

P.R.Govt.College (A), Kakinada

(Affiliated to Adikavi Nannaya University)

Department of chemistry

B.Sc. Chemistry Syllabus under CBCS

Board of studies

2017-18

6. One postgraduate meritorious alumnus to be nominated by the Principal.

The chairman, Board of Studies, may with the approval of the Principal of the College, Co-opt.

1. Sri. Nemani Ramam, M.Sc., M.Phil

II. Term.

The term of the nominated members shall be two years.

III. Meeting

The Principal of the College shall draw the schedule for meeting of the Board of Studies for different Departments. The meeting may be scheduled as and when necessary but at least once a year.

IV. Functions

The Board of Studies of a Department in the College shall:

- a) Prepare syllabus and various courses keeping in view the objectives of the College interest of the stakeholders and national requirement for consideration and approval of the Academic Council.
- b) Suggest methodologies for innovative teaching and evaluation techniques.
- c) Suggest panel of names to the Academic Council for appointment of examiners.
- d) Coordinate research, Teaching, Extension and other academic activities in the Department/College.

P.R.Govt. College (A), Kakinada
Recommended Composition of the Board of Studies of Chemistry
And it's Functions of an Autonomous College
April-2017-18

I Composition

1. Head of the Department concerned (Chairman):

Sri E.V.S. Subrahmanyam, M.Sc., M.Phil, B.Ed

2. The entire faculty of each specialization.

1. Dr. M. Mahaboob Pacha, M.Sc., M.Phil, PhD.
2. Sri T.Vara Prasad, M.Sc., M.Phil., M. Ed.,
3. Sri D.Rama Rao, M.Sc., B. Ed., M.Phil.
4. Sri V.Mallikarjuna Sarma, MSc, M.Phil, NET

3. Two experts in the subject from outside the college to be nominated by the Academic Council

1. Dr. V .Sambasivarao, Lecturer in Chemistry, Arts College,
Rajahmundry
2. Dr. K . Jhansi, Lecturer in Chemistry, Ideal Degree College,
Kakinada

4. One expert to be nominated by the Vice-Chancellor from a panel of six recommended by the College Principal

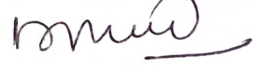
1. Prof. K. Deepti, Adikavi Nannaya University, Rajahmundry

5. One representative from industry/ Corporate Sector/ allied area relating to Placement.

1. Dr. N.Krishna Prakasam, Facility Manager, SAR CHANDRA
ENVIRON SOLUTIONS PVT.LTD.KAKINADA

Signatures of the members who attended the

Board of studies in Chemistry.

- | | | |
|-------------------------------|--|--|
| 1. Sri E. V. S. Subrahmanyam | Chairman & Lecturer in Charge |  |
| 2. Dr. K. Deepti, | University representative
Adikavi Nannaya University
Rajamahendravaram | 
13/4/17 |
| 3. Dr. N. K. Prakasam, | Facility Manager,
Industry representative
SAR Chandra Environ Solutions
Pvt. Ltd. | |
| 4. Dr. V. Sambasivarao, | Subject expert
Lecturer in Chemistry,
Govt. Arts College,
Rajamahendravaram | 
13/4/17 |
| 5. Dr. K. Jhansi Lakshmi | Subject expert
Lecturer in Chemistry.
Ideal Degree College, Kakinada | 
K. Jhansi Lakshmi |
| 6. Sri. N. Ramam | Alumnus, Principal. Retd. | |
| 7. Dr. M. Mahaboob Pacha | Member | |
| 8. Sri T. Vara Prasad | Member | 
13/4/17 |
| 9. Sri D. Rama Rao | Member |  |
| 10. Sri V. Mallikarjuna Sarma | Member |  |
| 11. Dr. D.S.V.N.M. Ramamurthy | Member | 
D.S.V.N.M. Ramamurthy |
| 12. K. Babu Rao. | Member | 
K. Babu Rao |

ACTION PLAN BOS MEETING -CHEMISTRY HELD ON 13 -4-2017.

