Dept. of English

R.T.E. SOCIETY'S

ARTS, SCIENCE AND COMMERCE COLLEGE, RANEBENNUR - 581 115 DIST : HAVERI

TIME TABLE FOR THE YEAR 2021 - 2022

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8-9					B.A I & II Sem (A)	
9-10						
10-11		B. Com I & II Sem	B. Com I & II Sem			B. Com III & IV Sem
11-12	B.A I & II Sem (A)	B.A I & II Sem (A)	B.A I & II Sem (A)	B.A III & IV Sem	B.A III & IV Sem	B.A [illegible]
12-12.30			**REST**			
12.30-1.30	B.Sc III & IV Sem (A)	B.Sc III & IV Sem (A)	B.Sc III & IV Sem (A)	B.Sc I & II Sem (A)	B. Com I & II Sem (A)	B.Sc I Sem (A)
1.30-2.30						
2.30-3.30			B.Sc I & II Sem (A)			

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Syllabus

B.A I Semester

Text: Shalmala - An Anthology of Poetry and Prose.

Prose: 1. Of Studies
2. Our Civilization
3. The Fortune Teller

Poetry: 1. Seven Ages of Man
2. Death the Leveller
3. Night of the Scorpion

Grammar: 1. Articles
2. Prepositions
3. Words used in different Parts of Speech
4. Verb Forms (Tenses)
5. Synonyms and Antonyms.

Syllabus

B.Sc I Semester

Text: Timeless Wisdom: Board of Editors

Prose: 1. Playing the English Gentleman
2. Let's Go Home
3. Marriage is a Private Affair

Poetry: 1. A River
2. The Road Not Taken
3. If -

Grammar: Articles
Prepositions
Words used in different parts of Speech
Verb forms (Tenses)
Synonyms
Antonyms

Syllabus

B. Com I Semester

Text: Life and Learning: Board of Editors.

Prose: 1. The Eyes are Not Here
2. The Kabuliwallah
3. from De colonising the Mind

Poetry: 1. Sonnet 130
2. Mending Wall
3. Goodbye Party for Miss Pushpa T.S

Grammar: Articles
Prepositions
Words used in different part of speech
Verb Forms (Tenses)
Synonyms
Antonyms.

Syllabus

B. Com III Semester

Grammar: Pair of words
Cloze Test
Precis Writing
Interpretation of notices
Letter writing on public issues.

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Syllabus

B.A. III Semester

Text: Drama: Sisi Sampige - Chandrashekara Kambar.

Grammar: Pairs of Words
Cloze Test
Precis Writing
Interpretation of Notices
Letter writing on public Issues.

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Syllabus

B.Sc III Semester

Text: Arms and The Man - Drama by G.B. Shaw.

Grammar: Pairs of words
Cloze Test
Precis Writing
Interpretation of notices
Letter writing on public issues.

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Syllabus

B.Com IV Semester

Grammar: 1. Framing 'WH' questions
2. Use of Affixes
3. Transformation of Sentences
4. Comprehension of Passage
5. Paragraph Writing
6. Job Application

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Syllabus

B.A. IV Semester

Text: The Guide, by R K Narayan

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Syllabus

B.A III Semester

Grammar: 1. Forming W.H. questions
2. Use of Affixes
3. Transformation of Sentences
(Active/passive voice, Direct/Indirect speech, Simple, Compound, complex Sentences, Degrees of Comparison, Assertive & Interrogative Sentences).
4. Comprehension of Passages
5. Paragraph Writing
6. Job Application.

Text: Kanthapura - A novel by Raja Rao

Syllabus

B.A II Semester

Text: Shalmala

Prose: 1. The Nightingale and the Rose
2. The Cuckoo of Wordsworth
3. The Silver Lining

Poetry: 1. To India - My Native Land
2. The Village School Master
3. The Tyger

Grammar & Composition:
1. Correction of Errors
2. Combining Sentences with appropriate conjunctions
3. Use of Adverbs and Adjectives.
4. Dialogue Writing
5. Short Speeches - 1. Welcoming 2. Introducing 3. Proposing vote of thanks 4. Teachers' Day. 5 Gandhi Jayanthi 6. Independence Day 7. Republic Day
6. One word substitutions 7. Collocations.

