BOARD OF STUDIES FOR CHEMISTRY

MINUTES OF THE MEETING

The meeting of the Board of Studies of Chemistry was held on **02.12.2019** at 12:00 Noon at CMR Technical Campus, Kandlakoya (V), Medchal Road, Hyderabad – 501 401.

The following members attended the meeting:

S. No	Name	Designation	Role	Signature
1	Dr. A. Raji Reddy	Director, CMR Technical Campus	Special Invitee	
2	Dr. P. Swapna	Assoc. Professor, Department of Chemistry, CMR Technical Campus	Chairman	
3	Dr. A. Jayashree	Professor & Head, Center for Chemical Sciences and Technology, Institute of Science & Technology, JNTU Hyderabad	University Nominated Member	
4	Dr. K.V. Reddy	Professor of Chemistry, CMR Engineering College	Subject Expert	
5	Dr. Y. Ramamohan	Professor of Chemistry, CMR College of Engineering & Technology	Subject Expert	
6	Mr. A. Jagan Mohan Reddy	Assoc. Professor, Department of Chemistry, CMR Technical Campus	Subject Expert	
7	Dr. M. Ahmed Ali Baig	Professor & Dean Academics, CMR Technical Campus	Special Invitee	
8	Dr. V. Kesava Reddy	Professor & Head, Department of H&S, CMR Technical Campus	Special Invitee	

Dr. P. Swapna, Associate Professor of Chemistry & Chairman, Board of Studies welcomed all the members and presented a report on the scheme & syllabus for **R19** (w.e.f. **A.Y. 2019-20**) & **R20** (w.e.f. **A.Y. 2020-21**). The scheme & syllabus has been thoroughly discussed in detail and approved as follows:

(P.T.O.)

CMR TECHNICAL CAMPUS
UGC AUTONOMOUS
B.Tech. I Year Syllabus (w. e. f. A.Y. 2020-21)

Common for Civil, Mechanical

I SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	20MA101BS	Algebra and Calculus	3	1	0	4
2	20PH102BS	Engineering Physics	3	1	0	4
3	20EC103ES	Basic Electrical & Electronics Engineering	3	1	0	4
4	20ME104ES	Engineering Graphics	2	0	4	4
5	20PH105BS	Engineering Physics Lab	0	0	3	1.5
6	20EC106ES	Basic Electrical & Electronics Engineering Lab	0	0	3	1.5
7	20EC107ES	Basic Elements of Engineering Technology	0	0	2	1
8	20MC108ES	Environmental Science	3	0	0	0
		Induction Programme				
Total Credits			**14**	**3**	**12**	**20**

II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	20MA201BS	Ordinary Differential Equations and Vector Calculus	3	1	0	4
2	20CH202BS	Engineering Chemistry	3	1	0	4
3	20CS203ES	Programming for problem solving	3	1	0	4
4	20EN204HS	English	2	0	0	2
5	20ME205ES	Engineering Workshop	0	0	3	1.5
6	20CH206BS	Engineering Chemistry Lab	0	0	3	1.5
7	20EN207HS	English Language and Communication Skills Lab	0	0	3	1.5
8	20CS208ES	Programming for problem solving Lab	0	0	3	1.5
Total Credits			**11**	**3**	**12**	**20**

CMR TECHNICAL CAMPUS
UGC AUTONOMOUS
B.Tech. I Year Syllabus (w. e. f. A.Y. 2020-21)

Common for CSE & IT

I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	20MA101BS	Algebra and Calculus	3	1	0	4
2	20CH102BS	Engineering Chemistry	3	1	0	4
3	20CS103ES	Programming for problem solving	3	1	0	4
4	20EN104HS	English	2	0	0	2
5	20ME105ES	Engineering Workshop	0	0	3	1.5
6	20CH106BS	Engineering Chemistry Lab	0	0	3	1.5
7	20EN107HS	English Language and Communication Skills Lab	0	0	3	1.5
8	20CS108ES	Programming for Problem Solving Lab	0	0	3	1.5
		Induction Programme				
Total Credits			**11**	**3**	**12**	**20**

II SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	20MA201BS	Ordinary Differential Equations and Vector Calculus	3	1	0	4
2	20AP202BS	Applied Physics	3	1	0	4
3	20EC203ES	Basic Electronics & Electrical Engineering	3	1	0	4
4	20ME204ES	Engineering Graphics	2	0	4	4
5	20AP205BS	Applied Physics Lab	0	0	3	1.5
6	20EC206ES	Basic Electrical &Electronics Engineering Lab	0	0	3	1.5
7	20CS207ES	Basic Elements of Engineering Technology	0	0	2	1
8	20MC208ES	Environmental Science	3	0	0	0
Total Credits			**14**	**3**	**12**	**20**

CMR TECHNICAL CAMPUS
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B.Tech. I Year Syllabus (w. e. f. A.Y. 2020-21)

ECE

I SEMESTER

S. No	Course Code	Course Title	L	T	P	Credits
1	20MA101BS	Algebra and Calculus	3	1	0	4
2	20AP102BS	Applied Physics	3	1	0	4
3	20EC103ES	Basic Electrical & Electronics Engineering	3	1	0	4
4	20ME104ES	Engineering Graphics	2	0	4	4
5	20AP105BS	Applied Physics Lab	0	0	3	1.5
6	20EC106ES	Basic Electrical & Electronics Engineering Lab	0	0	3	1.5
7	20EC107ES	Basic Elements of Engineering Technology	0	0	2	1
8	20MC108ES	Environmental Science	3	0	0	0
		Induction Programme				
Total Credits			**14**	**3**	**12**	**20**

II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	20MA201BS	Ordinary Differential Equations and Vector Calculus	3	1	0	4
2	20CH202BS	Engineering Chemistry	3	1	0	4
3	20CS203ES	Programming for problem solving	3	1	0	4
4	20EN204HS	English	2	0	0	2
5	20ME205ES	Engineering Workshop	0	0	3	1.5
6	20CH206BS	Engineering Chemistry Lab	0	0	3	1.5
7	20EN207HS	English Language and Communication Skills Lab	0	0	3	1.5
8	20CS208ES	Programming for problem solving Lab	0	0	3	1.5
Total Credits			**11**	**3**	**12**	**20**

Engineering Chemistry

B.Tech. II SEM

L	T	P	C
3	1	0	4

Course Objectives:

- To bring adaptability to the concepts of chemistry and to acquire the required skills to become a perfect engineer.
- To impart the basic knowledge of atomic, molecular and electronic modifications which makes the student to understand the technology based on them.
- To acquire the knowledge of electrochemistry, corrosion and water treatment which are essential for the engineers and in industry.
- To acquire the knowledge about fuels, cement, lubricants and refractories which are essential for an engineer.
- To impart the knowledge of stereochemistry and synthetic aspects useful for understanding reaction pathways.

Course Outcomes:

The basic concepts included in this course will help the student to gain:

- The knowledge of atomic, molecular and electronic changes related to Conductivity
- The required principles and concepts of electrochemistry, corrosion and in understanding the problem of water and its treatments.
- The required skills to get clear concepts on fuels, cement, lubricants and refractories.
- The knowledge of configurational and conformational analysis of molecules and reaction mechanisms.

UNIT-I: **10L**

Molecular structure and Theories of Bonding: Atomic and Molecular orbitals

Linear Combination of Atomic Orbitals (LCAO), molecular orbitals of diatomic molecules, molecular orbital energy level diagrams of N_2, O_2, O_2^-, CO, NO and F_2 molecules. π-molecular orbitals of butadiene and benzene.

Crystal Field Theory (CFT): Salient Features of CFT–Crystal Field Splitting of transition metal ion d-orbitals in Tetrahedral, Octahedral and square planar geometries.

UNIT-II: **8L**

Water Chemistry: (08 Hours)

Introduction-hardness of water-Causes of hardness-Types of hardness: temporary and permanent-expression and units of hardness-Estimation of hardness of water by complexometric method. Potable water and its specifications. Steps involved in treatment of water–Disinfection of water by chlorination and ozonization. Boiler feed water and its treatment-Calgon conditioning, Phosphate conditioning and Colloidal conditioning. External treatment of water-Ion exchange process. Desalination of water-Reverse osmosis. Numerical problems.

