBSC- SEM - IV
		III BSC-SEM - VI
X	2019 - NOV - DEC	IBSC -SEM - I
		IIBSC-SEM -III
		IIIBSC-SEM - V

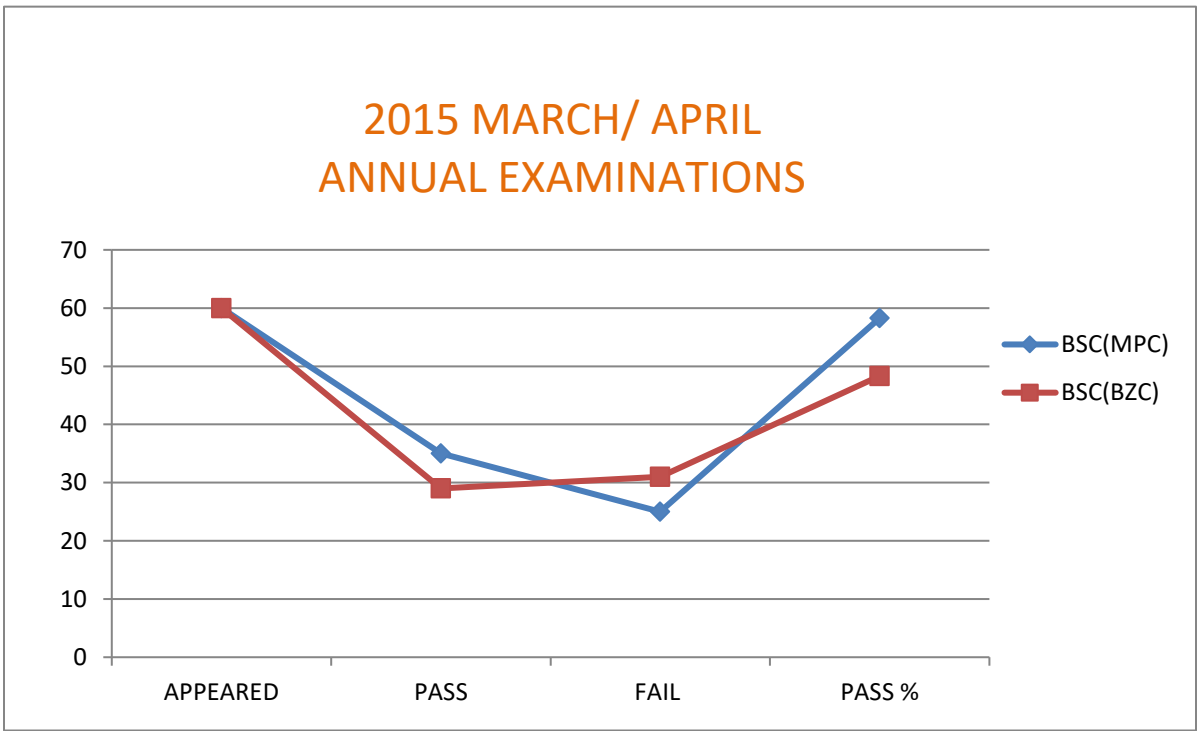
XIII) RESULTANALYSIS OF CHEMISTRY DEPARTMENTKNMGDCMIRYALAGUDA,

CHEMISTRY RESULT ANALYSIS 2014 MARCH / APRIL2014 ANNUAL EXAMINATIONS				
IBSC,MPC,BZCII BSC MPC,BZC III BSC,MPC,BZC(P- III & IV)				
GROUP	**Appeard**	**Pass**	**Promotion**	**Pass %**
I BSC (MPC) I (BZC)	19 11	6 7	13 4	100% 100%
II BSC (MPC) II (BZC)	11 10	3 5	8 5	100% 100%
III BSC PAPER-III (MPC) III (BZC)	34 40	15 9	19 31	100% 100%
III BSC PAPER-IV (MPC) IV (BZC)	34 36	14 10	20 26	100% 100%



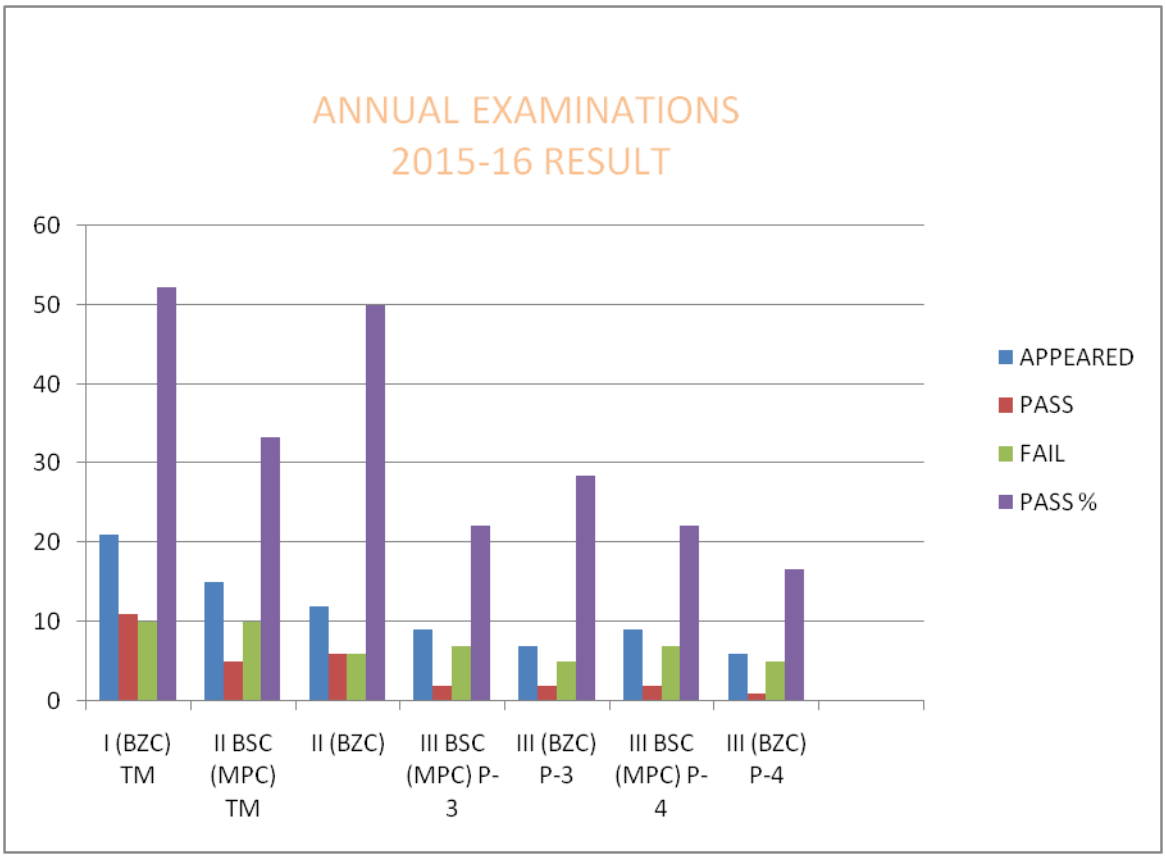
DEPARTMENT OF CHEMISTRY
KNMGDC MIRYALAGUDA

CHEMISTRY RESULT ANALYSIS 2015 MARCH / APRIL ANNUAL EXAMINATIONS				
I BSC(MPC,BZC) II BSC(MPC,BZC) III BSC(MPC,BZC) - III & IV PAPER				
GROUP	**Appeared**	**Pass**	**Fail**	**PASS %**
BSC(MPC)	**60**	**35**	**25**	**58.3%**
BSC(BZC)	**60**	**29**	**31**	**48.3%**



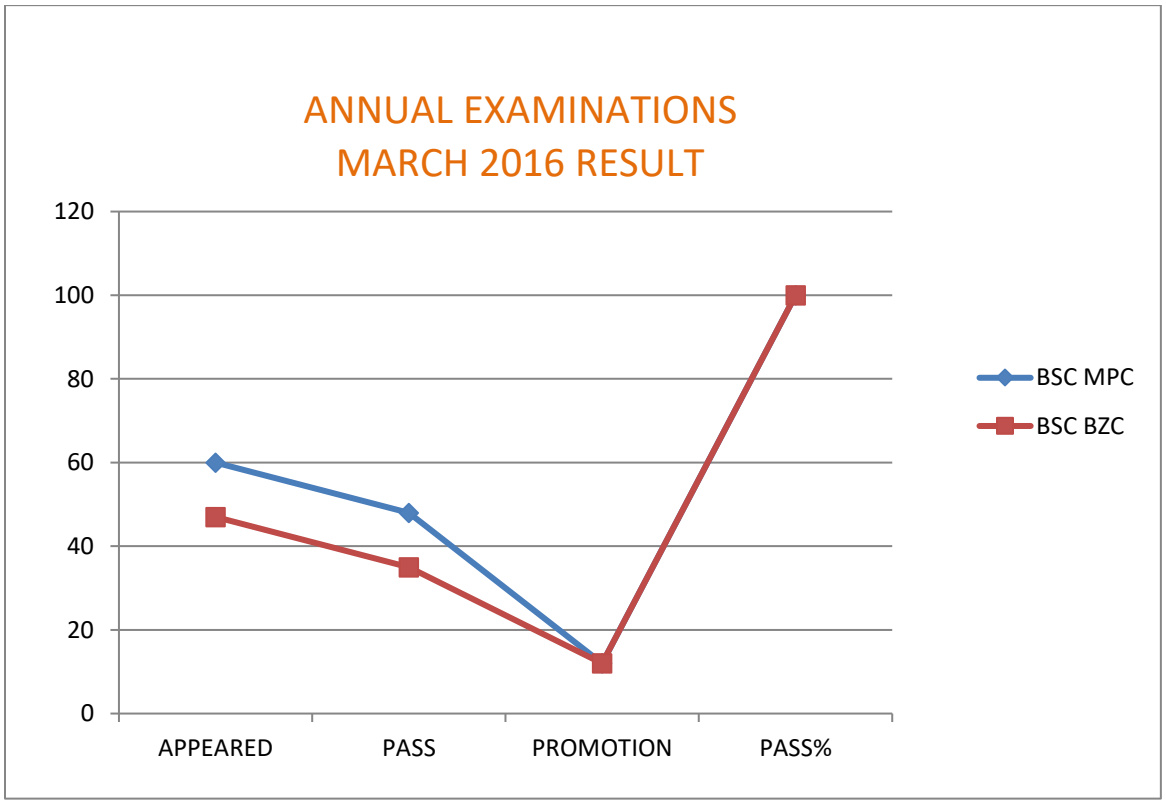
DEPARTMENT OF CHEMISTRY
KNM GDCMIRYALAGUDA.

CHEMISTRY RESULT ANALYSIS ANNUAL EXAMS 2015-2016 I BSC(MPC+BZC) I I BSC(MPC+BZC) III BSC(P – 3)&P – 4)				
Group	**Appeared**	**Pass**	**Fail**	**Pass Percentage**
I BSC(MPC)TM&EM I (BZC) TM	10+19 21	6+11 11	4+8 10	58.62 52.3
II BSC(MPC) TM II (BZC)	15 12	5 6	10 6	33.3 50
III BSC (MPC) P-3 III (BZC) P-3	9 7	2 2	7 5	22.2 28.5
III BSC (MPC) P-4 III (BZC)P-4	9 6	2 1	7 5	22.2 16.6
TOTAL	108	46	62	
OVERALL%				42.5



DEPARTMENT OF CHEMISTRY
KNM GDC MIRYALAGUDA.

CHEMISTRY RESULT ANALYSIS MARCH / APRIL2016 ANNUAL EXAMINATIONS				
IBSC(MPC,BZC)IIBSC(MPC,BZC) IIIBSC(MPC,BZC) P- III &P- IV				
GROUP	**Appeared**	**Pass**	**Promotion**	**Pass %**
BSC MPC	60	48	12	100%
BSC BZC	47	35	12	100%

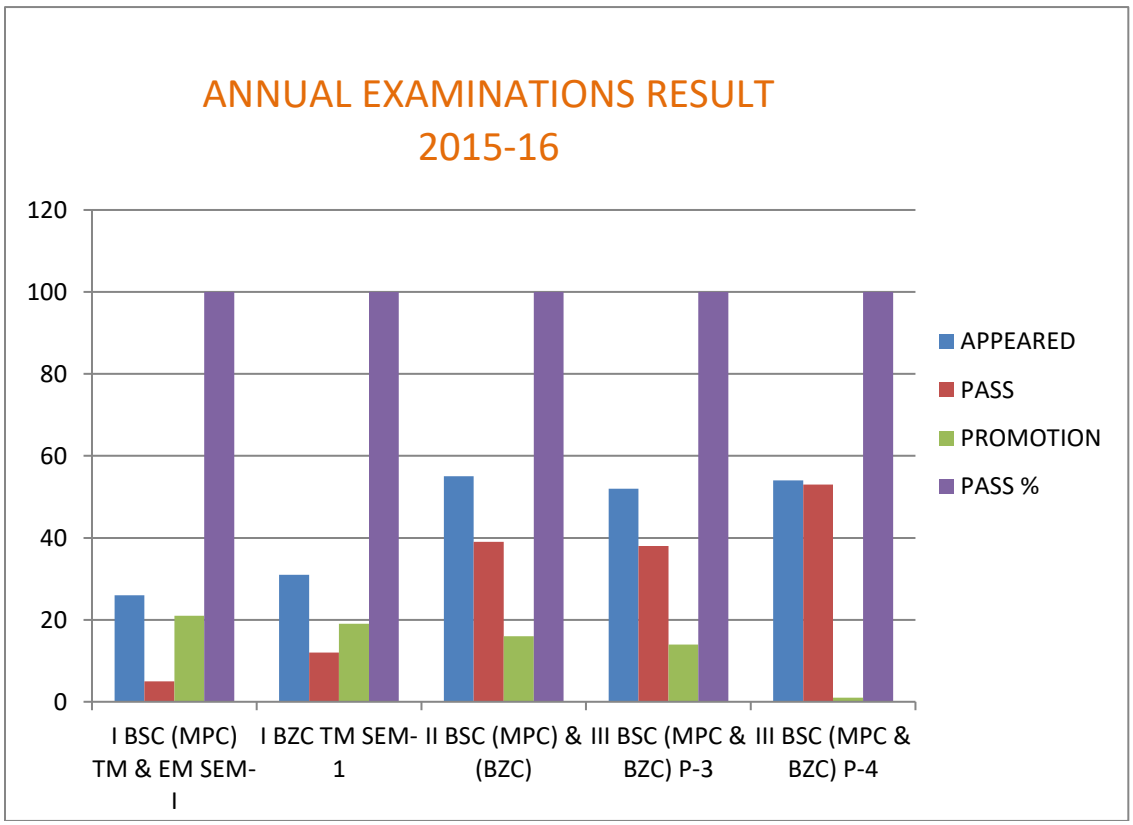


DEPARTMENT OF CHEMISTRY
KNM GDC MIRYALAGUDA.