Syllabus

B.Sc II Semester : Text: Timeless Wisdom

Prose: 1. Sparrows - K.A. Abbas
2. An Astrologer's Day - R.K. Narayan
3. The function of Education - S. Krishnamoorthi

Poetry: 1. The World is Too Much with Us
2. Prayer Before Birth
3. Gandhi.

Grammar & Composition:
1. Correction of Errors
2. Combining Sentences with appropriate Conjunctions
3. Use of Adverbs & Adjectives
4. Dialogue Writing
5. Short Speeches: a) Welcoming b) Introducing
c) Proposing Vote of thanks d) Teachers Day
e) Gandhi Jayanthi f) Independence Day
g) Republic Day
6. One word Substitutions
7. Collocations

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Syllabus

B.Com II Semester : Text: Life and Learning

Prose: 1. On Shaking hands - A.G. Gardiner
2. The Diamond Necklace - Maupassant
3. My Brother, My Brother - Nosab Burke

~~Poetry: 1.~~

Grammar & Composition:
1. Correction of Errors
2. Combining Sentences with appropriate Conjunctions
3. Use of Adverbs / Adjectives
4. Dialogue Writing
5. Short Speeches: a) Welcoming b) Introducing
c) Proposing Vote of thanks d) Teachers Day
e) Gandhi Jayanthi f) Independence day
g) Republic day
6. One word Substitutions
7. Collocations.

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ODDSEM-2021-22

Conspectus of Studies

Month	Class	Topics to be covered
October	B.A I Sem 'A' Division	Introduction about NEP Of Studies Articles
	B.Sc I Sem 'A' Division	Introduction about NEP Playing The English Gentleman Articles
	B-Com I Sem	Introduction about NEP Eyes are not here Articles
	B.A III Sem 'A' Division	Introduction to Chandrashekar Kambar Works of 'Siri Sampige' Scene NO-1 to 3 Pairs of words
	B.Sc III Sem	Introduction to G.B. Shaw Works of Doors and The Man Act-I Pairs of words
	B Com III Sem	Pairs of words
November	B.A I Sem	One Civilization Seven Ages to Man Prepositions
	B.Sc I Sem	Let's Go Home A Rives Prepositions
	B.Com I Sem	The Kabuliwallah Sonnet-130 Prepositions
	B.A III Sem	Siri Sampige Scene No-4 to 8 Cloze Test
	B.Sc III Sem	Doors and The Man Act-II Cloze Test
	B-Com III Sem	Cloze Test

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Conspectus of Studies

Month	Class	Topics to be covered
December	B.A I Sem.	The Parking Tellers
		Death the Leveller
		Words used in different Parts of speech
	B.Sc I Sem	Marriage is a Private Affair
		The Road Not Taken
		Words used in different parts of speech
	B.Com I Sem	from Decolonising the Mind
		Mending Wall
		Words used in different parts of speech
	B.A III Sem	Sirisampige
		Scene No - 9 - 12
		Precis Writing
	B.Sc III Sem	Bosse and The Man
		Act - III
		Precis Writing
	B.Com III Sem	Precis Writing

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Month	Class	Topics to be covered
January	B.A I Sem	Night of the Scorpion
		Verb Forms
	B.Sc I Sem	If -
		Verb forms
	B.Com I Sem	Good bye Party to Miss Pushpa. T.S
		Verb Forms
	B.A III Sem	Sirisampige
		Scene No - 12 to 14
		Interpretation of notices
	B.Sc III Sem	Explanation about important
		Episodes of the play Bosse the Man
		Interpretation of notices
	B.Com III Sem	Interpretation of Notices