UNIT –III: **12L**

Electrochemistry and corrosion:

Electrochemistry: Electrochemical cells-electrode potential, standard electrode potential, types of electrodes-calomel, Quinhydrone and glass electrode. Nernst equation- Determination of pH of a solution by using glass electrode. Electrochemical series and its applications. Numerical problems.

Batteries: Primary (Lithium cell) and secondary batteries (Lead-acid storage battery and Lithium ion battery).

Corrosion: Causes and effects of corrosion-theories of corrosion: chemical and electrochemical corrosion-mechanism of electrochemical corrosion, Types of corrosion: Galvanic, water-line and pitting corrosion. Factors affecting rate of corrosion, Corrosion control methods-Cathodic

protection-Sacrificial anodic and impressed current cathodic protection. Surface coatings-metallic coating methods: Hot dipping, Electroplating and Electroless plating of Nickel.

UNIT – IV: **10L**

Stereochemistry, Reaction Mechanism and synthesis of drug molecules.

Stereochemistry: Isomerism: structural and stereo isomers, configurations, symmetry and chirality. Enantiomers, diastereomers, optical activity and absolute configuration. Conformational analysis of n-butane.

Reaction Mechanism: Substitution reactions: Nucleophilic substitution reactions: Mechanism of SN^1, SN^2 reactions. Electrophilic and nucleophilic addition reactions: Addition of HBr to propene. Markownikoff and anti Markownikoff's additions. Grignard addition of carbonyl compounds. Elimination reactions: Dehydrohalogenation of alkylhalides-Saytzeff's rule. Oxidation reactions: Oxidation of alcohols using $KMnO_4$ and chromic acid. Reduction reactions: reduction of carbonyl compounds using $LiAlH_4$ & $NaBH_4$.

Drug molecules: Structure, synthesis and pharmaceutical applications of Paracetamol and Aspirin.

UNIT-V: **10L**

Spectroscopic techniques and applications.

Introduction to spectroscopy, electromagnetic spectrum**:** Principles of electronic magnatic spectroscopy spectroscopy-Lambert –Beer's Law, selection rules: Woodward–Fieser rule. Chromophore, auxochrome and various shifts. Applications of electronic spectroscopy. Principle and selection rules of vibrational and rotational spectroscopy. Applications of vibrational and rotational spectroscopy. Basic concepts of Nuclear magnetic resonance Spectroscopy, chemical shift and splitting pattern of NMR signals. Applications of NMR: Introduction to Magnetic resonance imaging.

TEXT BOOKS:

1. Engineering Chemistry by P. C Jain and M. Jain, Dhanpat Rai Publications, New Delhi, 16th Edition.
2. Text book of Engineering chemistry by Jaya shree Anireddy, Wiley Publications.
3. Engineering Chemistry by Prasanta Rath, B. Rama Devi, Ch. Venkata Ramana Reddy, Subhendu Chakroborty, Cengage Publications, New Delhi-2018.
4. A Textbook of Engineering Chemistry by Dr. Bharathi Kumari Yalamanchili, VGS Techno Series (R18 Syllabus)
5. A Textbook of Engineering Chemistry by Shashi Chawla, Dhanpat Rai Publications, New Delhi.

REFERENCES:

1. Engineering Chemistry by S. S. Dara, S. Chand & Company Ltd, New Delhi.
2. Engineering Chemistry by Shikha Agarwal, Cambridge University Press, New Delhi.
3. Engineering Chemistry by B. Sivasankar, Tata McGraw Hill Education Pvt. Ltd., New Delhi.

Engineering Chemistry Lab

B.Tech. II SEM

L	T	P	C
0	0	3	1.5

Course Objectives: The course consists of experiments related to the principles of chemistry required for engineering student. The student will learn:

- Estimation of hardness and chloride content in water to check its suitability for drinking purpose.
- To determine the rate constant of reactions from concentrations as a function of time.
- The measurement of physical properties like surface tension and viscosity.
- To synthesize the drug molecules and check the purity of organic molecules by thin layer chromatographic (TLC) technique.