RESULT ANALYSIS
NOVEMBER-2016

I BSC(MPC+BZC)
II BSC(MPC+BZC)
III BSC(MPC+BZC)

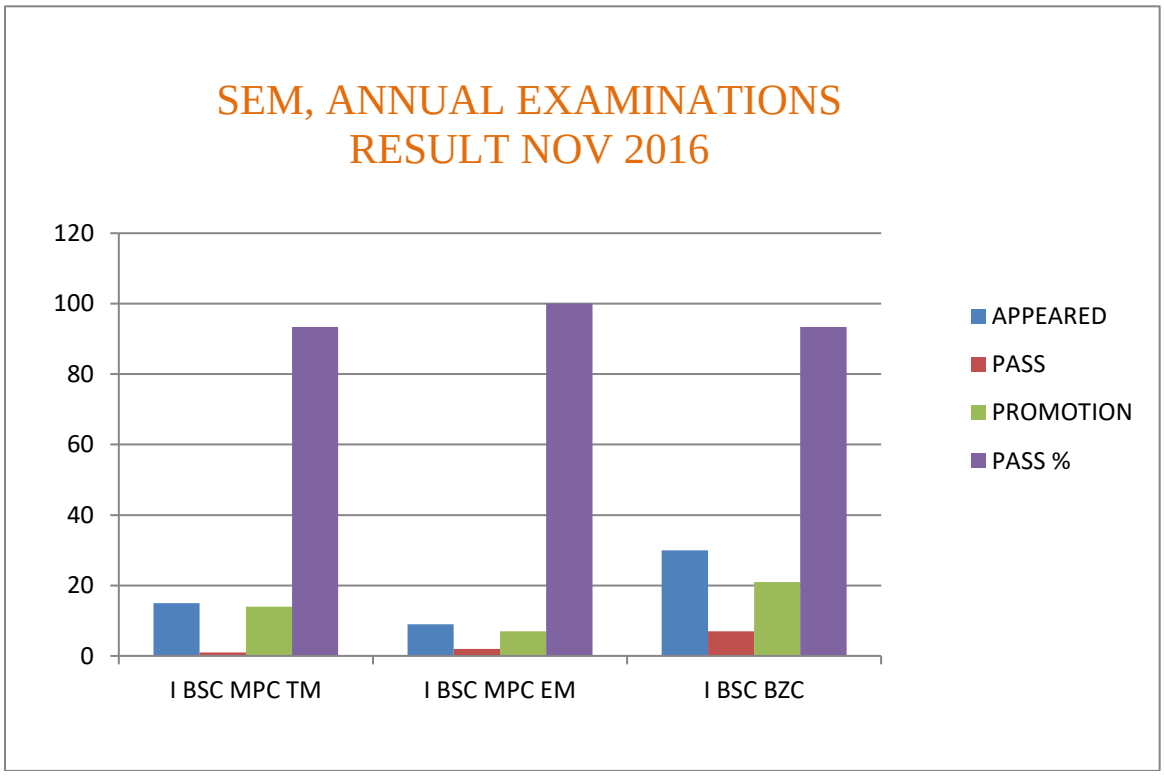
Group	Appeared	Pass	Promotion	Pass-%
I BSC(MPC)TM&EM SEM-I	16+10	2+3	21	100%
I (BZC)TM SEM-I	31	12	19	100%
II BSC(MPC)&(,BZC)	55	39	16	100%
III BSC(MPC&BZC) P-3	52	38	14	100%
III BSC(MP&BZC) P—4	54	53	1	100%
TOTAL OVERALL	218	147	61	100%



DEPARTMENT OF CHEMISTRY
KNM GDC MIRYALAGUDA.

RESULT ANALYSIS
NOV2016 - I SEM - I Bsc

GROUP	Appeared	Pass	Promotion	%
I Bsc – SEM-I	57	27	35	100%
I MPCTM	16	0	15	93.75%
IMPC EM	10	2	8	100%
IBZC	31	5	26	100%

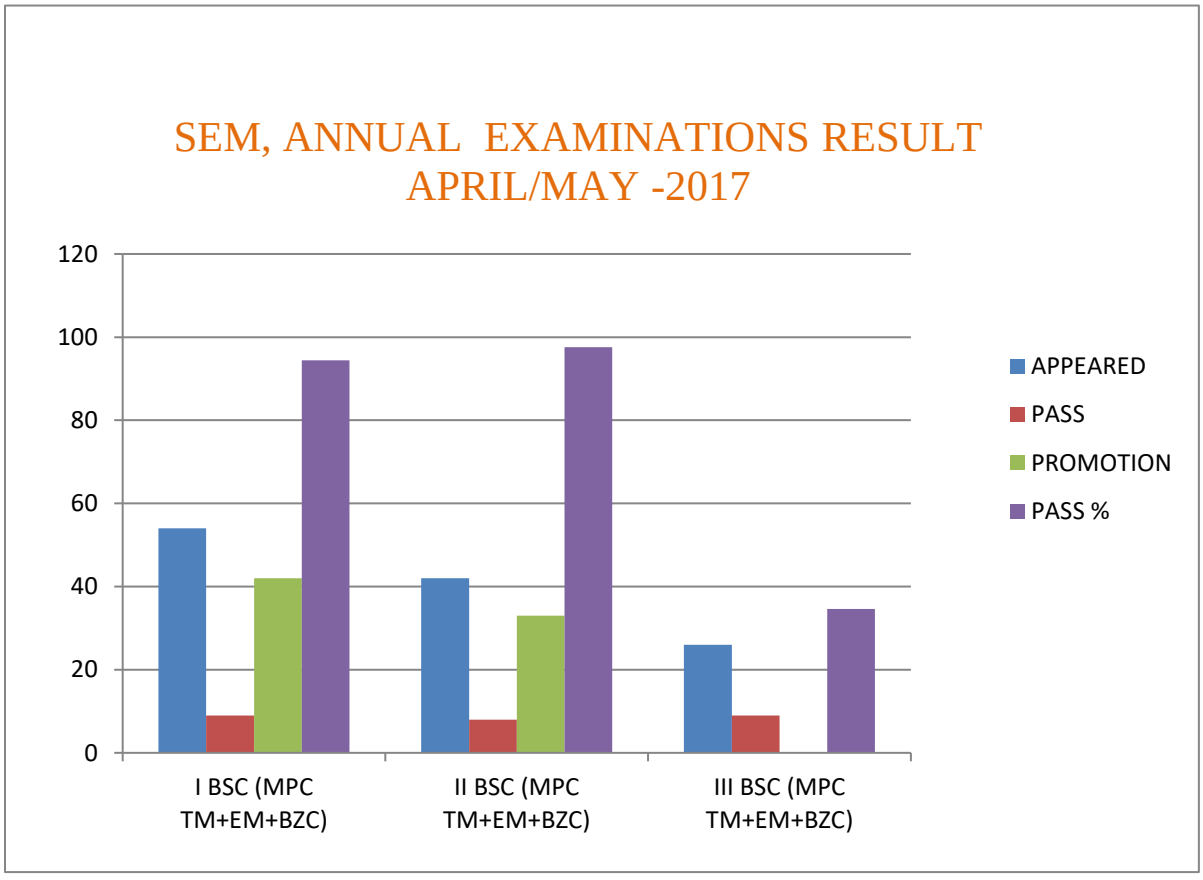


DEPARTMENT OF CHEMISTRY
KNM GDC MIRYALAGUDA.

RESULT ANALYSIS

SEM, ANNUAL EXAMS APRIL/MAY-2017

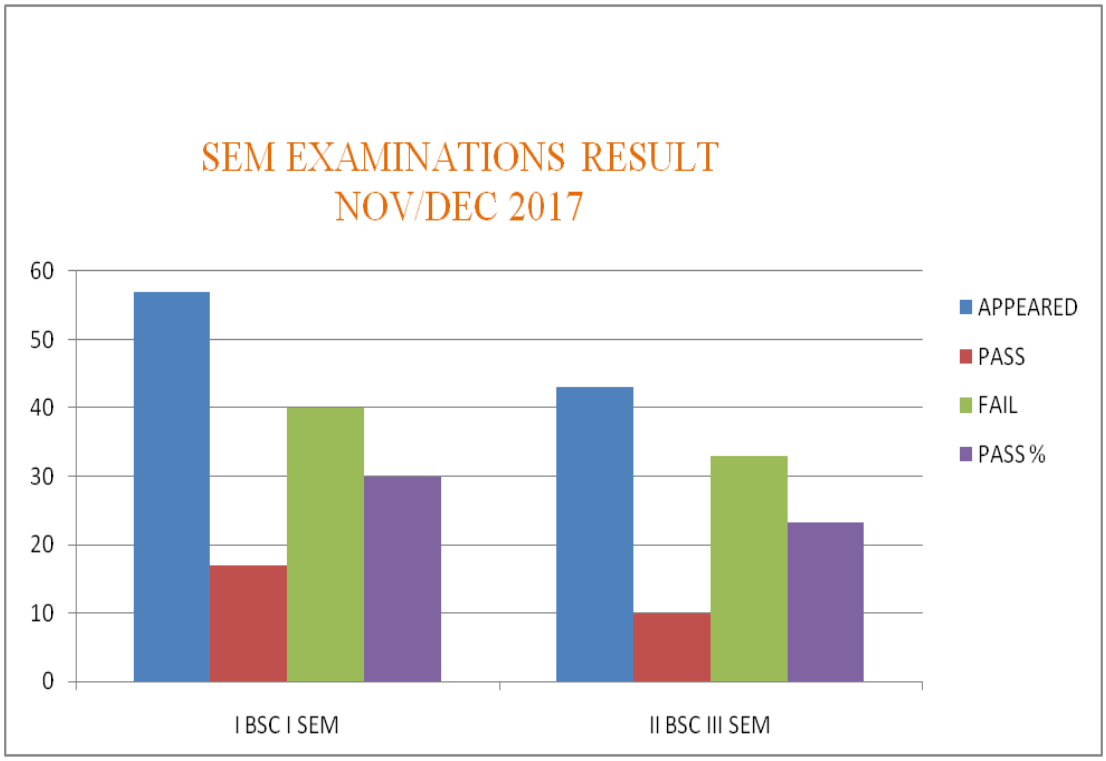
GROUP	Appeared	Pass	Promotion	Pass-%
IBSC (MPCTM+EM+BZC)	(15+9+30) 54	(0+2+7)9	(14+7+21)42	94.4%
IIBSC (MPCTM+EM+BZC)	(9+19+14)42	(2+4+2)8	(6+15+12)33	97.6%
IIIBSC (MPCTM+EM+BZC)	(15+11)26	(3+6)9	_	34.6%
Overall	122	26		75.5%



DEPARTMENT OF CHEMISTRY
KNM GDC MIRYALAGUDA.

CHEMISTRY SEM I&III
RESULT ANALYSIS NOV / DEC2017

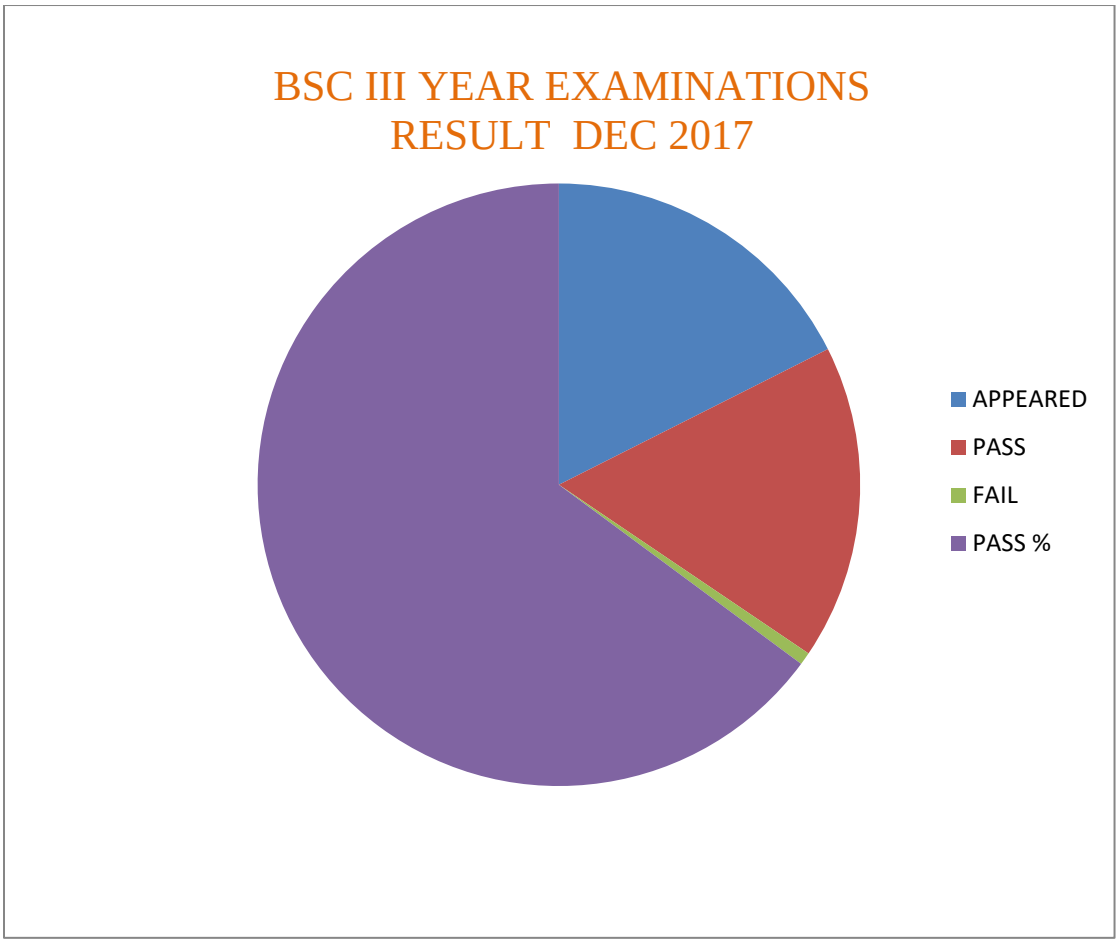
GROUP	Appeared	Pass	Fail	Pass-%
I Bsc I SEM	(16+10+31)57	(2+3+12)17	40	29.82%
II Bsc IIISEM	(9+19+15)43	(2+6+2)10	33	23.2%



DEPARTMENT OF CHEMISTRY
KNM GDC MIRYALAGUDA.

RESULT ANALYSIS DEC 2017
III YEAR EXAMINATIONS

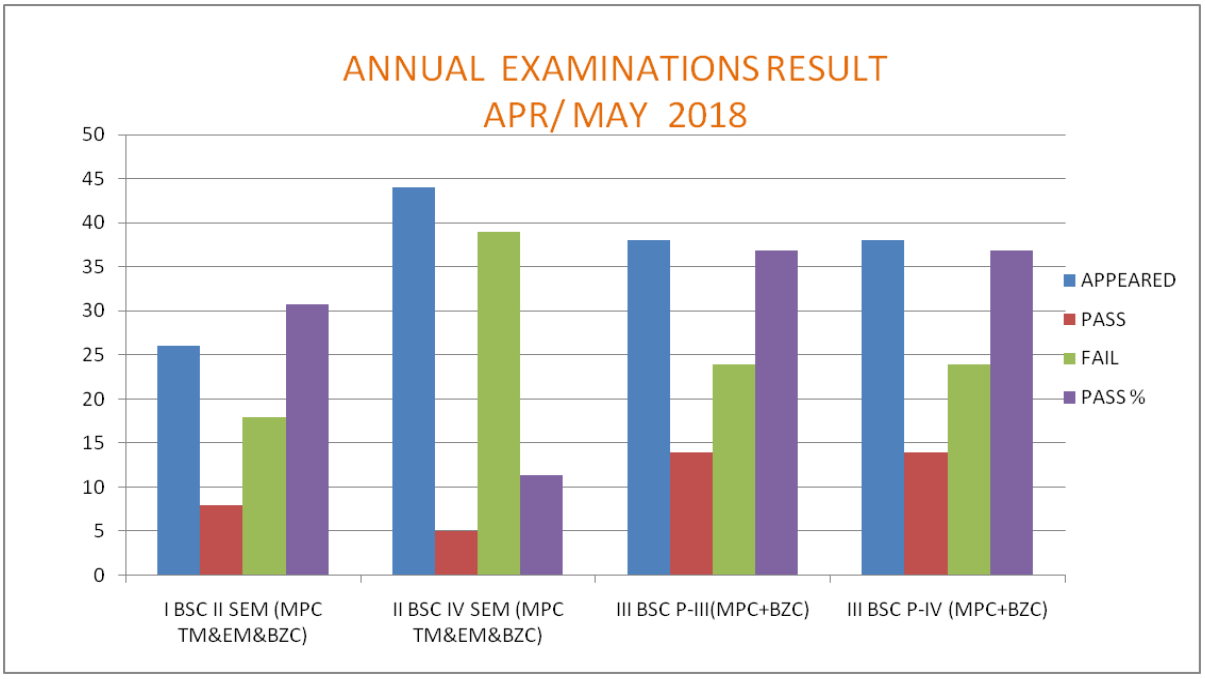
GROUP	Appeared	Pass	Fail	Pass-%
BSC (MPC+BZC)	(15+11)26	15+10	0+1	96%



DEPARTMENT OF CHEMISTRY
KNM GDC MIRYALAGUDA.