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Even Semester - 2021-22

Conspectus of Studies

Month	Class	Topics to be covered
February	B.A I Sem	Synonyms Antonyms
	B.Sc I Sem	Synonyms Antonyms
	B.Com I Sem	Synonyms Antonyms
	B.A III Sem	Scene No - 15 and 16 Letter writing on public issues
	B.Sc III Sem	Language - Questions on Theme of the Play Drama and the Plan Letter writing on public issues
	B.Com III Sem	Letter writing on public issues
May	B.A II Sem	The Nightingale and the Rose To India - My Native land Correction of Errors
	B.Sc II Sem	Sparrows The world is too much with us Correction of Errors
	B.Com II Sem	On Shanking hands Correction of Errors
	B.A IV Sem	Introduction to The Guide chapter No- 1 & 2
	B.Sc IV Sem	Introduction to The Novel Kanthapura - chapter No- 1 & 2 Framing WH questions
	B.Com IV Sem	Framing 'WH' questions on Use of affixes

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Conspectus of Studies

Month	Class	Topics to be covered
June	B.A II Sem	The Cantos of Lochsouth The Village Schoolmaster Conjunctions
	B.Sc II Sem	An Astrologer's Day Prayer Before Birth Conjunctions
	B.Com II Sem	The Diamond Necklace Conjunctions Adverbs & Adjectives
	B.A IV Sem	Chaplin No. 3, 4, 5 (The Guide)
	B.Sc IV Sem	Kanthapura Chaplin No. 3, 4, 5 Transformations of Sentences
	B.Com IV Sem	Transformation of Sentences

Month	Class	Topics to be covered
July	B.A II Sem	The Silver Lining The Tyger Adverbs & Adjectives. Dialogue Writing
	B.Sc II Sem	The Function of Education Gandhi Adverbs & Adjectives. Dialogue Writing.
	B.Com II Sem	My Brother. My Brother Dialogue Writing
	B.A IV Sem	The Guide – Chaplin No. 6, 7 & 8.
	B.Sc IV Sem	Kanthapura – Chaplin No. 6, 7 & 8. Comprehension & Passages
	B.Com IV Sem	Comprehension & Passages

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Month	Class	Topics to be covered
August	B.A II Sem	Short Speeches One word Substitutions Collocations
	B.Sc II Sem	Short speeches One word Substitutions Collocations.
	B.Com II Sem	Short speeches One word Substitutions Collocations
	B.A IV Sem	Chaplin No. 9, 10 & 11
	B.Sc IV Sem	Kanthapura Chaplin No. 9, 10, 11 Paragraph writing Job Applications
	B.Com IV Sem	Paragraph Writing Job Application

Month	Class	Topics to be covered

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Dept. of chemistry

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ARTS, SCIENCE AND COMMERCE COLLEGE, RANEBENNUR - 581 115 DIST : HAVERI

TIME TABLE

FOR THE YEAR 2019 - 2020

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8 to 9	Bsc III & Bsc IV Sem Practicals	Bsc III & Bsc IV Sem Practicals	Bsc III & Bsc IV Sem Practicals			
9 to 10				Bsc V & VI Sem	Bsc V & VI Sem	Bsc V Sem
10 to 11						
11 to 12					Bsc I Sem & II Sem	
			REST			
12:15 to 1:15			Bsc III & IV Sem A		Bsc V & VI Sem Practicals	Bsc V & VI Sem Practicals
to 2:15 to 3:15	Bsc III B & IV Sem B					
to 4:15 to 5:15						

Bsc I sem.

Syllabus

Gaseous State.