Course Outcomes: The experiments will make the student gain skills on:

- Determination of parameters like hardness and chloride content in water.
- Estimation of rate constant of a reaction from concentration – time relationships.
- Determination of physical properties like surface tension and viscosity.
- Calculation of R_f values of some organic molecules by TLC technique.

List of Experiments:

1. Determination of total hardness of water by complexometric method using EDTA.
2. Determination of chloride content of water by Argentometry.
3. Estimation of HCl by Conductometric titrations.
4. Estimation of Acetic acid by Conductometric titrations.
5. Estimation of HCl by Potentiometric titrations.
6. Estimation of Fe2+ by Potentiometry using KMnO4.
7. Determination of rate constant of acid catalysed hydrolysis of methyl acetate.
8. Synthesis of Aspirin.
9. Thin layer chromatography calculation of Rf values. Ex; ortho and para-nitro phenols.
10. Determination of acid value of coconut oil.
11. Estimation of ferrous iron in cement by colorimetric method.
12. Determination of viscosity of given solvent by using Ostwald's viscometer.
13. Determination of partition coefficient of acetic acid between n-butanol and water.
14. Determination of surface tension of a give liquid using stalagmometer.

Note: Any 12 experiments are to be performed References

1. Senior practical physical chemistry, B.D. Khosla, A. Gulati and V. Garg (R. Chand & Co., Delhi).
2. An introduction to practical chemistry, K.K. Sharma and D. S. Sharma (Vikas publishing, N. Delhi).
3. Vogel's text book of practical organic chemistry 5^{th} edition.
4. Text book on experiments and calculations in engineering chemistry–S.S. Dara.

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Common for Civil &Mechanical Engineering

I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	19MA101BS	Mathematics - I	3	1	0	4
2	19PH102BS	Engineering Physics	3	1	0	4
3	19CS103ES	Programming for Problem Solving	3	1	0	4
4	19ME104ES	Engineering Graphics	1	0	4	3
5	19PH105BS	Engineering Physics Lab	0	0	3	1.5
6	19CS106ES	Programming for Problem Solving Lab	0	0	3	1.5
7	19MC109ES	Environmental Science	3	0	0	0
		Induction Programme				
		Total Credits	**13**	**3**	**10**	**18**

II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	19MA201BS	Mathematics - II	3	1	0	4
2	19CH202BS	Chemistry	3	1	0	4
3	19ME203ES	Engineering Mechanics	3	1	0	4
4	19ME204ES	Engineering Workshop	1	0	3	2.5
5	19EN205HS	English	2	0	0	2
6	19CH206BS	Engineering Chemistry Lab	0	0	3	1.5
7	19EN207HS	English Language and Communication Skills Lab	0	0	2	1
		Total Credits	**12**	**3**	**8**	**19**

CMR TECHNICAL CAMPUS
UGC AUTONOMOUS
B.Tech. I Year Syllabus (w. e. f. A.Y. 2019-20)

Common for CSE & IT

I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	19MA101BS	Mathematics - I	3	1	0	4
2	19CH102BS	Chemistry	3	1	0	4
3	19EE103ES	Basic Electrical Engineering	3	0	0	3
4	19ME104ES	Engineering Workshop	1	0	3	2.5
5	19EN105HS	English	2	0	0	2
6	19CH106BS	Engineering Chemistry Lab	0	0	3	1.5
7	19EN107HS	English Language and Communication Skills Lab	0	0	2	1
8	19EE108ES	Basic Electrical Engineering Lab	0	0	2	1
		Induction Programme				
		Total Credits	**12**	**2**	**10**	**19**

II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	19MA201BS	Mathematics - II	3	1	0	4
2	19AP202BS	Applied Physics	3	1	0	4
3	19CS203ES	Programming for Problem Solving	3	1	0	4
4	19ME204ES	Engineering Graphics	1	0	4	3
5	19AP205BS	Applied Physics Lab	0	0	3	1.5
6	19CS206ES	Programming for Problem Solving Lab	0	0	3	1.5
7	19MC109ES	Environmental Science	3	0	0	0
		Total Credits	**13**	**3**	**10**	**18**

CMR TECHNICAL CAMPUS
UGC AUTONOMOUS
B.Tech. I Year Syllabus (w. e. f. A.Y. 2019-20)