RESULT ANALYSIS
SEM & ANNUAL EXAMS APRIL / MAY 2018

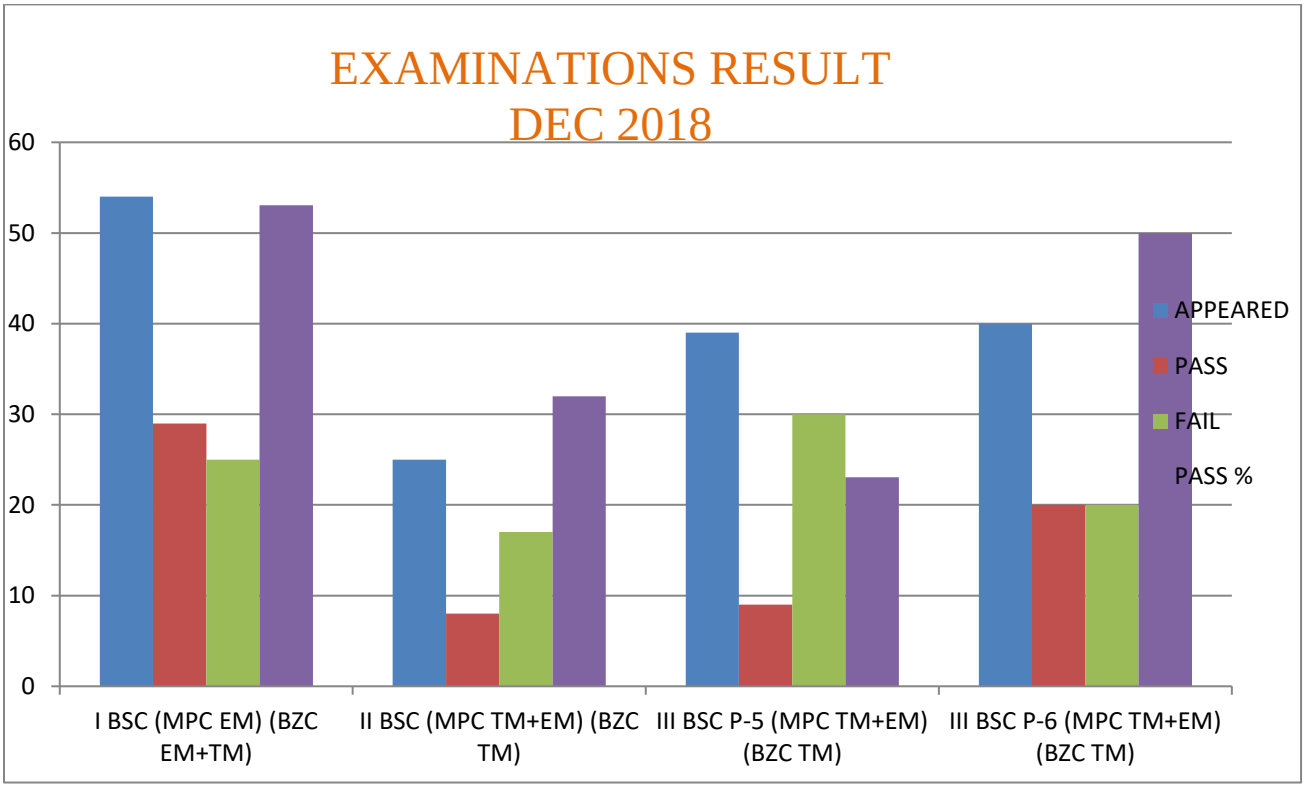
GROUP	Appeared	Pass	Fail	%
I BSC - II SEM (MPC TM&EM&BZC)	(9+7+10)26	(3+0+5)8	18	30.77%
II BSC - - IV SEM (MPC TM&EM&BZC)	(11+8+25)44	(0+0+5)	39	11.37%
III BSC – P-III (MPC+BZC)	(17+7+14)38	(1+1+12)14	24	36.84%
III BSC P- IV (MPC+BZC)	38	14	24	36.84%



DEPARTMENT OF CHEMISTRY
KNM GDC MIRYALAGUDA.

RESULT ANALYSIS
SEM I&III&V EXAMINATIONS DEC 2018

GROUP	Appeared	Pass	Fail	%
I BSC (MPC EM)(BZC EM+TM)	(19+26+9) 54	(7+14+8) 29	25	53.70%
II BSC (MPC TM EM)(BZC TM)	(10+5+10) 25	(3+3+2) 8	17	32.00%
III BSC P-5 (MPC TM EM)(BZC TM)	(10+7+22) 39	(2+4+3) 9	30	23.07%
III BSC P-6 (MPC TM EM)(BZC TM)	(7+10+23) 40	(2+4+14) 20	20	50.00%
Overall	158	66	92	41.78%

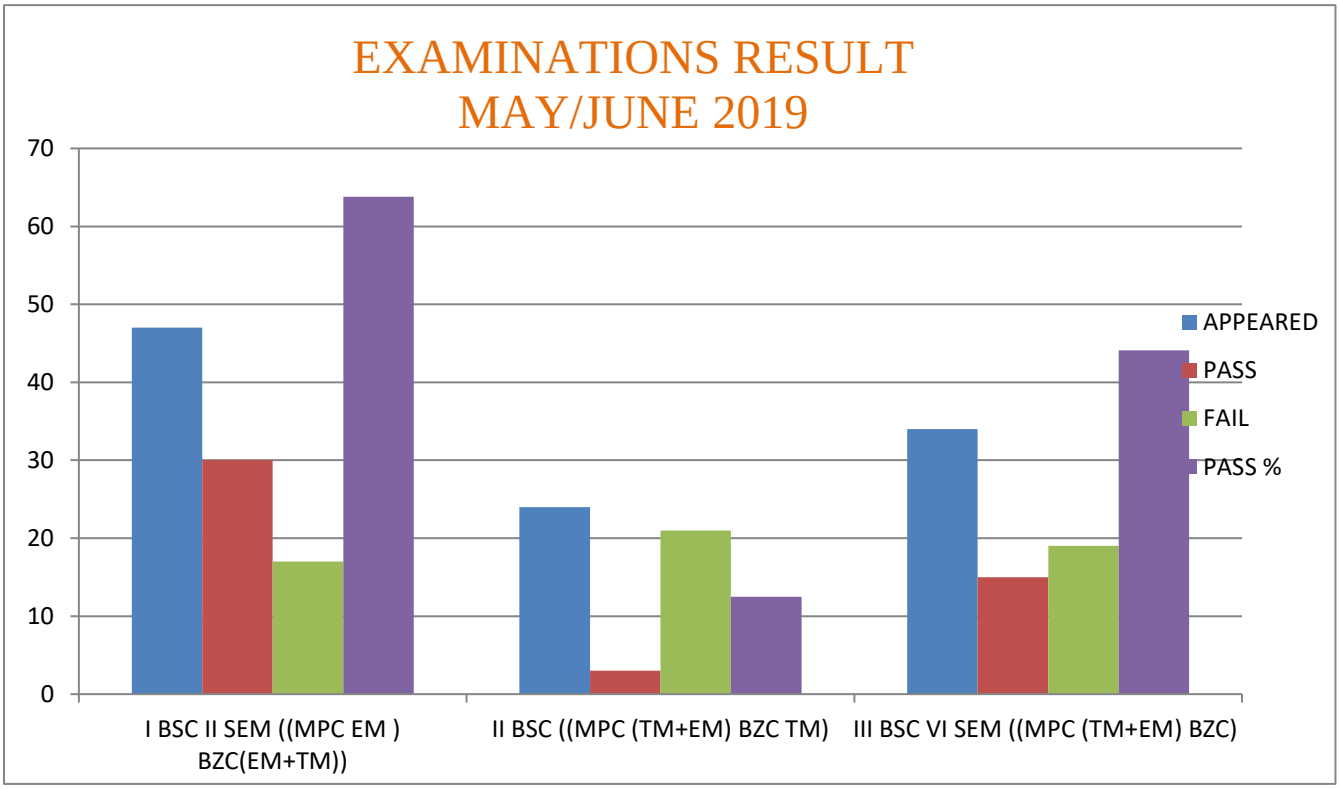


DEPARTMENT OF CHEMISTRY
KNM GDC MIRYALAGUDA

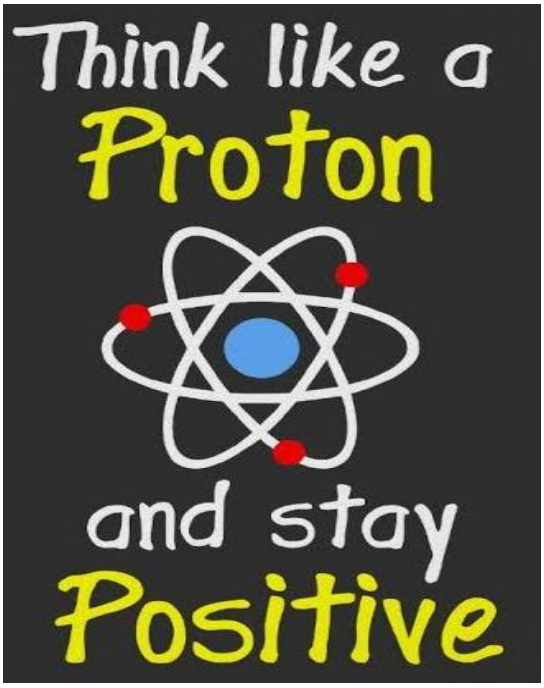
SEM EXAMINATIONS
RESULT MAY / JUNE - 2019

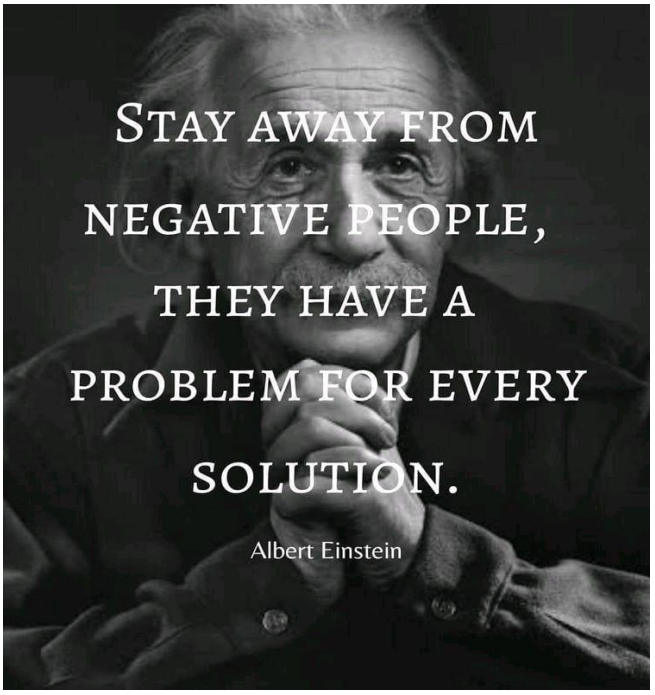
I Bsc - II SEM ,II BSC IVSEM,III BSC VI SEM

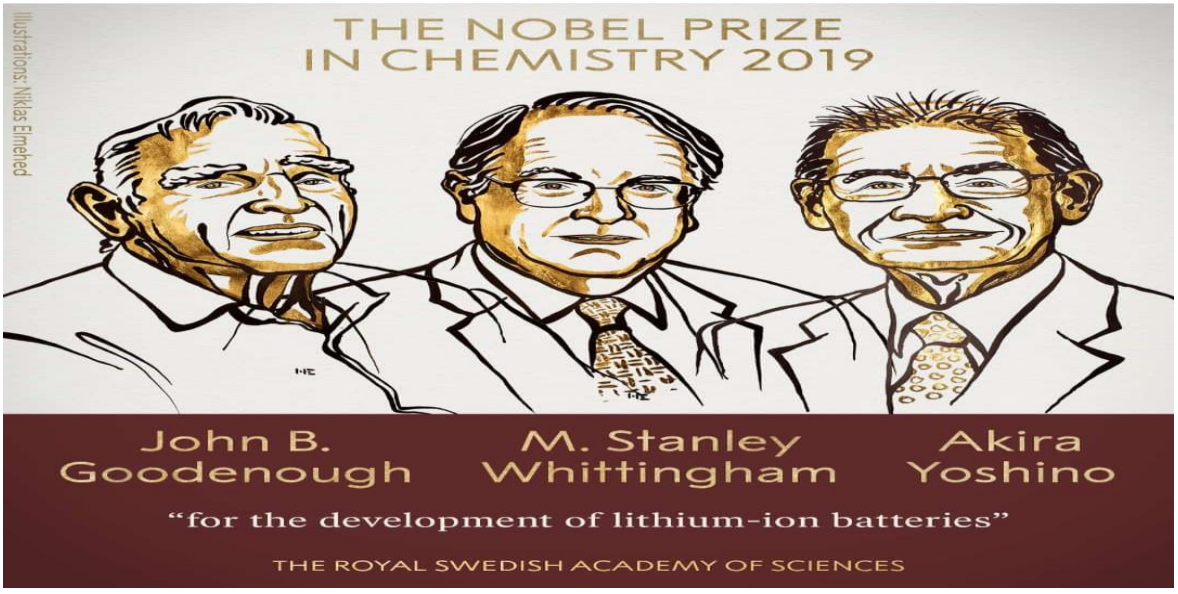
GROUP	Appeared	Pass	Fail	PAS%
I BSC - II SEM(MPCEM&BZCEM&TM)	(17+23+7)47	(5+19+6)30	17	63.8 %
II BSC(MPCTM&EM&BZCTM)	(9+5+10)24	(1+1+1) 3	21	12.5%
I II BSC(MPCTM&EM &BZC)- VI SEM	(5+7+22)34	(0+2+13)15	19	44.1%
Overall	105	48	57	45.7%



XIII.BEST PRACTICE OF OUR DEPARTMENT







Venkat Reddy Vummadi

Dr. Venkat Reddy Vummadi born in India. He received Ph.D in 2006 from IICT, India, under the supervision of Dr. V. Jayathirtha Rao. He moved to UNCC, USA for postdoctoral studies. Later he joined at MIT, USA for higher studies. He received Young Scientist award from DST, India in 2012. Dr. Reddy is working as Scientist at Osmania University, HYD.