1. Department activities for 2017-2018 academic year. Annexure I

Month	Activity proposed	Faculty member in charge
June-17	Departmental staff meeting to review results and class work allotment	E.V.S.Subrahmanyam
	Preparation of curricular plans, time-tables etc.,	
	Remedial coaching classes for II & III year supplementary exams	
July-17		
	Bridge classes for I year students	
	Student awareness programmes on ragging& eve teasing - consequences , self-discipline, career guidance, higher education opportunities etc.,	T.Vara prasad
August-17	Conference on prospects in pharmaceutical industries	E.V.S.Subrahmanyam
	Study tour / Field trips	
Sept-17	Ozone day	
Oct-17	MOLE Day	D.Ramarao
	Faculty development programme	Dr.M.M.Pacha
Nov-17	11th National Education Day – Out reach Programme to nearby school	
Dec-17	World AIDS Day	
	Chemistry day & Chem fest	V.Mallikarjuna sarma
Jan-18	10 days coaching for PG entrance examinations in chemistry Study tour / Field trips	V.Mallikarjuna sarma
Feb-18	NATIONAL SCIENCE DAY	V.Mallikarjuna sarma
March-18	Consumer awareness day	E.V.S.Subrahmanyam

**2. Organizing National/ State level seminars/Workshops/ Conferences/
Training programmes etc., with topics and other details.**

(Mandatory for each Department)

- i) Staff development programme
- ii) Training in the use of HPLC
- iii) Awareness on OZONE protection
- iv) National Chemistry day
- v) Chem. fest
- vi) National Science day 2018
- vii) Guest lectures
- viii) National seminar in chemistry
- ix) Training in Soil analysis
- x) Training in water analysis

3. Change of modules in the syllabus content.

Syllabus changed for first and second years as per university regulations.
CBCS introduced for final year w.e.f. 2017-18.

**4. Plan for utilization of funds for Autonomous/CPE/other grants
available for arranging guest lectures, faculty improvement
programmes, study tours, equipping laboratories, reference books &
other necessary teaching-learning material with ICT enabled
teaching.**

I. Study visits to:

Rs, 50,000

1. Visakha Steel Plant, Visakhapatnam
2. Hetero Laboratories, Nakkapally
3. Dr. Reddy's Laboratories, Yanam.
4. National Institute of Hydrology, Kakinada.
5. SAR Chandra Environ Solutions, Kakinada.
6. ONGC mini refinery, Tatipaka.
7. Soil analysis laboratory, Samalkot.
8. IICT, HYD
9. Venky parenterals, Yanam

II.

- | | |
|--|-----------|
| 1. Sophisticated version UV-Visible spectrophotometer- | 5.0 lakhs |
| 2. Other equipment | 1.0 lakhs |
| 3. Petrochemicals equipment | 1.0 lakhs |

5. Plan for organizing subject oriented community outreach programmes & allocation of necessary funds. (Mandatory for each Department)

- | | | | |
|-----|------------------------------|-----|--------|
| i) | Adoption of village | Rs. | 20,000 |
| ii) | Medical Awareness programmes | Rs. | 10,000 |

6. Institution of new medals/incentives/prizes etc., from alumni, philanthropists, parents, faculty etc., - Strategies to be recommended

7. Introduction of new programmes –PG/UG/Diploma and certificate courses.

New courses to be proposed.

S.No.	New course proposed	Justification	Employability
1	Under graduate course in Industrial chemistry	There is dearth of skilled persons to operate various instruments like uv visible spectrophotometer, Atomic absorption spectrophotometer, PH meter, flame photometer, rotavapour instrument, HPLC.GLC, distillation, etc which play as key role in any industry related to chemistry.	Technical assistants, Quality control managers, Plant supervisors etc.

8. Any other programme that enhances the learning capacity of students and their employable & knowledge skills.

Training in the use of instruments like AAS, UV-Vis, HPLC, flame photometer, uranium analyzer, soil and water analysis projects, air quality projects.

9. Change in internal assessment exams for conducting II mid Semester by way of Project work/Assignment.

Not possible as the number of students is more. However it is propose to give 33.3% weitage for competitive exam questions pertaining to the syllabus prescribed.