Electronics and Communication Engineering

I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	19MA101BS	Mathematics - I	3	1	0	4
2	19AP102BS	Applied Physics	3	1	0	4
3	19CS103ES	Programming for Problem Solving	3	1	0	4
4	19ME104ES	Engineering Graphics	1	0	4	3
5	19AP105BS	Applied Physics Lab	0	0	3	1.5
6	19CS106ES	Programming for Problem Solving Lab	0	0	3	1.5
7	19MC109ES	Environmental Science	3	0	0	0
		Induction Programme				
		Total Credits	**13**	**3**	**10**	**18**

II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	19MA201BS	Mathematics - II	3	1	0	4
2	19CH202BS	Chemistry	3	1	0	4
3	19EE203ES	Basic Electrical Engineering	3	0	0	3
4	19ME204ES	Engineering Workshop	1	0	3	2.5
5	19EN205HS	English	2	0	0	2
6	19CH206BS	Engineering Chemistry Lab	0	0	3	1.5
7	19EN207HS	English Language and Communication Skills Lab	0	0	2	1
8	19EE208ES	Basic Electrical Engineering Lab	0	0	2	1
		Total Credits	**12**	**2**	**10**	**19**

Chemistry

B.Tech. II SEM

L	T	P	C
3	1	0	4

Course Objectives:

- To bring adaptability to the concepts of chemistry and to acquire the required skills to become a perfectengineer.
- To impart the basic knowledge of atomic, molecular and electronic modifications which makes the student to understand the technology based onthem.
- To acquire the knowledge of electrochemistry, corrosion and water treatment which are essential for the Engineers and inindustry.
- To acquire the skills pertaining to spectroscopy and to apply them for medical and other fields.
- To impart the knowledge of stereochemistry and synthetic aspects useful for understanding reactionpathways.

Course Outcomes:

- The basic concepts included in this course will help the student to gain the knowledge of atomic, molecular and electronic changes, band theory related to conductivity.
- The required principles and concepts of electro chemistry, corrosion andin understanding the problem of water and itstreatments.
- The required skills to get clear concepts on basic spectroscopy and application to medical and otherfields.
- The knowledge of configurational and conformational analysis of molecules and reactionmechanisms.

UNIT - I:

Molecular structure and Theories of Bonding: Atomic and Molecular orbitals. Linear Combination of Atomic Orbitals (LCAO), molecular orbitals of diatomic molecules, molecular orbital energy level diagrams of N_2, O_2 and F_2 molecules. π molecular orbitals of butadiene and benzene.Crystal Field Theory (CFT): Salient Features of CFT – Crystal Field Splitting of transition metal ion d- orbitals in Tetrahedral, Octahedral and square planar geometries. Band structure of solids and effect of doping on conductance.

UNIT - II:

Water and its treatment: Introduction – hardness of water – Causes of hardness - Types of hardness: temporary and permanent – expression and units of hardness – Estimation of hardness of water by complexometric method. Potable water and its specifications. Steps involved in treatment of water – Disinfection of water by chlorination and ozonization. Boiler feed water and its treatment – Calgon conditioning, Phosphate conditioning and Colloidal conditioning. External treatment of water – Ion exchange process. Desalination of water – Reverse osmosis. Numericalproblems.

UNIT - III:

Electrochemistry and corrosion: Electro chemical cells – electrode potential, standard electrode potential, types of electrodes – calomel, Quinhydrone and glass electrode. Nernst equation Determination of pH of a solution by using quinhydrone and glass electrode. Electrochemical series and its applications. Numerical problems. Potentiometric titrations. Batteries – Primary (Lithium cell) and secondary batteries (Lead – acid storage battery and

Lithium ion battery).Causes and effects of corrosion – theories of chemical and electrochemical corrosion – mechanism of electrochemical corrosion, Types of corrosion: Galvanic, water-line and pitting corrosion. Factors affecting rate of corrosion, Corrosion control methods- Cathodic protection– Sacrificial anode and impressed current cathodic methods. Surface coatings – metallic coatings – methods of application. Electroless plating of Nickel.