Venkat Reddy Vummadi

Design and Synthesis of Novel Organic Photo Imaging Compounds

Design and Synthesis of Novel Organic Photo Imaging Compounds and Their Nanotechnology Applications

Dr. Venkat Reddy Vummadi

M.Sc., Ph.D. PDA (MIT-USA)

Ayurveda	: Trained in Ayurvedic Medicine (2017 to till date)
Visiting Scientist	: American University of Sharjah (AUS) (2016)
Young Scientist	: SERB-DST, NEW DELHI, Osmania University, HYD (2012)
PDA	: Massachusetts Institute of Technology (MIT)-USA (2010)
	(Meeting with Bill Gates in MIT on 21st April 2010)
PDRA	: University of North Carolina at Charlotte-USA (2009)
PH.D.	: Indian Institute of Chemical Technology (IICT) (2007)
M.Sc.	: Organic Chemistry, Osmania University, HYD-TS (2000)
E-mail	: vvreddyou@gmail.com, vvreddyiict@gmail.com
Mobile & Voice	: **+91 9440482899**
Website	: **drvenkatreddyvummadi.com**

Full Name: **Nagireddy Putluri**

- 1. Undergraduate Education: Osmania University, India/B.S/1995-1998; Masters: Osmania University, India/M.S/1999-2001
- 2. Medical Education or Graduate Education (include thesis/dissertation title, advisor): Ph.D National Center for Mass Spectrometry, Indian Institute of Chemical Technology (IICT), Hyderabad (India); 2002-2007

  Dissertation title: Tandem mass spectrometric investigations on selenocumulenes and non-natural amino acid hybrid peptides: Differentiation of isomers of the peptides and some aromatic sulfonic acids.

  Advisor: Dr. Srinivas Ragampeta

- 3. Postgraduate Training (residency, clinical/research fellowship, etc.; source of support, advisor, if applicable)

  Pennington Biomedical Research Center, Louisiana State University Systems, Baton Rouge, LA from June 2007 to Jan 2009; Postdoctoral Associate, Proteomics; Advisor: Dr. Indu Kheterpal Medical College of Georgia Cancer Center, Augusta, GA from Jan 2009 to Jan 2011; Senior Post Doctoral Researcher/Instructor, Metabolomics; Advisor: Dr. Arun Sreekumar

- P.Neelambari get 100/100 marks (BSC, MPC H.NO:401815441506) in chemistry paper-I may-2016 and paper-IVMay-2018 Annual examinations.

- M.Venugopal (BSC BZC H.NO:18044018445015)inSEM-III getGPA10/10 in November2019 Examinations

- Maximum candidates get O grade in chemistry SEM-II May 2018 examinations.

- The Department conducts seminars and Extension Lectures from time to time to enhance the knowledge of the students.Quiz competitions , Essay Writings, Elocutions are held periodically on different occasions like Swatch Bharath, Haritha Haram, Yuva Tarangam, Independence Day, Republic Day etc.,
- The Department keeps strenuous efforts from time to time by motivating the students to face the present competitive world boldly by boosting and building the levels of self confidence among the students.
- The faculty involves and encourages the students in preparing project works and study reports and surveys.
- Our students from I, II and III Year prepared wonderful, Creative and innovative project work on different subjects with a great aesthetic sence.

2014-15				
Year	**Name of Student**	**Marks**	**First / Second**	**H.NO.**
I YEAR	K.ADI SHANKARACHARY	87/100	First	401814441513
	CH.NARESH	82/100	Second	40184441514
II YEAR			First	
			Second	
III - YEAR - III			First	
			Second	
III - YEAR - IV			First	
			Second	
2015-16				
Year	**Name of Student**	**Marks**	**First / Second**	**H.NO.**
I YEAR	P.NEELAMBARI	100/100	First	401815441506
	Y.USHARANI	97/100	Second	401815441021
II YEAR	K.ADI SHANKARACHARY	72/100	First	401814441513
	CH.NARESH	68/100	Second	40184441514
III YEAR			First	
			Second	
III YEAR			First	
			Second	

2016 NOV				
Year	**Name of Student**	**Marks / Grade**	**First / Second**	**H.No.**
I YEAR BSC I-SEM	E.VENKATESH	A+	First	16044018441007
	A,ANIL K.SHARATBABU	A+ A+	SECOND	16044018445501 16044018445511
II YEAR - BSC-ANNUAL	K.ADISHANKARACHARY	72/100	First	401814441513
	CH.NARESH	68/100	Second	401814441514
III YEAR - BSC - ANNUAL (3)		90	First	
			Second	
III YEAR - BSC - ANNUAL (4)		89	First	
		80	Second	

I BSC II SEM APRIL / MAY2017				
Year	**Name of the Student**	**Grade**		**H.No.**
I BSC	P.MURALI	O grade	FIRST	17044018441508
	P.SATHEESH	O	FIRST	17044018445507
	L.KRISHNAMOHAN	A+	SECOND	17044018441507
	MD.KARISHMA	A+	SECOND	17044018441009
2017 II B.SC ANNUAL				
II B.SC	A.JHANSI	74/100	FIRST	401815441004
	P.NEELAMBARI	73/100	SECOND	401815441506
	B.NARESH	72/100	THIRD	401815441008
2017 III B.SC ANNUAL				
III B.SC (III Paper)	K.ADISHANKARACHARY	83/100	First	401814441513
	CH.NARESH	74/100	Second	401814441514
IV Papar	K.ADISHANKARACHARY	82/100	First	401814441513
	K.MADHAVI	81/100	Second	401814445503

B.SC Ist Year I-Sem Nov/Dec - 2017				
I Year B.SC. Sem-I	P.MURALI	A	FIRST	17044018441508
	V.SOMLA	B+	SECOND	17044018445513
	P.SATHEESH	B	THIRD	17044018445507
	L.KRISHNAMOHAN	B	THIRD	17044018441507
B.SC II nd Year III Sem Nov/Dec - 2017				
II B.SC Sem -III	L.NARESH	A+	FIRST	16044018445515
	J.SEETHARAM	B+	SECOND	16044018445510
	K.SHARATBABU	B	THIRD	16044018445511

2018 APRILANNAUAL/ II SEM				
I BSCII SEM	P,MURALI P.SATHEESH	O O	FIRST	17044018441508 17044018445507
	L.KRISHNAMOHAN D.VENKATESH MD.KARISHMA U.NAVEEN	A+ A+ A+ A+	SECOND	17044018441507 17044018445503 17044018441009 17044018441012
II BSC IV PAPER	J.SEETHARAM R.DURGAPRASAD	A A	FIRST	16044018445510 16044018445525
	R.NAGESWAR RAO L.NAREH M.VIJAY	B+ B+ B+	SECOND	16044018445527 16044018445515 16044018445516
III BSC PAPERIII	P.NEELAMBARI Y.USHARANI	81/100 68/100	FIRST SECOND	401815441506 401815441021
III BSC IV PAPER	P.NEELAMBARI Y.USHARANI	100/100 82/100	FIRST SECOND	401815441506 401815441021
2018 DEC				
I BSCISEM II BSCIIISEM III BSC VSEM				
I BSC I SEM	M.VENUGOPAL K.ESTHER RANI	O O	FIRST	18044018445015 18044018445011
	M.VENKATESH B.YAMINI K.ANITHA K.VENKATACHARY K.MOUNIKA	A+ A+ A+ A+ A+	SECOND	18044018445017 18044018445002 18044018445013 18044018441006 18044018441007

	SK.YASIN P.NIKHILASREE	A+ A+		18044018441019 18044018445025
II BSC III SEM	P.MURALI	A	FIRST	17044018441508
	L.KRISHNAMOHAN B.KISHORE V.SOMLA	B+ B+ B+	SECOND	17044018441507 17044018445502 17044018445513
III BSC V SEM VPAPER	L.NARESH	O	FIRST	16044018445515
	S.RAMBABU B.MAHESWARI J.SEETHARAM	A+ A+ A+	SECOND	16044018441012 16044018445505 16044018445510
III BSC V SEM VI A	L.NARESH	O	FIRST	16044018445515
	J.SEETHARAM K.SHARATH BABU	A+ A+	SECOND	16044018445510 16044018445511

I B.SC II Sem Regular May / June - 2019

Year	Name of the Student	Marks / Grade	First / Second	H.T.No
I B.SC. II Sem	M.VENUGOPAL K.CHANTINAIK K.ESTHER RANI M.VENKATESH N.SINDURI P.NIKHILASREE A.BIXAM M.SOWJANYA	O O O O O O O O	FIRST	18044018445015 18044018445010 18044018445011 18044018445017 18044018445024 18044018445025 18044018445501 18044018445506
	B.YAMINI K.ANITHA M.KUMAR MD.SHIREEN N.DIVYA N.MOUNIKA N.ANUSHA	A+ A+ A+ A+ A+ A+ A+	SECOND	18044018445002 18044018445013 18044018445016 18044018445019 1804401845021 18044018445022 18044018445023
II B.SC IV Sem Regular Results May / June - 2019				
II B.SC IVSEM	P.MURLI	A	First	17044018441508
	U.NAVEEN P.SATHEESH	B+ B+	SECOND	17044018441012 17044018445507
III B.SC VI Sem Regular Results May / June - 2019				
III B.SC.VISEM	**L.NARESH**	**O**	**FIRST**	16044018445515
	J.SEETHARAM **P.GOPI** **V.MUTHYALARANI** **R.DURGAPRASAD**	A+ A+ A+ A+	SECOND	16044018445510 16044018445524 16044018445536 16044018445525
I BSC I Sem Results Nov / Dec 2019				
Year	**Name of the Student**	**Marks / Grade**	**First / Second**	**H.T.No**
I B.SC I SEM	A.SARASWATHI S.SRAVANI	A+ A+	FIRST	19044018445003 19044018578002
	P.BHARATH A.SARITHA	B+ B+	SECOND	19044018445018 19044018578001

II B.SC III SEMRegular Results Nov / Dec - 2019				
II B.SCIIISEM	M.VENUGOPAL	O	FIRST	18044018445015
	B.YAMINI	O		18044018445002
	K.CHANTINAIK	O		18044018445010
	K.ESTHER RANI	O		18044018445011
	M.KUMAR	O		18044018445016
	M.VENKATESH	O		18044018445017
	N.MOUNIKA	O		18044018445022
	N.SINDURI	O		18044018445024
	SK.ASMA	O		18044018445029
	M.SOWJANYA	O		18044018445506
	K.ANITHA	A+	SECOND	18044018445013
	MD.SHIREEN	A+		18044018445019
	MD.NAZMA	A+		18044018445020
	N.DIVYA	A+		18044018445021
	N.ANUSHA	A+		18044018445023
	P.AKHILKUMAR	A+		18044018445027
	K.MANIKANTA	A+		18044018445504
	MD.MUKTHAUNNISA	A+		18044018445505
	P.KRISHNAVENI	A+		18044018445509
III B.SC V Sem				
III B.SC V Sem	L.KRISHNAMOHAN	O	FIRST	17044018441507
	P.MURALI	O		17044018441508
	K.ANDALU	A+	SECOND	17044018441506
	M.NARESH	A+		16044013441513
	G.KIRANCHARY	A+		17044018445504

XIV PERTICULAR INSTITUTIONAL SOCIAL RESPONSIBILITY & EXTENSIONACTIVITIES STUDENTS CLASS SEMINOR REPORT

DEPARTMENT OF CHEMISTRY: UNIV. COLLEGE OF SCIENCE: O.U. Hyd.

Research Design Seminar Report

The Research Design Seminar of **Mr. B. Venkateswarlu** was conducted in Lecture Hall No. I on 25.08.2014 at 12.30 P.M. in the Department of Chemistry, O.U on the topic of "QSAR AND DOCKING STUDIES OF INHIBITORY AGENTS FOR ALZHEIMER AND PARKINSON'S DISEASES AND THEIR MOLECULAR MODELLING STUDIES'. The candidate has presented detailed comprehensive literature review of the Research topic and the plan of work satisfactorily.

(Prof. V. Manaiah)
(Supervisor)

(Prof. T. Parthasarathy)
(Subject Expert)
Professor
Department of Chemistry
Osmania University
HYDERABAD - 500 007.

25/8/14
(Prof. L.N.Sharada)
(Chair Person BOS)

(Prof. V. Uma)
Head
Department of Chemistry

HEAD
Department of Chemistry
Osmania University
Hyderabad-500 007.

DEPARTMENT OF CHEMISTRY: UNIV. COLLEGE OF SCIENCE: O.U. Hyd.

Progress of Research Seminar Report

The Progress of Research seminar of **Mr. B. Venkateswarlu** was conducted in Lecture Hall No.I on 20.10.2014 at 1100 A.M. in the Department of Chemistry, Osmania University. The seminar was given as an open one to all the Faculty members and Research Scholars on the topic of **"QSAR AND DOCKING STUDIES OF INHIBITORY AGENTS FOR ALZHEIMER AND PARKINSON'S DISEASES AND THEIR MOLECULAR MODELLING STUDIES"** gave satisfactory answers for all the questions asked.

(Prof. V. Manaiah)
(Supervisor)

DEPARTMENT OF CHEMISTRY
OSMANIA UNIVERSITY
HYDERABAD.

(Prof. T. Parthasarathy)
(Subject Expert)
Professor
Department of Chemistry
Osmania University
HYDERABAD - 500 007.

20/10/14

(Prof. L. N. Sharada)
Chair Person BOS
Department of Chemistry

CHAIRMAN
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(Prof. V. Uma)
Head
Department of Chemistry

HEAD
Department of Chemistry
Osmania University
Hyderabad-500 007.

DEPARTMENT OF CHEMISTRY: UNIV. COLLEGE OF SCIENCE: O.U. HYD.

Pre – Submission Seminar Report

The Pre-Viva examination of **Mr. B. Venkateswarlu** conducted in the Department of Chemistry, O.U on 06.11.2015 at 1.00 P.M. The pre-viva was presented as a seminar, open to all Teachers and Research Scholars.

The candidate was asked to present the work carried out by him and then asked questions related to his topic of work **"INHIBITORY AGENTS FOR ALZHEIMER AND PARKINSON'S DISEASES AND THEIR MOLECULAR MODELLING STUDIES"**. The candidate has answered all the questions satisfactorily.

Earlier seminars were conducted on 25.08.2014 and 20.10.2014 as certified by the supervisor.

Based on the evaluation of the work done and satisfactory performance of the candidate in the pre-viva presentation, he is permitted to submit thesis for Ph.D in Chemistry, Osmania University.

(Prof. V. Manaiah)
Supervisor
Professor
Department of Chemistry
Osmania University
HYDERABAD - 500 007

(Prof. G. Venkateshwarlu)
Chairman BOS
CHAIRMAN
Board of Studies in Chem
Dept. of Chemistry
Osmania University, Hyd

(Prof. T. Parthasarathy)
Subject Expert
Professor
Department of Chemistry
Osmania University
HYDERABAD - 500 007

(Prof. G. Veerabhadram)
Head
Department of Chemistry
HEAD
Department of Chemistry
Osmania University
Hyderabad-500 007.

విద్యార్థుల కెమిస్ట్రీ కల్పతరువుకు Ph.D ప్రధానం

డా॥ బి. వెంకటేశ్వర్లు

గురువు, మిత్రుడు, శ్రేయోభిలాషి, స్వాప్నికుడు, నిజాయితీపరుడు, సర్వావరణపేత్త ఎంత ఎదిగినా ఒదిగి ఉండే సలహాదారుడు నిరంతర అన్వేషి మా ఆర్గానిక్ కెమిస్ట్రీ వెంకటేశ్వర్లు సారు. తెలంగాణ రాష్ట్రం, నల్లగొండ జిల్లా, గరిడేపల్లి మండలం, పాముగోడు గ్రామంలో బొలిశెట్టి వీరయ్య, రామచంద్రమ్మ గార్లు చివరి సంతానం. గ్రామీణ ప్రాంతాల పేద విద్యార్థుల ప్రతిభను వెలికితీయడానికి మిర్యాలగూడ కె.ఎన్.ఎమ్. డిగ్రీ కళాశాల కేంద్రంగా వివిధ స్థాయిలలో సుమారు లక్షమంది విద్యార్థులకు సబ్జెక్టు పట్ల ఉన్న భయాన్ని పోగొట్టి ఉన్నత స్థానాలలో స్థిరపడుసట్లు భవిష్యత్ తీర్చిదిద్ది వారి కెమిస్ట్రీ నోటు పుస్తకాలను ఎప్పటికీ పదిలంగా దాచుకొనేలా విద్యార్థులను మలిచిన స్వాప్నికుడు. తన పూర్వ విద్యార్థుల ఎదుగుదలనే తాను స్ఫూర్తిగా తీసుకొని ఎటువంటి ప్రభుత్వ సహాయం లేకుండానే తన విభాగం పరిధిని దాటి మానవాళికి ఉపయోగపడే అంశాలలో ముఖ్యంగా "ఆల్జీమర్ మరియు పార్కిన్సన్స్ వ్యాధులకు నిరోధక మందుల రూపకల్పన" అంశాలలో విశ్లేషణలు జరిపి అంతర్జాతీయ పరిశోధన వ్యాసాలతో పి.హెచ్.డి. పూర్తి చేసిన నిరంతర అన్వేషి. తెలంగాణ ఉద్యమానికి ప్రభావితుడై కె.సి.ఆర్ గారి తొలి పాదయాత్రలో మూసీనది వంతెనపై స్వాగతం పలికి, నదీమ తల్లికి రాగి నాణెంను సమర్పించే సందర్భంలో ఆత్మబంధువులా ప్రక్కనే ఉండి, తెలంగాణ మట్టి మనుషుల ఫోరం ఏర్పాటు చేయుటలో సలహాదారుడు.