10. Suggest panel of examiners/paper setters & other experts/nominees for BOS deliberations.

Chemistry:

1. Sri N. Lakshmana Rao, SKBR College, Amalapuram.

2. Dr. D. Madhava Sarma, GDC, Tadepalligudem
3. Dr. V. Sambasiva Rao, Govt. Arts College, Rajahmundry.
4. Dr. K. A.R.S.S. Prasad, VS Krishna College, Visakhapatnam.
5. Sri S.V. Ramana, Arts College, Rajahmundry
6. Sri Machi Raju, Arts College, Rajahmundry
7. Smt. C. Jyoti, St. Theresa College, Eluru.
8. P. Krishna Kumar, S.K.B.R. College, Amalapuram.
9. Dr. G. Venkatarao, GDC, Vijayavada
10. Shri B. Venkatarao, GDC, Tadepalligudem
11. Dr. Ramchadarao, Y.N. College, Narasapuram

Department of Chemistry BOS Meeting Dt. 13 - 4-2017

Resolutions:

Meeting of Board of studies in chemistry is convened on 13-4-17 in the guest room of the College. The Principal Dr. Chappidi Krishna, Dr. K. Deepthi, University Nominee, Dr. N.K. Prakasam, Facility Manager, SAR Chandra Environ Solutions Pvt. Ltd., Dr. V. Sambasiva Rao, Subject Expert, Govt. College, Rajahmundry, Dr. Jhansi, Lecturer in Chemistry, Ideal College, Kakinada, all members of the faculty of Chemistry and student representatives attended the meeting. Agenda items are discussed and resolutions are made.

1. It is resolved to continue Choice based credit system in the Chemistry combination programmes as per the directions of the CCE, Hyderabad to the first year and second year and final year students w.e.f. 2017-18
2. Enhance the internal assessment component from 30% to 40% in theory to first year (admitted batch).
3. It is resolved to allot project works for final year students who opt for project work in chemistry preferably industry based.
4. It is resolved to conduct departmental activities such as Ozone day, Chem fest, Chemistry day and Science day etc.
5. It is resolved to offer subject electives and skill based electives in the V and VI semesters respectively.
6. It is resolved to implement the recommended Pedagogy for the first semester 2017-18.
7. Resolved to conduct practical examinations semester wise.

The following paper setters are recommended.

- i. Dr. V.Sambasiva Rao, Govt.Arts College, Rajahmundry.
 - ii. K.A.R.S.S.Prasad, VS Krishna College, Visakhapatnam.
 - iii. Sri S.V.Ramana , Arts College, Rajahmundry
 - iv. Sri Machi Raju, Arts College, Rajahmundry.
 - v. U. Satyanarayana, GDC, Tuni
 - vi. R. Brahmaji, GDC, Ramachandrapuram
 - vii. N. V. Sudhakar, GDC, Tuni
8. It is resolved to organize Guest lectures by eminent professors.
9. Resolved to implement pass minimum for internal assessment for CBSE pattern students as the pattern is learner oriented.
10. NEW COURSES:
- It is resolved to explore the possibility of introducing a new course in B.Sc Pharmaceuticals/Industrial Chemistry as Restructured course.
11. Resolved to submit proposals to conduct a faculty development programme in instrumentation techniques/ advanced topics with the assistance of industry representatives and university representatives.
12. Resolve to assist the orphan children of below two years age being taken by department of Women and Child Welfare as an extension activity with the funds contributed by the faculty members of the department.
13. Resolved to change the syllabus components in semester I to semester II and vice versa. Sly. Semester III to IV and vice versa on par with the affiliating university.
14. It is proposed to give 33.3% weightage for competitive exam questions pertaining to the syllabus prescribed.

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15. Resolved to follow 75-25% External and internal w.e.f. 2017-18 admitted batch 2017-18 as per the directions of APSCTHE and ANUR.

X Sreepti
University
nominee.

P.R.Govt.College (A), Kakinada

(Affiliated to ADIKAVI NANNAYA UNIVERSITY)

(W.e.f. admitted batch 2017 – 2018)

Department of chemistry

B.Sc. Chemistry Syllabus under CBCS

YEAR	SEMESTER	PAPER	TITLE	MARKS	CREDITS
I	I	I	Inorganic and Organic Chemistry	100	03
			Practical – I	50	02
	II	II	Physical and General Chemistry	100	03
			Practical – II	50	02
II	III	III	Inorganic and organic Chemistry	100	03
			Practical – III	50	02
	IV	IV	Spectroscopy and Physical Chemistry	100	03
			Practical – IV	50	02
III	V	V	Inorganic ,Organic and Physical Chemistry	100	03
			Practical – V	50	02
		VI	Inorganic ,Organic and Physical Chemistry	100	03
			Practical – VI	50	02
		VII (A)*	Elective	100	03
			Practical - VII A	50	02
		VII (B)*	Elective	100	03
			Practical - VII B	50	02
	* Any one Paper from VII A, B and C	VII (C)*	Elective	100	03
			Practical - VII C	50	02