Distribn of molecular speed, Maxwell's Boltzmann law of distribn of molecular velocities. Calculn of molecular velocities of gaseous molecules, most probable and RMS velocities, Collision diameter, mean free path, collision nos, Critical phenomenon, Critical constants, Andrew's isotherms, Vander waal's eqn and Critical Constants & measurements of Critical constants (T_c, P_c, V_c), law of corresponding State, Reduced eqn of states

Syllabus

Liquid State

Intermolecular forces, str of liquids (quantitative descripns), Structural differences blw solids, liquids & gases, physical properties of liquids

a) Vapour pressure & enthalpy of vapn & numerical problems.

b) Surface Tension, surface energy, effect of temp on surface tensn, shapes of liquid drops & and soap bubbles, Capillary action, determn of ST of liquids by drops & soap bubbles Capillary actions, detmn of ST of liquids, detmn of viscosity of liquids by using Ostwald viscometer and numerical problems. d) R. Indexe; Specific and molar Refracns and their Applicns, detmn of R.I of liquid using Abbis Refra-

BSc III Sem

Syllabus

& numerical problems

Nernst Distribn Law

Distribn law: TD desirn of distribn law, Calculn of partition co-efficient. devn from distributn law due to mole-cula complexity, applicns of distribn law – extn of substance from soln with desirn & numerical problems.

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BSc III Sem

Syllabus

Thermodynamics.

First law of TD, Heat contents (q_v & q_p) workdone in Reversible & irreversible isothermal expn of an ideal gas, workdone on the sys in Reversible adiabatic of ideal gas (TV & PV Relns), J-T effect. inversn temp, J.T expt, derivn for J-T co-efficient Kirchoff's eqn 2nd law of TD. Cyclick process, Carnot's Cycle, heat engin & its efficiency, Carnots theorem, entropy & its significance Entropy changes in Reversible & Irrevrible Process for ideal gas, free energy, dependence of free energy on Pressure & Temp, free energy chang. and spontenity of Gibb's-Helmoltz eqn, Clausius-Claupyron integrated eqn & Applicns partial molas quantities. Chemical potential of an ideal gas.

BSc III Sem Syllabus

Photochemistry

Laws of photochemistry, Grotthus Draper Law, Stark Einstein's law, diff b/w photophysical & photochemical process c exmples, coupn of photochemical & thermal reacns, quantum yield of photochemical coubn of a. H_2 & Cl_2 b. H_2 and Br_2 c. Dissn of HI. d. dimn of anthracene. Detn of quantum yield by thermo-couple method & chemical actinomer, photosentn, photostationary eqm single & triplet states, flouresn, phosphn, Chemiln biolumcn, chemical sensors, Beer lamberts law. applicns and problems on adsorbn and molas extn co-efficn.

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BSc IV Sem Syllabus

Adsorbn & catalysis

Adsorbn, adsorbn isotherms Freundlich's & Langmuir's adsorbn isotherm derivn, & their limitns, multilayer theory, BET adsorbn eqn & its multiplns, Theories of catalysis, intermediate compound & adsorbn theory kinetics of acid base catalyst, Sensal & specific Enzymes catalysis, Michael's menton eqn, bio-enzymes & industrial applicns.

BSc IV Sem

Phase Rule: Statement & expln of the terms with excamples, phase, comp. degree of freedom, Gibb's phase rule. Applicns of phase equilibria, for one comp. system, Reduced phase rule two components Systems (Zn–cd, KI–H_2O and Ag–Pb), Pattinson process of desilver, eutectic & freezing mix flues, Applicns.

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BSc IV Sem **Syllabus**

Micelles

Emulsions, micro emulsions or micellar emulsions, electro kinetic effects, colloidal electrolytes, or assocn colloids, surface active agents or surfactants, solubilz of surfactant solutions.

BSc II Sem.

Chemical kinetics

Rate of reacn, second order reacn: derivn of second order velocity constants, when a=b, and a≠b relatn blw half life period, order of reacn, determn of order of reacn by differential eqn method and, numerical problems.

Complex reacns: derivn of rate constant for 1st order parallel, reversible consecutive reacns.

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Science, Commerce Colleges

Syllabus

BSc VI Sem. P-I

Paper I Electrochemistry.

Theory of strong electrolytes, Debye-Huckel theory of S. electrolytes, Debye-Huckel Onsagar eqn, Relaxn effect, Electrophoretic effect, viscous effect, Interionic attraction theory, Activity coefficients of electrolytes, mean ionic activity Co-efficients of electrolytes, Ionic strength of electrolyte soln, Theory of electrolyte dissocn: Arrhenius theory of ionizn and its limitns, migrn of ions. transport nov, Hittorf's method and moving boundary problems. conductometric titrns.