1. ఆవేశంలో కోల్పోయినదాన్ని ఆలోచనతో సాధించు

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OU655902

Osmania University

Faculty of *Science*

This is to certify that *B Venkateswarlu*
son / daughter of *B Veeraiah*
having pursued a course of study prescribed by this University and having passed the requirements by Examination and by thesis has been admitted to the Degree of

Doctor Of Philosophy

in the Subject of *Chemistry*
The title of the Thesis is :
Inhibitory Agents for Alzheimer and Parkinson's Diseases and their Molecular Modelling Studies

The candidate has been declared qualified for the award of the Degree of Ph.D.on *03 Sep 2016*

Given under the seal of the University

Hyderabad
Dated 29 SEP 2016

Vice-Chancellor

- Published a paper on "CORELATION OF 5, 6, 7, 8 - TETRAHYDROACRIDINE BASED SCAFFOLD INHIBITORYAGENTS FOR ALZHEIMER DISEASE" in "IJPBS" Journal.

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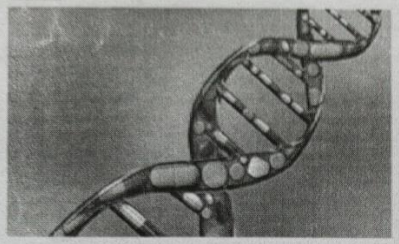

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CORRELATION OF 5, 6, 7, 8-TETRAHYDROACRIDINE BASED SCAFFOLD INHIBITORY AGENTS FOR ALZHEIMER DISEASE.

VENKATESWARLU BOLISETTY* AND MANAIAH.V[1]

[1]Department of Chemistry, K.N.M G.D.C, Miryalaguda, A.P, INDIA –508207.
[1]Department of Chemistry, Osmania University, Hyderabad, INDIA – 500007.

ABSTRACT

Alzheimer's disease (AD) is a progressive neurodegenerative disorder and one of the most common causes of dementia in the elderly. Acetylcholine sterase (AChe) inhibitors are the main drugs used in the treatment of AD. In this work, docking studies have been performed in order to understand the interaction between 5, 6, 7, 8-tetrahydroacridine inhibitor and AChe. The increase observed in the calculated binding affinities between inhibitor and AChe, reflect the experimental inhibitory activity expressed in terms of the half maximal inhibitory concentration (IC_{50} = 0.002 to 13.0 µm) of the above inhibitor. The AM1 and PM3 semi-empirical methods are used to estimate the predictive power of final QSAR equations. QSAR and molecular docking studies indicated that, 2-chloro, 9-amine derivative of 5, 6, 7, 8-tetrahydroacridine showed the highest percentage of concentration and can become a potential lead for treating Alzheimer's disease.

KEYWORDS: Inhibitor, 5, 6, 7, 8-tetrahydroacridine derivatives, QSAR, Semi-empirical methods, Regression analysis, DOCKING, AChe.

VENKATESWARLU BOLISETTY
Department of Chemistry, K.N.M G.D.C, Miryalaguda, A.P, INDIA –508207.

**Corresponding author*

- Published a paper on "QSAR AND DOCKING STUDIES OF APHORPHINE BASED DERIVATIVES AS EFFICACIOUS PARTIAL ANTAGONISTS FOR PARKINSON'S DISEASE" in "IJPBS" journal.

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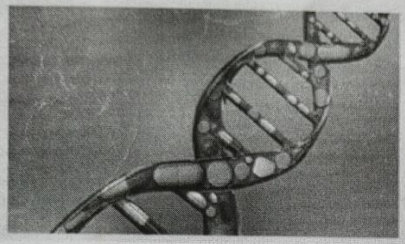

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Bioinformatics

International Journal of Pharma and Bio Sciences

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QSAR AND DOCKING STUDIES OF APHORPHINE DERIVATIVES AS EFFICACIOUS PARTIAL ANTAGONISTS FOR PARKINSON'S DISEASE

VENKATESWARLU BOLISETTY[1*], NAGESWAR RAO.K AND MANAIAH.V

[1]Department of Chemistry, K N M G D C, Miryalaguda-508 207, INDIA.
Department of Chemistry, Osmania University, Hyderabad-500007, INDIA.

ABSTRACT

Parkinson's disease is caused due to enhanced dopaminergic activity in the substantia nigra, a region of the midbrain. Dopamine Receptors are the main drugs used in the treatment of Parkinson's disease. In this work, docking studies have been performed in order to understand the interaction between Aphorphine inhibitor and Dopamine Receptors (D2). An increase in the calculated binding affinities between inhibitor and D2, reflects the experimental inhibitory activity, expressed in terms of the half maximal inhibitory concentration (IC_{50}), which is found to be in the range 0.0004 to 11.5 µm, for the inhibitors employed. The AM1 and PM3 semi-empirical methods have been used to estimate the predictive power of final QSAR equations. QSAR coupled with molecular docking studies indicated that, [6aR]-6, 10 dimethyl-5, 6, 6a, 7-tetrahydro-4H dibenzo [de, g] quin derivative of Aphorphine showed the highest percentage of concentration and can become a potential lead for treating Parkinson's disease.

KEYWORDS: Inhibitor, Aphorphine derivatives, QSAR, Semi-empirical methods, Regression analysis, DOCKING, DOPAMINE Receptors (D2).

VENKATESWARLU BOLISETTY
Department of Chemistry, K N M G D C, Miryalaguda-508 207, INDIA.

*Corresponding author

- Published a paper on "A STRUCTURE BASED QSAR AND DOCKING STUDIES ON DONEPZILDERIVATIVES AS AChE INHIBITORS" in "IJRCS" journal. on 7-4-2017

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Jammikunta, Karimnagar, Telangana State, India

A Structure-Based Qsar And Docking Studies On Donepzil Derivatives As Selective Ache Inhibitors

Dr. B. Venkateshwarlu
Department of Chemistry, K.N.M G.D.C, Miryalaguda, T.G. INDIA –508207.
Email - venkateswarlu.bolisetty@gmail.com

1. INTRODUCTION:

Donepzil Derivatives marketed under the trade name Aricept and now sold as a generic by multiple suppliers, is a centrally acting reversible acetylcholinesterase inhibitor Its main therapeutic use is in the palliative treatment of Alzheimer'sdisease. Donepzil Derivatives should be used with caution in people with cardiac disease, The precise mechanism of action of Donepzil Derivatives as selective Antagonist in patients with Alzheimer's disease[42]. Certainly Alzheimer's disease involves a substantial loss of the elements of the cholinergic system and it is generally accepted that the symptoms of Alzheimer's disease are related to this cholinergic deficit, particularly in the cerebral cortex and other areas of the brain. Donepezil and their derivatives binds and inactivates reversibly the cholinesterases, thus inhibiting hydrolysis of acetylcholine. This results in an increased acetylcholine concentrations at cholinergic synapses.Acetylcholine sterase (AChE) inhibitors are the main drugs used in the treatment of AD [3-6]. In this work, docking studies have been performed in order to understand the interaction between inhibitor and AChe. The increase observed in the calculated binding affinities between inhibitor and AChe, reflect the experimental inhibitory activity expressed in terms of the half maximal inhibitory concentration (IC_{50} = 0.0092 to 36.8 μm) of the above inhibitor. The AM1 and PM3 semi-empirical methods are used to estimate the predictive power of final QSAR equations. QSAR and molecular docking studies indicated that, (1-benzylpiperidyl)5,6-dimethoxy,2,3-dihydro indene-1-one derivative of Donepzil showed the highest percentage of concentration and can become a potential lead for treating Alzheimer's disease.the loss of memory is directly correlated with the abridged cholinergic neuro-transmission, caused by the pronounced diminish in the levels of the neuro transmitter [7-9]. AChE abnormal activity of human acetyl-cholinesterase (hAChE), the enzyme responsible for hydrolysis of AChE, was attributed to the reduced level of AChE. Treating AD was achieved through inhibiting the anomalous action of AChE by various specific Ache inhibitors such as

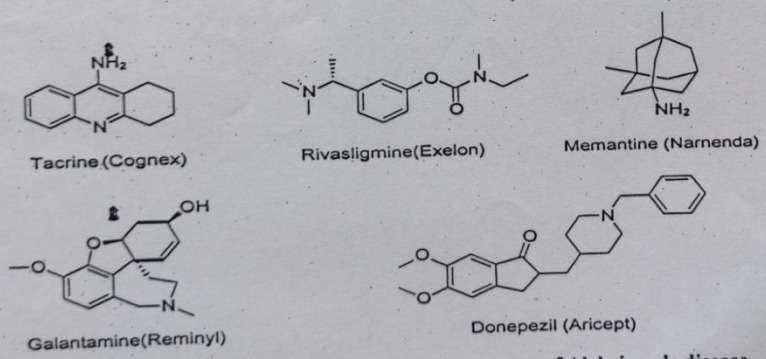

Fig1: Marketed drugs for the treatment of Alzheimer's disease.

Donepzil Derivatives is reversible acetylcholinesterase inhibitors that readily crosses the blood-brain barrier to reduce the breakdown of acetylcholine is too basic heterocyclic compound. It is a raw material used for the production of dyes and some valuable drugs. Many Donepzil Derivatives also have antiseptic properties. Donepzil Derivatives and related derivatives bind to DNA and RNA through intercolation mode [10–12].

2. MATERIALS AND METHODS

Bioassay: In the present investigation bioassay of 15 derivatives of Donepzil found in the literature [39] whose IC_{50} values are known. The criteria for selection of molecules are

- Published a paper on "ANTIBACTERIAL STUDIES OF ECO-FRIENDLY PHYTOSYNTHESIZED PVA CAPPED AgNP'S USING PLASSIFLORA EDULIS" in "UGC" journal. July 2018.

ANTIBACTERIAL STUDIES OF ECO-FRIENDLY PHYTO SYNTHESIZED PVA CAPPED AgNPs USING PASSIFLORA EDULIS

Sandupatla Raju[1], Bolisetty Venkateswarlu[2], Dongamanti Ashok[3*]

[1]Research scholar, [2]Degree lecturer, [3]Assistant professor,
Green and Medicinal Chemistry Laboratory, Department of Chemistry, Osmania University, Hyderabad-500007, Telangana, India.
Email address: [1]rajusandupatla5@gmail.com, [2]venkateswarlu.bolisetty@gmail.com, [3]ashokdou@gmail.com,

Abstract: *The cutting-edge investigation reports about the evaluation of antibacterial studies of AgNPs (AgNPs) using an aqueous leaf extract of Passiflora edulis as reducing agent and polyvinyl alcohol (PVA) as a capping agent. This is simple, one pot, and rapid, eco-friendly, non-toxic and cost-effective method for the synthesis of AgNPs. Synthesis of AgNPs using plant extract has more advanced biological applications as they are the sources of the active compounds which were used in many medical remedies. So this active compound of phytochemicals from the Passiflora edulis plant extracts acts as a reducing agent for the synthesis of AgNPs. The synthesized PVA capped AgNPs were characterized by using diversify instrumental techniques such as UV-Vis spectroscopy reveals the formations of AgNPs as they depicting maximum absorption peak at 436 nm due to surface plasmon resonance. The Fourier transform infrared spectroscopic studies were conducted to know the phytochemicals responsible for the synthesis of AgNPs from the studies of the vibration bands of functional groups. The crystalline nature of the synthesized AgNPs had been studied by X-ray diffraction studies and the average particle size was found to be 24 nm calculated using Debye-Scherrer formula. The morphology of the AgNPs was studied by Scanning electron microscopy and the elemental signal profile carried out automatically with Energy dispersive spectroscopy, which coupled with SEM as it shows spherically shaped particles and the energy dispersive spectroscopy data showing a good atomic and weight content of stable silver. The characterized AgNPs afterward used for the antibacterial studies of the four harmful bacteria Escherichia coli, Bacillus subtilis, Pseudomonas putida, and Staphylococcus aureus, which exhibited high activity. The conducted studies constitute the premise for further investigations of the potential use of AgNPs as a chemotherapeutic.*

Keywords: *PVA capped AgNPs, Passiflora edulis, Scanning electron microscopy, X-ray diffraction, Antibacterial studies*

1. INTRODUCTION:

Currently, the nanoscience and nanotechnology become a broader area because of its increase of usage in the many fields. Nanoparticles possess advanced applications based on their particle size, distribution, capping agents, shape, and other morphological features. They are show difference in properties and applications while compared to their bulk state because they have a large volume to surface ratio as particle size decreases the volume to surface ratio was increasesd due to this fact, nanotechnology becomes the most emerging area in the

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OU CHEMISTRY ALUMNI FALICITATION TO VC Prof.K.SATYANARAYANA

What is Science Day

Theme: National Science Day is being celebrated every year to widely spread a message about the significance of scientific applications in the daily life of the people

Occasion:
Every year 28th February is celebrated as National Science Day. This Day is celebrated to commemorate the Discovery of the Raman Effect by Indian Scientist Sir Chandrasekhara Venkata Raman

Inspiration to students:
Raman Effect was discovered by spending just 200 to 500 Indian Rupees
If we think that money is not a matter, mind is matter

Home take message for the students:
A=1, B=2, C=3, ——— Z=26
LUCK = 47
KNOWLEDGE = 96
HARD WORK = 98
ATTITUDE= 100
ATTITUDE PLAYS MOST IMPORTANT ROLE IN THE LIFE

Message:
There fore I request to teachers to inspire the students taking the following example of Raman effect

So, if inspired student thinks that money is not a matter, poverty, caste is not matter, it matters is the only attitude to achieve anything in the life ..... Dr. K. Nagaiah

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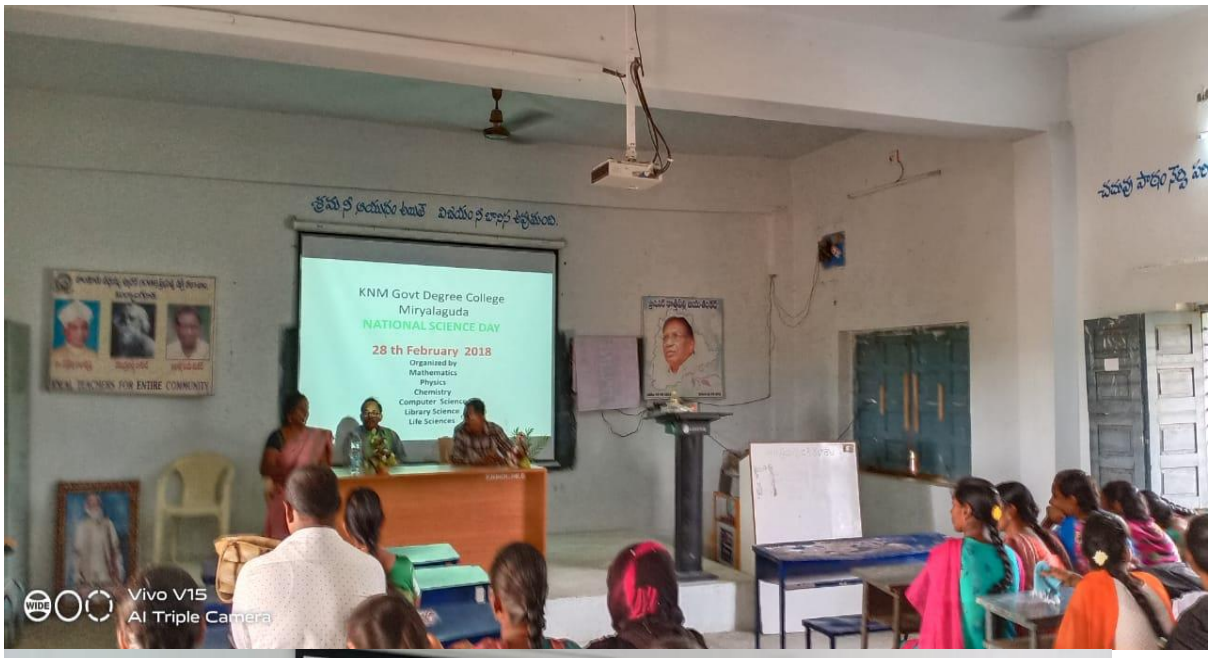
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యూనిట్ - 2

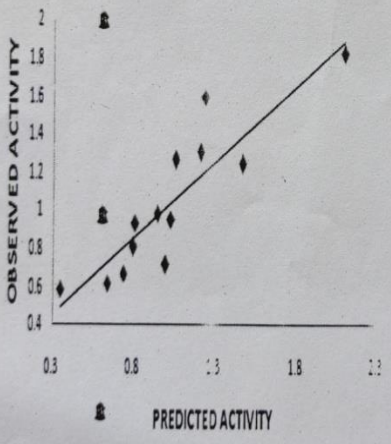
GALANTAMINE FOR DEMENTIA DUE TO ALZHEIMER DISEASE AND THEIR MOLECULAR MODELLING STUDIES.