VI	** Any one cluster from VIII, A, B and C	VIII (A)**	Cluster Electives - I :	100	03
			VIII-A-1 ,	100	03
			VIII-A-2	100	03
			VIII-A-3	50	02
				50	02
				50	02
		VIII (B)**	Cluster Electives - II ::	100	03
			VIII-B-1	100	03
			VIII- B-2	100	03
			VIII-B-3	50	02
				50	02
				50	02
		VIII (C)**	Cluster Electives - III ::	100	03
			VIII-C-1	100	03
			VIII-C-2	100	03
			VIII-C-3	50	02
				50	02
				50	02

Final year 2017-18
SEMESTER-V
Paper - ~~III~~ (INORGANIC, PHYSICAL & ORGANIC CHEMISTRY)
45 hrs (3 h / w)

INORGANIC CHEMISERY

UNIT-I

Coordination Chemistry:

8h

IUPAC nomenclature - bonding theories - Review of Werner's theory and Sidgwick's concept of coordination - Valence bond theory - geometries of coordination numbers 4-tetrahedral and square planar and 6-octahedral and its limitations, crystal field theory - splitting of d-orbitals in octahedral, tetrahedral and square-planar complexes - low spin and high spin complexes - factors affecting crystal-field splitting energy, merits and demerits of crystal-field theory. Isomerism in coordination compounds - structural isomerism and stereo isomerism, stereochemistry of complexes with 4 and 6 coordination numbers.

UNIT-II

1. Spectral and magnetic properties of metal complexes:

4h

Types of magnetic behavior. spin-only formula. calculation of magnetic moments. experimental determination of magnetic susceptibility-Gouymethod.

2. Stability of metal complexes:

3h

Thermodynamic stability and kinetic stability, factors affecting the stability of metal complexes. chelate effect. determination of composition of complex by Job's method and mole ratio method.

ORGANIC CHEMISTRY

UNIT- III

Nitro hydrocarbons:

3h

Nomenclature and classification-nitro hydrocarbons. structure -Tautomerism of nitroalkanes leading to aci and keto form. Preparation of Nitroalkanes. reactivity - halogenation. reaction with HONO (Nitrous acid).Nef reaction and Mannich reaction leading to Micheal addition and reduction.

UNIT – IV

1. Nitrogen compounds :

12h

Amines (Aliphatic and Aromatic): Nomenclature. Classification into 1°, 2°, 3° 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. Chemical properties: a) Alkylation b) Acylation c) Carbylamine reaction d) Hinsberg separation e) Reaction with Nitrous acid of 1°, 2°, 3° (Aliphatic and aromatic amines). Electrophillic substitution of Aromatic amines – Bromination and Nitration. Oxidation of aryl and Tertiary amines. Diazotization.

2. Heterocyclic Compounds

Introduction and definition: Simple five membered ring compounds with one hetero atom Ex. Furan. Thiophene and pyrrole - Aromatic character – Preparation from 1,4,-dicarbonyl compounds, Paul-Knorr synthesis.

Properties : Acidic character of pyrrole - electrophillic substitution at 2 or 5 position, Halogenation, Nitration and Sulphonation under mild conditions - Diels Alder reaction in furan.

Pyridine – Structure - Basicity - Aromaticity - Comparison with pyrrole - one method of preparation and properties - Reactivity towards Nucleophilic substitution reaction.

PHYSICAL CHEMISTRY

UNIT- V

Thermodynamics

15h

The first law of thermodynamics-statement, definition of internal energy and enthalpy. Heat capacities and their relationship. Joule-Thomson effect- coefficient. Calculation of w , for the expansion of perfect gas under isothermal and adiabatic conditions for reversible processes. State function. Temperature dependence of enthalpy of formation-Kirchoff's equation. Second law of thermodynamics. Different Statements of the law. Carnot cycle and its efficiency. Carnot theorem. Concept of entropy, entropy as a state function, entropy changes in reversible and irreversible processes. Entropy changes in spontaneous and equilibrium processes.