UNIT - IV:

Stereochemistry, Reaction Mechanism and synthesis of drug molecules: Introduction to representation of 3-dimensional structures, Structural and stereoisomers, configurations, symmetry and chirality. Enantiomers, diastereomers, optical activity and Absolute configuration. Conformation alanalysisof n- butane.Substitution reactions: Nucleophilic substitution reactions: Mechanism of S_N1, S_N2 reactions. Electrophilic and nucleophilic addition reactions: Addition of HBrto propene. Markownikoff and anti Markownikoff's additions. Grignard additions on carbonyl compounds. Elimination reactions: Dehydro halogenation of alkylhalides. Saytzeff rule. Oxidation reactions: Oxidation of alcohols using $KMnO_4$ and chromicacid.Reduction reactions: reduction of carbonyl compounds using $LiAlH_4$& $NaBH_4$. Hydroboration of olefins. Structure, synthesis and pharmaceutical applications of Paracetamol andAspirin.

UNIT - V:

Spectroscopic techniques and applications: Principles of spectroscopy, selection rules and applications of electronic spectroscopy. vibrational and rotational spectroscopy. Basic concepts of Nuclear magnetic resonance Spectroscopy, chemical shift. Introduction to Magnetic resonance imaging.

Suggested Text Books:

1. Physical Chemistry, by P.W.Atkins
2. Engineering Chemistry by P.C.Jain&M.Jain; DhanpatRai Publishing Company (P) Ltd., NewDelhi.
3. Fundamentals of Molecular Spectroscopy, by C.N.Banwell
4. Organic Chemistry: Structure and Function by K.P.C. Volhardt and N.E.Schore, 5th Edition.
5. University Chemistry, by B.M. Mahan, Pearson IVEdition.
6. Engineering Chemistry (NPTEL Web-book), by B.L. Tembe, Kamaluddin and M.S. Krishnan

Engineering Chemistry Lab

B.Tech. II SEM

L	T	P	C
0	0	3	1.5

Course Objectives:

- The course consists of experiments related to the principles of chemistry required for engineering student. The student willlearn Estimation of hardness and chloride content in water to check its suitability for drinking purpose.
- To determine the rate constant of reactions from concentrations as an function oftime.
- The measurement of physical properties like adsorption andviscosity.
- To synthesize the drug molecules and check the purity of organic molecules by thin layer chromatographic (TLC)technique.

Course Outcomes: The experiments will make the student gain skills on:

- Determination of parameters like hardness and chloride content inwater.
- Estimation of rate constant of a reaction from concentration – timerelationships.
- Determination of physical properties like adsorption andviscosity.
- Calculation of R_f values of some organic molecules by TLCtechnique.

List of Experiments:

1. Determination of total hardness of water by complexometric method usingEDTA
2. Determination of chloride content of water byArgentometry
3. Estimation of an HCl by Conductometrictitrations
4. Estimation of Acetic acid by Conductometrictitrations
5. Estimation of HCl by Potentiometrictitrations
6. Estimation of Fe^{2+} by Potentiometry using$KMnO_4$
7. Determination of rate constant of acid catalysed hydrolysis of methylacetate
8. Synthesis of Aspirin andParacetamol
9. Thin layer chromatography calculation of R_f values. egortho and para nitrophenols
10. Determination of acid value of coconutoil
11. Verification of freundlich adsorption isotherm-adsorption of acetic acid oncharcoal
12. Determination of viscosity of castor oil and ground nut oil by using Ostwald's viscometer.
13. Determination of partition coefficient of acetic acid between n-butanol andwater.
14. Determination of surface tension of a give liquid usingstalagmometer.

References

1. Senior practical physical chemistry, B.D. Khosla, A. Gulati and V. Garg (R. Chand & Co.,Delhi)
2. An introduction to practical chemistry, K.K. Sharma and D. S. Sharma (Vikas publishing, N.Delhi)
3. Vogel's text book of practical organic chemistry 5thedition
4. Text book on Experiments and calculations in Engineering chemistry – S.S.Dara

The Chairman concluded the meeting and thanked all the members for attending and sharing their views.

2/12/19

Chairman,
Board of Studies,
Department of Chemistry,
CMR Technical Campus.