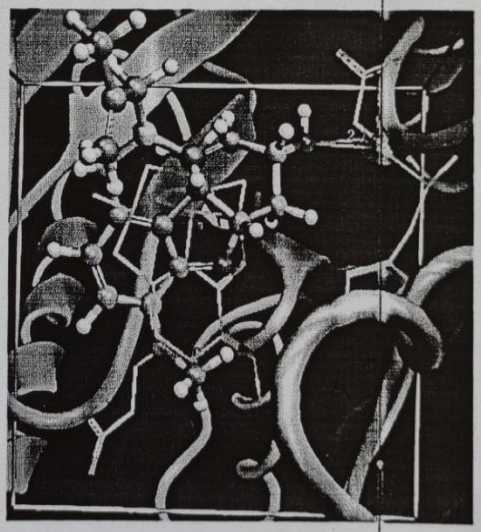
Dr. B.VENKATESWARLU *

Department of Chemistry, K.N.M G.D.C, Miryalaguda, T.G. INDIA –508207.

ABSTRACT: Acetylcholine sterase (AchE) inhibitors are the main drugs used in the treatment of Alzheimer Disease. Complex of the anti-Alzheimer drug Galantamine with acetylcholinesterase centrally active cholinesterase inhibitor that has been used to counter the effects of muscle relaxants as a respiratory stimulant and in the treatment of Alzheimer's disease and other central nervous system disorders. In this work, docking studies have been performed in order to understand the interaction between Galantamine inhibitor and AchE. The AM1 and PM3 semi-empirical methods are used to estimate the predictive power of final QSAR equations. QSAR and molecular docking studies indicated that, derivative of Galantamine showed (IC50 = 0.35 to 2.25 µm) the highest percentage of concentration and can become a potential lead for treating Alzheimer's disease.

Keywords: Inhibitor, A.D, AChE. QSAR, AM1 and PM3, Regression analysis, DOCKING.





Plot of Observed Verses Predicted activity and secondary structure of Galantamine with AChE

***Corresponding Author Email:** venkateswarlu.bolisetty@gmail.com Mobile: +91-9908930386

SAGAR INSTITUTE OF TECHNOLOGY

SAGAR GROUP OF INSTITUTIONS

Approved By AICTE New Delhi, Affiliated to JNTU Hyderabad
Flame of Forest, Urella, Chevella-Urella Road, Chevella, R.R Dist, AP – 501 503. www.svvr.org

SEMINAR ON "BIG DATA ANALYTICS"

In association with

Hewlett Packard Enterprise India Limited (HP) and Startup Curation

Certificate of Participation

This is to certify that Mr/~~Ms~~/Dr: B. VENKATESWARLU

~~student~~/faculty of HUMANITIES *Department of* CHEMISTRY

_____ *participated in one day Seminar on "Big Data Analytics" held at our college premises on 7th October-2015.*

	Dean	Secretary
APJ EEHD - HP Software Education Initiatives (HP)		
Mr. Mangalam Singhania	Dr. K.M.Doraiswamy Reddy	Mrs.W.Malathi

SRI VIDYARANYA AVASA VIDYALAYAM

(Run by Sri Saraswathi Vidyapeetham)

SRI SHARADADHAMAM- Bandlaguda Jagir, Rajendra Nagar (M), (R.R.Dist).
Ph.No. 040-20025726, 040-65121742,9553888801, - E-mail emails: ksksvav@gmail.com,
svav.sharadadhamam@gmail.com; www.svavsharadadhamam.org

CERTIFICATE

SREE VIDYARANYA AVASA VIDYALAYAM ★ SREE SARADADHAMAM, R.R. DIST. ★

This is to certify that Sri. Dr. B.Venkateswarlu garu attended the state level science fair at SVAV Sri Sharadadhamam- run by Sri Saraswathi vidyapeetham as a Judge of the all the events and interacted with our students in seminars. The programme is being conducted during the days from 18th October to 22nd October 2016.

We are appreciating his efforts for making the event successfully during the programme and we are thankful to him for his support and expecting in future.

HEAD MASTER
Sree Vidyaranya Avasa Vidyalayam
Sree Saradadhamam Bandlaguda Jagir,
Ranga Reddy Dist. - 86.

Dr.M.Thirumala
M.Sc., B.Ed, Ph.D
Confidential Section
Asst. Controller of Examinations

MAHATMA GANDHI UNIVERSITY
Yellareddyguda, Nalgonda-508 254 (T.S)
Ph: Off: 08682-221907, Fax: 08682-221903
(www.mguniversity.in)

No. 40/ACOE/MGU/NLG/2018

Date: 26.10.2018

ATTENDANCE CERTIFICATE

~~Smt~~/Sri./Dr. B.VENKATESWARLU Asst.Prof/Asso.Prof.in

Chemistry of KNM GDC Miryalaguda has

attended UG Moderation Board Meeting at Mahatma Gandhi University, Nalgonda on 26.10.2018. This may be treated as on duty.

Asst. Controller of Examinations
Asst. Controller of Examinations
(Confidential)
Examination Branch
Mahatma Gandhi University
NALGONDA-508 254. T.S.

Dr.M.Thirumala
M.Sc., B.Ed., Ph.D
Confidential Section
Asst. Controller of Examinations

MAHATMA GANDHI UNIVERSITY
Anneparthy, Nalgonda-508 254 (T.S.)
(confidentialmgu@gmail.com)

No. 81/MGU/COE/2019

Date: 21.02.2019

ATTENDANCE CERTIFICATE

~~Smt~~/Sri./Dr. B. VENKATESWARLU Asst.Prof/Asso.Prof.in

CHEMISTRY of KNM GDC MIRYALAGUDA has

attended the UG Moderation Board Meeting at Mahatma Gandhi University on 21.02.2019.

This may be treated as on duty.

Assistant Controller of Examinations
Asst. Controller of Examinations
(Confidential)
Examination Branch
Mahatma Gandhi University
NALGONDA-508 254. T.S.

सत्यमेव जयते

UNIVERSITY GRANTS COMMISSION
Ministry of HRD, Govt. of India
SOUTH EASTERN REGIONAL OFFICE
HYDERABAD

ज्ञान-विज्ञान विमुक्तये

FREE ONLINE EDUCATION
swayam
शिक्षित भारत, उन्नत भारत

Certificate of Participation

This is to certify that Dr. BOLISETTI VENKATESWARLU Asst. Prof. of Chemistry KNMGDCMIRYALAGUDA has attended the UGC Orientation Workshop on "*Adoption, Promotion & Production of MOOCs for SWAYAM Platform*" organized by South Eastern Regional Office, University Grants Commission, Hyderabad on 31st August, 2018 at Maulana Azad National Urdu University, Gachibowli, Hyderabad.

University Grants Commission HYDERABAD South Eastern Regional Office

(Dr.G.Srinivas)
Joint Secretary

CERTIFICATE OF PARTICIPATION

Dr. B. VENKATESWARLU ..... has attended One Day Training Program organized by Mahatma Gandhi University, Nalgonda in association with UNDP-DISHA for Enhancing Employability of Women Students on 18-02-2019 from 10:00 am to 04:00 pm in Seminar Hall, Mahatma Gandhi University, Nalgonda.

18/2/19

Dr.Y. PRASHANTHI
DIRECTOR
PLACEMEMNT CELL
MGU, NLG.

Web Site: www.tslprb.in
Email: convenertslprbt18@gmail.com

Phone: Off: +91-40-3242 2253
Fax: +91-40-2315 8665

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
(Established by JNTU Act No. 30 of 2008)(Accredited with 'A' Grade by NAAC)
Kukatpally, Hyderabad – 500 085 – Telangana - INDIA.

Dr. N Yadaiah
B.E. (OU), M.Tech (IIT KGP), Ph.D (JNTU)
FIMEEE, FIE, FIETE, MSSI, MISTE
Professor of EEE & REGISTRAR,
CONVENER, TSLPRBT-2018

Lr.No. JNTUH / TSLPRBT–2018/OBSERVERS/2018 **Dt. .09.2018**

Dear Sir/Madam,

Sub: JNTUH - TSLPRBT– 2018 – Appointment of Observers – Reg. Sri. Nagarjuna Degree college.

The Convener, TSLPRBT–2018 is pleased to appoint you as OBSERVER for the Regional Centre 1705 for the TSLPRBT–2018 test to be conducted on **30-09-2018.** You are requested to report to the Regional Coordinator on 29-09-2018 at 10.00AM.

You are eligible for remuneration of Rs. 650/- per session on the day of examination and Rs. 400/- for the previous day and Local conveyances of Rs. 200/- which has to be collected from the Chief Superintendent of the test centre. The guidelines to the observers and observer's report (to be filled by observer) are herewith enclosed. It is mandatory that every observer must submit an observer's report to the Convener regarding the conduct of the examination at the test centre to which the observer is appointed.

NOTE: You are requested to send the acceptance letter to the Regional Coordinator on or before **22-09-2018**. If the acceptance letter is not received by Regional Coordinator before that date, it is understood that you are not interested to act as Observer.

To
Dr. B. Venkateshwarlu
KNM GDC
Miryalguda

Sd/-
CONVENER, TSLPRBT– 2018

Estd : 2014 केन्द्रीय विद्यालय मिर्यालगूडा
KENDRIYA VIDYALAYA MIRYALAGUDA
(Ministry of H.R.D., Govt. of India)
OPP. NSP CAMP GROUND, MIRYALAGUDA TOWN, NALGONDA DISTRICT, TELANGANA STATE – 508207
फोन नंबर / PHONE No.(08689) 240123 Website: kvmiryalaguda.org ई मेल / E.Mail : kvmiryalaguda@gmail.com

F.1-13/KVMLG/2018-19/ Date: 23.02.2019

ATTENDANCE CERTIFICATE

It is to certify that the following Educationists have attended Kendriya Vidyalaya Miryalaguda on 23.02.2019 as subject experts to prepare the panel of teachers purely on Part-time/Contractual basis through walk-in-interview conducted on 23.02.2019 (Saturday) for the academic session 2019-20.

1. Dr. B. VENKATESHWARLU, Asst Prof. of Chemistry, KNM Govt. Degree College
2. Smt. K. SHIVA RANI, Lecturer in Botany, KNM Govt. Degree College
3. Mr. P.VENKATESWARLU, Lecturer in Mathematics , KNM Govt. Degree College
4. Mr. E. MADHUSUDHAN, Lecturer in English, KNM Govt. Degree College

23-02-2019

(KAMAL PRASAD PATADE)
Principal
KV MIRYALAGUDA
Dist. Nalgonda, Telangana State
पिन / Pin - 508 207

ज्ञान-विज्ञान विमुक्तये

UNIVERSITY GRANTS COMMISSION
HUMAN RESOURCE DEVELOPMENT CENTRE

मौलाना आज़ाद नेशनल उर्दू यूनिवर्सिटी مولانا آزاد نیشنل اُردو یونیورسٹی

MAULANA AZAD NATIONAL URDU UNIVERSITY

(A Central University established by an Act of Parliament in 1998)
(Accredited "A" Grade by NAAC)

UGC-SPONSORED ORIENTATION PROGRAMME

This is to certify that

Dr.B.Venkateswarlu — Assistant Professor
(Name of the Participant) — (Designation)

Dept. of Chemistry, K.N.M. Govt. Degree College, Miryalaguda, Telangana
(College/University) — (Place)

Affiliated to M.G. University

participated in the 41 Orientation Programme from 13-09-2019 to 03-10-2019 and obtained Grade A

Co-ordinator Director Vice-Chancellor

UGC-HRDC & RUSA

OSMANIA UNIVERSITY, HYDERABAD

Opp. Law College, Osmania University, Hyderabad 500007, Telangana

Phone No: 040-27098102, 27682346, Website: https://www.osmania.ac.in/hrdc/ E-Mail: hrdc@osmania.ac.in

E-Certificate of Participation

This is to certify that

Bolisetti Venkateswarlu, Assistant Professor, Chemistry,
KNMGDC Miryalaguda Nalgonda,

has successfully completed One Week Online FIP Short-term Course on

ICT Tools in Higher Education

Sponsored by **UGC-HRDC-RUSA** organized from **20-08-2020 to 26-08-2020.**

PROF B SRINAGESH
DIRECTOR

UGC-HRDC Osmania University Hyderabad-7

REGISTRAR/
VICE CHANCELLOR

MHRD

MHRD'S INNOVATION CELL (GOVERNMENT OF INDIA)

AICTE

India First Leadership Talk

Certificate
of Participation

This is to certify that

Dr. B. Venkateswarlu

from KNMDC MIRYALAGUDA has

Successfully attended the India First Leadership Talk webinar

with Prof D. P. Singh, Chairman UGC

Broadcasted on 9th May, 2020 by MHRD's Innovation Cell.

Abhay Jere

Dr. Abhay Jere

Chief Innovation Officer, MHRD's Innovation Cell

TWO DAYS INTERNATIONAL WEBINAR ON
COVID-19: PROBLEMS AND CHALLENGES

ORGANIZED BY

GOVERNMENT GENERAL DEGREE COLLEGE AT RANIBANDH

IN ASSOCIATION WITH IQAC, GGDC RANIBANDH

This is to certify that Dr/Prof/Mr/Ms Dr.B. Venkateswarlu of KNMGDC Miryalaguda/MGUNIVERSITY actively participated in the "Two Days International Webinar on "COVID-19: PROBLEMS AND CHALLENGES" Organized by GOVERNMENT GENERAL DEGREE COLLEGE AT RANIBANDH, Bankura, West Bengal, India on 26th and 27th June, 2020.