List of Reference Books

1. Concise coordination chemistry by Gopalan and Ramalingam
2. Coordination Chemistry by Basalo and Johnson
3. Organic Chemistry by G.Mare loudan. Purdue Univ
4. Advanced Physical Chemistry by
5. Text book of physical chemistry by S Glasstone
6. Concise Inorganic Chemistry by J.D.Lee
7. Advanced Inorganic Chemistry Vol-I by Satyaprakash, Tuli, Basu and Madan
8. A Text Book of Organic Chemistry by Bahl and Arun bahl
9. A Text Book of Organic chemistry by I L Finar Vol I
10. Advanced physical chemistry by Gurudeep Raj

P.R.GOVERNMENT COLLEGE (A), KAKINADA
DEPARTMENT OF CHEMISTRY
BOARD OF STUDIES 2017-18 APRIL- 2016
FIFTH SEMESTER SYLLABUS
PAPER-IV
SKILL BASED ELECTIVE - 1

1. Molecular spectroscopy;

10 h

UNIT-I

Raman spectroscopy: Concept of polarizability, selection rules, pure rotational and pure vibrational Raman spectra of diatomic molecules, selection rules.

Mass Spectrometry: Basic principles – Molecular ion / parent ion, fragment ions / daughter ions. Theory – formation of parent ions. Representation of mass spectrum. Identification of parent ion, (M+1), (M+2), base peaks (relative abundance 100%)
Determination of molecular formula – Mass spectra of ethylbenzene, acetophenone, n-butyl amine and 1- propanal.

b) Spectral interpretation: 2h

Interpretation of IR, UV-Visible, ¹H-NMR of the following compounds 1. Phenyl acetylene

2. Acetophenone 3. Cinnamic Acid 4. para-nitro aniline.

UNIT-II

MACROMOLECULES: 10 hours

Classification of polymers, definition and mechanisms of polymerization methods- chain polymerization, step polymerization, coordination polymerization – tacticity.

Co-Polymerization, Molecular weight of polymers-number average and weight average molecular weight, degree of polymerization, determination of molecular weight of polymers by viscometry and Osmometry, Preparation and industrial application of polyethylene, PVC, Teflon, polyacrylonitrile, terelene and Nylon66. Introduction to biodegradability, with examples.

Unit III Green Chemistry

8 hours

Introduction: Definition of green Chemistry, need of green chemistry, basic principles of green chemistry

Green synthesis: Evaluation of the type of the reaction i) Rearrangements (100% atom economic), ii) Addition reaction (100% atom economic), Pericyclic reactions (no by-product).

Selection of solvent: i) Aqueous phase reactions ii) Reactions in ionic liquids iii) Solid supported synthesis iv) Solvent free reactions (solid phase reactions)

ii) Green catalysts: i) Phase transfer catalysts (PTC) ii) Biocatalysts

Microwave and Ultrasound assisted green synthesis:

1. Aldol condensation
2. Cannizzaro reaction
3. Diels-Alder reactions
4. Strecker synthesis
5. Williamson synthesis
6. Dieckmann condensation

P.R.GOVERNMENT COLLEGE (A), KAKINADA
DEPARTMENT OF CHEMISTRY
BOARD OF STUDIES 2017-18 APRIL- 2016
FIFTH SEMESTER SYLLABUS
PAPER-IV
Model paper

Answer any four choosing at least one from each section A,B,C. 4x10=40 Marks

Section-A;

1. Explain the different types of molecular vibrations and interpretation of IR spectrum
In respect of i) Functional group region ii) finger print region
2. What are equivalent and non equivalent protons? Explain Chemical shift . How is it expressed?
3. Interpret the spectrum of the following as per UV.IR and NMR spectroscopy.
i) Cinnamic acid ii) phenyl acetylene

Section - B;

4. Define the term polymerization. Write the mechanism of radical polymerization.
5. How is molecular weight determined by Viscometry method?
6. Write the preparation and applications of i) PVC ii) polyacrylonitrile iii) Nylon 66

Section - C;

7. Enumerate the principles of green chemistry.
8. How is a reaction evaluated in green chemistry? Explain with an example? Give examples of 100% atom economy reactions.
9. Microwave and Ultrasound assisted green synthesis:
i) Aldol condensation
ii) Cannizzaro reaction

Section: D

Answer any five of the following questions.

4 x 5 = 20 Marks

10. How does Conjugation affect the λ_{max} of the compounds?
11. What is force constant? How is it related to the bond energies?
12. Explain spin-spin coupling.