Prof Amar Hens	Prof Anirban Chattopadhyay	Prof Madhusudan Garain
Convener	Coordinator	Officer-In-Charge
Seminar Committee	IQAC	GGDC, Ranibandh

Government of Karnataka
Department of Collegiate Education

Sri Kolli Nageshwar Rao Gangaiah Government First Grade College
Gangavathi-583227, Karnataka

In Collaboration with

Physical Education Federation of India (PEFI) Karnataka Chapter

E-CERTIFICATE

This certificate is presented to Mr./Ms./Mrs./Prof./Dr. **Dr.B.Venkateswarlu KNMGDC Miryalaguda/MGUNIVERSITY Telangana** For participating in the One Day National Level Webinar on ***"Research Methodology in Physical Education"*** Organised by IQAC and Dept. of Physical Education on 7th July 2020.

Dr. Abdul Rahiman
IQAC Coordinator

Dr.Anilkumar Edward
Physical Education Director

Dr. N.G.Hebsur
Principal

7/8/2020

KS9YNK-CE000183

JABALPUR ENGINEERING COLLEGE, JABALPUR (M.P.)
(Declared autonomous by Govt. of M.P. Estd.1947)
DEPARTMENT OF APPLIED CHEMISTRY

TEQIP-III

National Webinar on
"RECENT ADVANCES IN POWER PLANT CHEMISTRY"

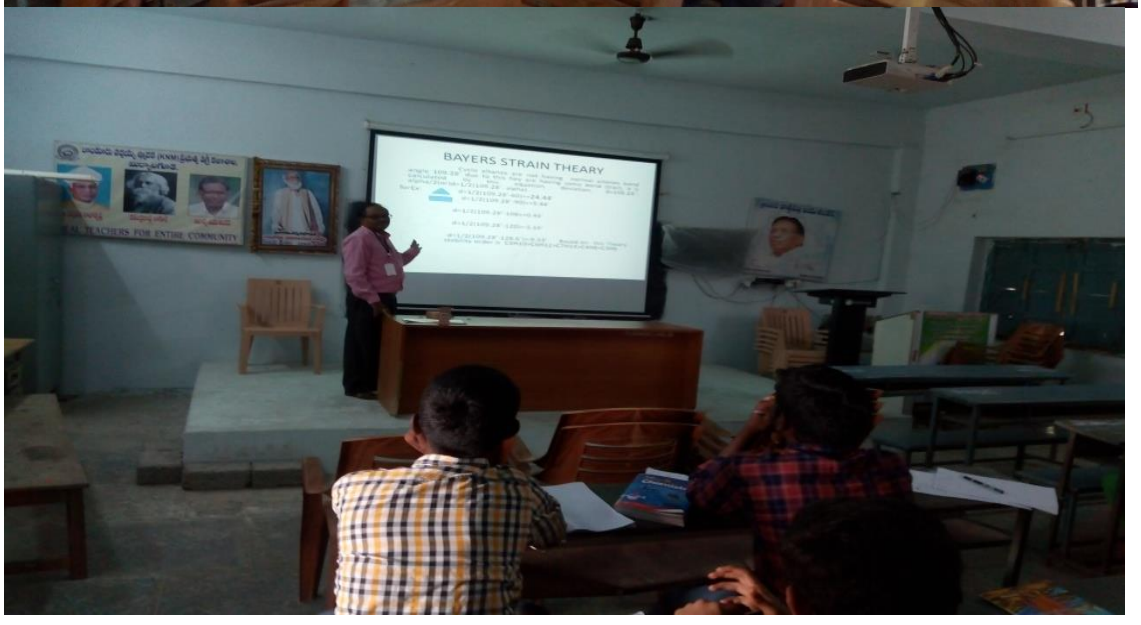
Certificate

This is to certify that **Dr. B. Venkateswarlu** has participated in one day National Webinar on **"Recent Advances in Power Plant Chemistry"** organized by Department of Applied Chemistry, Jabalpur Engineering College, Jabalpur on September 15, 2020.

Dr. Souvik De	Dr. Kanchan Khare	Dr. Shilpa Saxena	Dr. A. Maheshwari
Coordinator	Coordinator	Convenor	Convenor

Dr. S. K. Shrivastava	Dr. A. K. Sharma
H.O.D. Applied Chemistry	Principal

XV. HIGH LIGHTS OF THE DEPARTMENT
b)PPT CLASSES



ONLINE CLASSES

Based on CCE guidelines prepared with PPT VIDEO LESSONS

S.NO	DATE	NAME OF THE TOPIC	DURATION (IN MINUTES)
1	16.7.20	CO-ORDINATION COMPOUNDS-I (L-I)	33.29
2	17.7.20	HETEROCYCLIC COMPOUNDS (L-I)	44
3	18.7.20	CARBOHYDRATES (L-I)	41
4	21.7.20	CO-ORDINATION COMPOUNDS-I (L-II)	50
5	22.7.20	HETEROCYCLIC COMPOUNDS(L-II)	43
6	23.7.20	AMINOACIDS AND PROTEINS	43
7	24.7.20	ALICYCLIC COMPOUNDS	44
8	25.7.20	CARBOHYDRATES (L-II)	45
9	27.7.20	D-BLOCK ELEMENTS	51.2
10	28.7.20	SYNTHESIS BASED ON CARBANIONS	42.5
11	29.7.20	F-BLOCK ELEMENTS	43.50
12	30.7.20	HYDROXY COMPOUNDS (ALCOHOLS)(L-I)	42
13	31.7.20	CO.ORDINATION COMPOUNDS-II (L-I)	45
14	3.8.20	HALOGEN DERIVATIVES (L-I)	49
15	4.8.20	HYDROXY COMPOUNDS (PHENOLS) (L-II)	45
16	5.8.20	HALOGEN DERIVATIVES (L-II)	42
17	6.8.20	CARBONYL COMPOUNDS (L-I)	41.19
18	7.8.20	CABOXYLIC ACIDS (L-I)	42.17
19	10.8.20	AROMATIC HYDROCABONS (L-I)	38.2
20	12.8.20	NITROGEN COMPOUNDS (L-I)	42
21	13.8.20	CARBONYL COMPOUNDS (L-II)	41.2
22	14.8.20	CABOXYLIC ACIDS (L-II)	50.2
23	17.8.20	AROMATIC HYDROCABONS (L-II)	40.39
24	18.8.20	CARBONYL COMPOUNDS (L-III)	43.02
25	19.8.20	AROMATIC HYDROCABONS (L-III)	42

T Suresh Kumar

SURVEY REMINDER

Closed

Day-1 COVID-19 Preparation of Video Lessons and Power P...

As per the circular instructions, all...

7:47 PM

You responded at Jul 20, 8:26 PM
Response 2

Microsoft Kaizala aka.ms/kaizala

T Suresh Kumar

SURVEY REMINDER

Closed

Day-2 COVID-19 Preparation of Video Lessons and Power P...

As per the circular instructions, all...

9:19 AM

You responded at Jul 21, 5:48 PM

Microsoft Kaizala aka.ms/kaizala

T Suresh Kumar

SURVEY

Day-13 COVID-19 Preparation of Video Lessons and Power P...

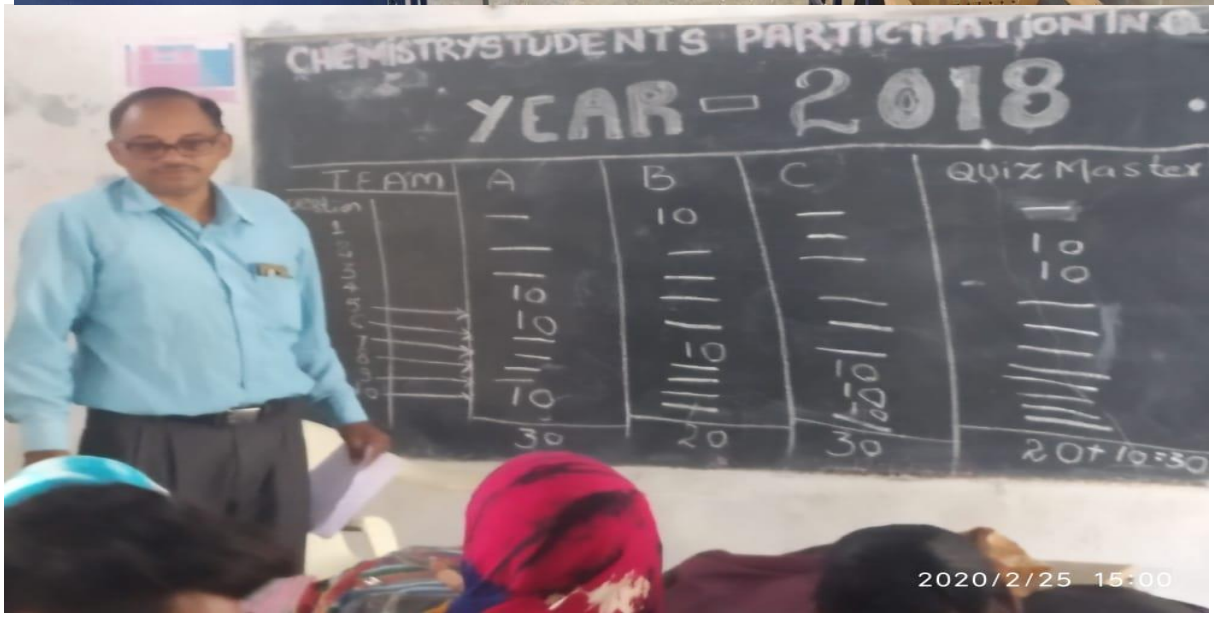
As per the circular instructions, all...

11:50 AM

You responded at Jul 31, 8:05 PM

Microsoft Kaizala aka.ms/kaizala

d) QUIZ COMPETETIONS



STUDENT SEMINARS

S. No	Name	Sem	Class	Year	Topic
1	K.ADISHANKARA CHARY	P-2	IIYEAR	2015-16	CONFERMATIONAL ANALYSIS
2	SK.MOULABE	P-2	II YEAR	2015-16	CARBONYLCOMPOUNDS
3	CH.NARESH	P-3	III YEAR	2016-17	HETEROCYCLIC COMPOUNDS
4	G.SATYANARAYANA	P-2	II YEAR	2016-17	AROMATIC HYDROCARBONS
5	M.VENUGOPAL	I	I YEAR	2018-19	CYCLOALKANES
6	M.VENKATESH	I	IYEAR	2018-19	ALKANES
7	B.YAMINI	I	I YEAR	2018-19	P-BLOCK ELEMENTS
8	N.SINDURI	II	I YEAR	2018-19	HALOGENCOMPOUNDS
9	P.MURALI	III	II YEAR	2018-19	F-BLOCK ELEMENTS
10	SK.JAVID	III	II YEAR	2018-19	METALCAEBONYLS
11	N.SINDURI	II	I YEAR	2018-19	DILUTE SOLUTIONS
12	M.VENUGOPAL	II	I YEAR	2018-19	P-BLOCKELEMENTS
13	B.YAMINI	II	I YEAR	2018-19	P-BLOCK ELEMENTS
14	L.KRISNA MOHAN	IV	II YEAR	2018-19	PHASE RULE
15	M.VENKATESH	IV	II YEAR	2018-19	ETHERS
16	L.KRISHNAMOHA	III	II YEAR	2018-19	D-BLOCK ELEMENTS
17	P.MURALI	IV	II YEAR	2018-19	CARBONYL COMPOUNDS
18	A.SARASWATHI	I	I YEAR	2019-20	S-BLOCK ELEMENTS
19	P.MAHESH	I	I YEAR	2019-20	SOLUTIONS
20	A.SARITHA	I	I YEAR	2019-20	CYCLIO ALKANES
21	M.VENUGOPAL	III	II YEAR	2019-20	ELECTROCHEMISTRY
22	B.YAMINI	III	II YEAR	2019-20	PHASERULE
23	N.SINDURI	III	II YEAR	2019-20	ELECTROCHEMISTRY
24	L.KRISNAMOHAN	V	III YEAR	2019-20	PHOTO CHEMISTRY
25	K.ANDALU	V	III YEAR	2019-20	CHROMATOGRAPHY
26	P.MURALI	V	III YEAR	2019-20	SOLVENT EXTRACTION
27	V.SATHISH	II	I YEAR	2019-20	P-BLOCKELEMENTS
28	D,SAIRAMACHARY	II	I YEAR	2019-20	ARENES
29	A.SARASWATHI	II	I YEAR	2019-20	P-BLOCKELEMENTS
30	M.VENUGOPAL	IV	II YEAR	2019-20	COMPLEX COMPOUNDS
31	MD.NAZMA	IV	II YEAR	2019-20	ELECTROCHEMISTRY
32	D.VENKATESH	VI	III YEAR	2019-20	COMPLEXCOMPOUNDS
33	K.CHANTINAIK	VI	III YEAR	2019-20	PHASERULE
34	L.KRISNA MOHAN	VI	III YEAR	2019-20	CHROMATOGRAPHY
35	N.DIVYA	IV	II YEAR	2019-20	ELECTROCHEM (EMF)
36	D.AKHILA	II	I YEAR	2019-20	P-BLOCK ELEMENTS
37	K.ANUSHA	II	IYEAR		ARENES

SMALL SCALE INDUSTRY(PREPARATION OF NOTEPADS)

INTELLECTUAL PROPERTY RIGHT (SPIRIT OF GIVING)

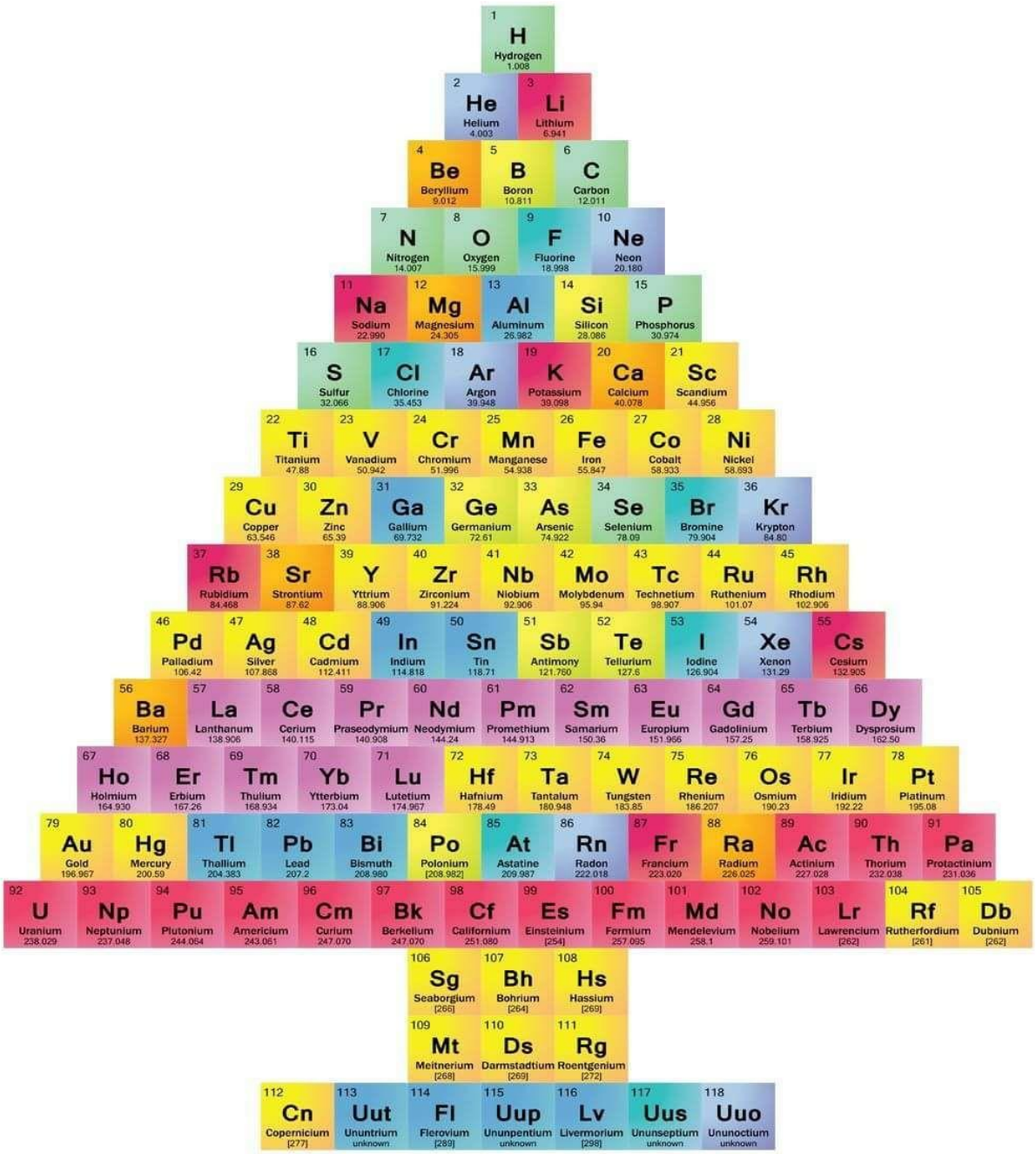
STUDENTPROJECTWORK ON ECO-SYSTEM

STUDENT PROJECTWORK ON HARITHAHARAM

STUDENT PROJECTWORK ON AQUARIUM

STUDENT PROJECT WORK ON WATER HARVESTING

IYPT 2019
(INTERNATIONAL YEAR OF PERIODIC TABLE)



c) EXTENSION ACTIVITIES

K.N.M.GOVT DEGREE COLLEGE
Miryalaguda

24-09-201
NSS DAY
SEPTEMBER , 24.
N.S.S UNIT - I & II
KNM GOVT DEGREE COLLEGE
MIRYALAGUDA
MAHATMA GANDHI UNIVERSITY
NALGONDA
AUDIOTRAK

NSS UNIT - II
TH AWARENESS CAMP

OTHERACTIVITIES PARTICIPATION

NATIONAL YOGA DAY

మిర్యాలగూడ అర్బన్: యోగా చేస్తున్న కేఎన్ఎం ప్రభుత్వ డిగ్రీ కళాశాల సిబ్బంది

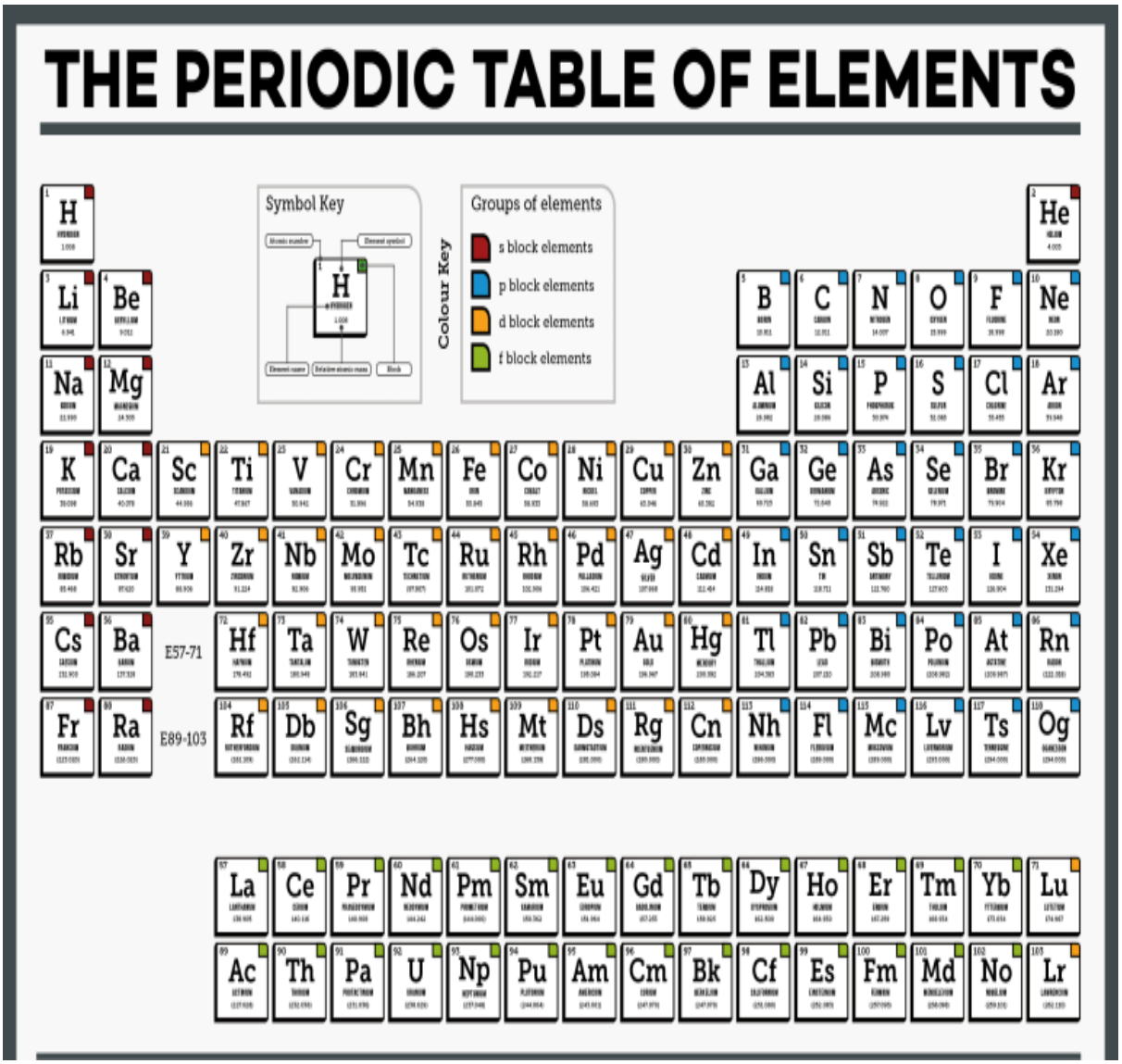
BLOOD DONATION CAMP

BLOOD DONATION CAMP

15-03-2019

2014-19 PG ENTRANCE EXAM RANKERS

IN CHEMISTRYDEPARTMENT



CHEMISTRY PG RANKS IN 2014

CH.NAGARAJU 135 RANK IN OSMANIAUNIVERSITY

H.NO

SK.SAIDULU 305 RANK IN OSMANIA UNIVERSITY

H.NO

K.N.M. GOVT. DEGREE COLLEGE: MIRYALAGUDA

B.SC I,II,III TIME - TABLE FOR THE YEAR 2019 - 20 - SEM-I,III,V

WEEK	CLASS	I	II	III	IV		V	VI
		9.30 - 10.20	**10.20 - 11.10**	**11.20 - 12.10**	**12.10 - 1.00**		**1.30 - 2.20**	**2.20 - 3.10**
MON	/I BSC	TELUGU	PHY/BOT	CHEM /CS	MATHS/ZOO		CHEM(P)/CS	STUDYHOUR
	IIBSC	ENGLISH	CHE	MATHS/ZOO	PHY/BOT		TELUGU	SEC
	IIIBSC	PHY/BOT	MATH/ZOO	PHY/BOT	CHEM/CS		MATHS/ZOO	STUDYHOUR
TUE	I BSC	ENGLISH	PHY/BOT	CHEM/CS	MATHS/ZOO		PHY/BOT	STUDYHOUR
	II BSC	TELUGU	MATH/ZOO	ENGLISH	PHY/BOT		CHEM/CS	SEC
	IIIBSC	PHY/BOT	CHEM/CS	MATHS/ZOO	CHEM(P)/CS		MATHS/ZOO	STUDY HOUR
WED	I BSC	PHY/BOT	ENGLISH	M/Z	TEL		SEC	STUDY
	II BSC	CHE(P)/CS	MATH/ZOO	TELUGU	ENG		PHY/BOT	STUDY
	IIIBSC	M/ZOO	PHY/BOT	CHE/CS	PHY/BOT		CHEM/CS	STUDY
THU	I BSC	M/ZOO	PHY/BOT	TELUGU	CHE(P)/CS		ENGLISH	GAMES/NCC/NSS
	II BSC	PHY/BOT	TELUGU	CHE/CS	ENG		M/ZOO	GAMES/NCC/NSS
	IIIBSC	CHEM/CS	M/ZOO	PHY/BOT	M/ZOO		CHE(P)/CS	GAMES/NCC/NSS
FRI	I BSC	CHEM/CS	TELUGU	M/ZOO	ENGLISH		SEC	STUDY
	II BSC	PHY/BOT	M/ZOO	CHE/CS	TSKC		ENGLISH	STUDY
	IIIBSC	M/ZOO	CHE/CS	PHY/BOT	CHE/CS		PHY/BOT	STUDY
SAT	I BSC	PHY/BOT	ENGLISH	M/ZOO	CHE/CS		TELUGU	GAMES/NCC/NSS
	II BSC	M/ZOO	PHY/BOT	CHE/CS	TELUGU		TSKC	GAMES/NCC/NSS
	IIIBSC	CHE/CS	M/ZOO	PHY/BOT	M/ZOO		PHY/BOT	GAMES/NCC/NSS

LUNCH (1.00 - 1.30)

KNM GOVT. DEGREE COLLEGE : MIRYALGUDA
INDIVIDUAL TIME-TABLE FOR THE YEAR 2014-15

Name of the Lecturer : B. VENKATESWARLU
Faculty : LECTURER IN CHEMISTRY
Papers Teaching: 1 Paper - II & Lab-course
2 Paper - IV & Lab- Course
3 _____

Day	I	II	III	IV	V	VI
Monday	II year			III year Paper - IV		Lab III year
Tuesday		III year Paper - IV			II year Practicals	
Wednesday	II year		III year Paper - IV			Lab II year
Thursday			II year		III year Practicals	
Friday			II year	III year Practicals		Lab I year
Saturday			II year Practicals			Lab III year

Dated: 10-7-2014

Signature of the Lecturer

KNM GOVT. DEGREE COLLEGE : MIRYALGUDA
INDIVIDUAL TIME-TABLE FOR THE YEAR 2015-16

Name of the Lecturer : B. VENKATESWARLU
Faculty : LECTURER IN CHEMISTRY
Papers Teaching: 1 Paper - II & Lab-course
2 Paper - IV & Lab-course
3 _____

Day	I	II	III	IV	V	VI
Monday	II year			III year Paper - IV		Lab III year
Tuesday		III year Paper - IV			II year Practicals	
Wednesday	II year		III year Paper - IV			Lab II year
Thursday			II year		III year Practicals	Lab I year
Friday			II year	III year Practicals		Lab III year
Saturday			II year Practicals			

Dated: 10-7-2015

Signature of the Lecturer

KNM GOVT. DEGREE COLLEGE : MIRYALGUDA
INDIVIDUAL TIME-TABLE FOR THE YEAR 2016-17

Name of the Lecturer : Dr. B. VENKATESWARLU
Faculty : Asst. Prof. of Chemistry
Papers Teaching: 1 Paper - II & Lab-Course
2 Paper - IV & Lab-Course
3 _____

Day	I	II	III	IV	V	VI
Monday	II year MPC & BZC TM & EM			III year Paper-IV MPC & BZC		Lab III year
Tuesday		III year Paper-IV MPC & BZC			II year Practicals	Lab II year
Wednesday	II year		III year Paper-IV			Lab I year
Thursday			II year		III year Practicals	
Friday			II year	III year Practicals		Lab III year
Saturday			II year Practicals			

Dated: 10-7-2016

Signature of the Lecturer

KNM GOVT. DEGREE COLLEGE : MIRYALGUDA
INDIVIDUAL TIME-TABLE FOR THE YEAR 2017-18

Name of the Lecturer : Dr. B. VENKATESWARLU
Faculty : Asst. Professor of Chemistry
Papers Teaching: 1 Paper-II & Lab-Course
2 Paper-IV & Lab-Course
3 _____

Day	I	II	III	IV	V	VI
Monday	II year MPC & BZC TM & EM			III year Paper-IV MPC & BZC		Lab III year
Tuesday		III year Paper-IV MPC & BZC			II year Practicals	Lab II year
Wednesday	II year		III year Paper-IV			
Thursday			II year		III year Practicals	Lab I year
Friday			II year	III year Practicals		Lab III year
Saturday			II year Practicals			

Dated: 10-7-2017

Signature of the Lecturer

KNM GOVT. DEGREE COLLEGE : MIRYALGUDA

INDIVIDUAL TIME-TABLE FOR THE YEAR 2018-19

Name of the Lecturer : Dr. B. VENKATESWARLU

Faculty : Asst Prof. of Chemistry

Papers Teaching: 1 I year SEM I (Paper-I) & SEM II (Paper-II)

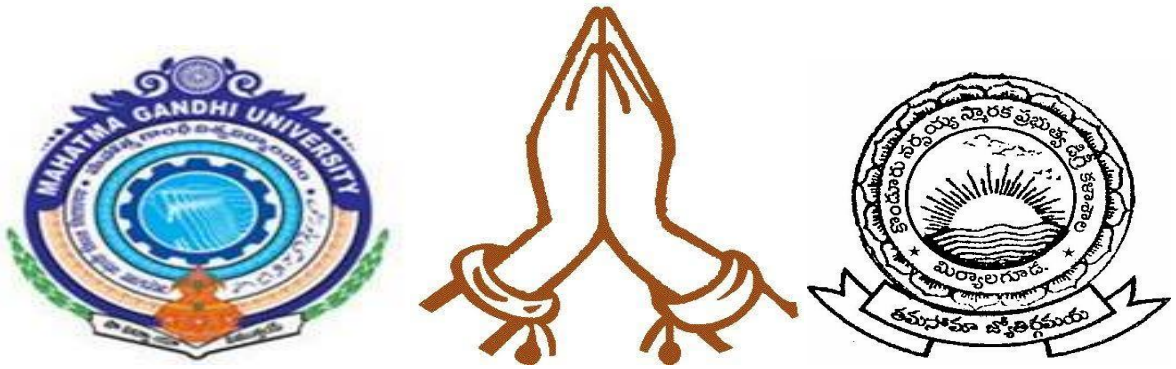
2 II year SEM III (Paper III) SEM IV (Paper-IV)

3 III year SEM V (Paper V & VI) SEM VI (Paper VII & VIII)

Day	I	II	III	IV	V	VI
Monday	II year MPC & BZC E·M & T·M	I year MCCS	I year MPC & BZC E·M & T·M	III year (C6 & C8) E·M & T·M	I year Practicals	Lab III year
Tuesday		II year (C5 & C7) MPC & BZC	I year MPC & BZC EM & JM	III year (C6 & C8)	II year MPC & BZC EM & T·M	Lab II year
Wednesday	II year		III year (C6 & C8)		III year (C5 & C7) Practicals	Lab I year
Thursday	III year (C6 & C8) EM & JM	I year MCCS	II year MPC & BZC E·M & T·M	I year	III year (C6 & C8) Practicals	
Friday	I year	III year (C5 & C7)	II year	III year (C5 & C7) Practicals	I year	Lab III year
Saturday	III year (C5 & C7) EM & TM		II year MPC & BZC TM & EM	I year MPC & BZC TM & EM		

Dated: 10·7·2018

Signature of the Lecturer



THANKING YOU

Presented by
Dr.B.Venkateswarlu.MSC.PhD.
AssistantProfessor, HOD
Department of Chemistry,
CONVINOR NAAC III
KNMGDC Miryalaguda, TG