13. What is tacticity? Write different types of tacticity.
14. Explain the classification of polymers.
15. Write the names and structures of monomers in (i) Teflon (ii) Terylene
16. Write a note on Phase Transfer Catalysis.
17. What is the need for Green Chemistry?

Section-E

Answer all the following questions.

5 x 2 = 10 Marks

18. What are stokes and anti-stoke lines in Raman Spectrum?
19. Define the terms chromophore and Auxochrome.
20. Define degree of polymerization.
21. What are Ziegler-Natta catalysts?
22. Write a note on biocatalysts.

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P.R.GOVERNMENT COLLEGE (A), KAKINADA
DEPARTMENT OF CHEMISTRY
BOARD OF STUDIES 2017-18 APRIL- 2016
FIFTH SEMESTER SYLLABUS
PAPER-IV
SKILL BASED ELECTIVE - 2

ENVIRONMENTAL CHEMISTRY
30 hrs (2 h / w)

UNIT-I

Introduction

9h

Concept of Environmental chemistry-Scope and importance of environment in now a days – Nomenclature of environmental chemistry – Segments of environment - Natural resources – Renewable Resources – Solar and biomass energy and Nonrenewable resources – Thermal power and atomic energy – Reactions of atmospheric oxygen and Hydrological cycle.

UNIT-II

Air Pollution

9h

Definition – Sources of air pollution – Classification of air pollution – Acid rain – Photochemical smog – Green house effect – Formation and depletion of ozone – Bhopal gas disaster – Controlling methods of air pollution.

UNIT-III

Water pollution & Chemical Toxicology

12h

Unique physical and chemical properties of water – water quality and criteria for finding of water quality – Dissolved oxygen – BOD, COD, Suspended solids, total dissolved solids, alkalinity – Hardness of water – Methods to convert temporary hard water into soft water – Methods to convert permanent hard water into soft water – eutrophication and its effects – principal wastage treatment – Industrial waste water treatment. Toxic chemicals in the environment – effects of toxic chemicals – cyanide and its toxic effects –

List of Reference books

1. Fundamentals of ecology by M.C.Dash
2. A Text book of Environmental chemistry by W. Moore and F.A. Moore
3. Environmental Chemistry by Samir k. Banerji

Include
Unit-IV;
Soil Pollution

Unit-IV
1. Introduction to Chemical Nature of Soils – Acid-
Alkaline – Saline Soils – pH of Soils – Soil
analysis – principles – Soil Sampling

Model paper

P.R.GOVERNMENT COLLEGE (A), KAKINADA
DEPARTMENT OF CHEMISTRY
BOARD OF STUDIES 2017-18 APRIL- 2016
FIFTH SEMESTER SYLLABUS
PAPER-IV

Elective 2

Model paper

Answer any four choosing at least one from each section A,B,C. 4x10=40 Marks

SECTION A:

THREE QUESTIONS FROM UNIT I

SECTION B:

THREE QUESTIONS UNIT II

SECTION C:

THREE QUESTIONS FROM UNIT III

SECTION: D

4x5 = 20

TWO QUESTIONS FROM UNIT I

TWO QUESTIONS FROM UNIT II

FOUR QUESTIONS FROM UNIT III

SECTION-E

2x5= 10

ONE QUESTION FROM UNIT I

ONE QUESTION FROM UNIT II

THREE QUESTIONS FROM UNIT III

SEMESTER V
LABORATORY COURSE – V
Practical Paper – V Organic Chemistry
(at the end of semester V)

30 hrs (2 h / W)

Organic Qualitative Analysis:

50M

Analysis of an organic compound through systematic qualitative procedure for functional group identification including the determination of melting point and boiling point with suitable derivatives.

Alcohols, Phenols, Aldehydes, Ketones, Carboxylic acids, Aromatic Primary Amines, Amides and Simple sugars.

LABORATORY COURSE – VI
Practical Paper – VI Physical Chemistry
(at the end of semester V)

30 hrs (2 h/W)

1. Determination of rate constant for acid catalyzed ester hydrolysis.
2. Determination of molecular status and partition coefficient of benzoic acid in Benzene and water.
3. Determination of Surface tension of liquid
4. Determination of Viscosity of liquid.
5. Potentiometry- Determination of Fe (II) with Potassium dichromate