Paper II BSc V Sem

Molecular Spectroscopy

Intracn of EMR with matter, Ems.

BSc V Sem Syllabus P-II

(a) Rotational spectroscopy:

Rotatn of molecules, diatomic, Rigid rotator, Select rule, desirn & expn of Energy and bond length (HCl) Polyatomic molecules, Linear, symmetric top, Assymmetric top molecules.

(b) Vibrational spectroscopy P-II

Vibrating diatomic molecules – Energy of diatomic molecules, force constant. Vibrational spectra, harmonically vibrating diatomic molecules (HCl) & anharmic case, Morse potentials funcn & d.E. Vibrn & Rotational spectra of diatomic molecules (Only CO) Group frequencies (-NH, -OH, $-NH_2$, >CO, >CHO), >COOH, >C=N, C-H), R-spectra Group. Vibrn & Rotational Raman Spectra.

BSc V Sem Syllabus P-II

(c) Electronic Spectroscopy:

Diatomic molecules: Born oppenheimer approximation, Frank condon principle, pre dissocn, applicn of U.V visible spectra in organic molecules.

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BSC VI Sem **Syllabus**

Electro Motive force (EMF) P-2

Reversible & irreversible cells, EMF of a chemical cell & its measurment by potentiometer, standard cell. types of electrodes, R. electrod, Calomel electrode, sign convns, Nernst eqn, electrochemical series. and its applicns, determn of pH of soln by hydrogen electrode, quinhydrone & glass electrode methods, Concn cell, determn of solubility, potentiometric titrn, acid base, Calculn of ka & redox titrn. determn of redox potential & numerical problems.

BSC VI Sem **Syllabus**

Battery technology. P-I

Primary & 2° cells, Lead storage battery & its applicns, Ni cd cells, Li battery, fuel cells & thir applicns. Corrosn types and factors influencing corrosn, theory of corrosn & Methods of prevn.

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Conspectus of Studies

Month	Class	Topics to be covered
July 2019	2019 BSc I Sem	Gaseous State distribution of molecular speed. Maxwell's Boltzmann law of distribution of molecular velocities, Calculation of molecular velocities of gaseous molecules, average, most probable and RMS velocities, Collision diameter, mean free path, Collision numbers, critical phenomenon
July 2019	BSc III Sem	Nernst's Distribution Law distribution law: thermodynamic derivation of distribution law, calculation of partition coefficient, deviation from distribution law due to molecular complexity (association & dissociation), applications of distribution law - extraction of substance from solution with derivation and numerical problems.

Month	Class	Topics to be covered
July 2019	BSc V Sem P-I	Electrochemistry Theory of strong electrolytes: debye-Huckel theory of strong electrolytes, debye-Huckel Onsagar equation (no derivation) relaxation effect, electrophoretic effect, viscous effect,
Aug 2019	BSc I Sem	Gaseous state Critical phenomenon:- Critical Constants, Andrew's isotherms, Van der Waal's equation and critical constants, measurement of critical constant (Tc, Pc and Vc). Law of corresponding state and reduced equation of states.

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Conspectus of Studies

Month	Class	Topics to be covered
Aug 2019	BSc III Sem	Thermodynamics: First law of thermodynamics, heat Contents (q_v & q_p) work done in reversible & irreversible isothermal expansion of ideal gas, Work done on the system in reversible & adiabatic of ideal gas, Joule-Thomson effect, Joule-Thomson Experiment, derivation for Joule-Thomson Coefficient, Kirchoff's Equation second law of thermodynamics, cyclic process, Carnot's cycle, Carnot's theorem, free Energy: dependence of free energy on pressure and temp,
Aug 2019	BSc V Sem	Electrochemistry Interionic attraction theory, activity Coefficients of electrolytes, mean ionic activity Coefficients of electrolyte, ionic Strength of electrolyte solution. Theory of electrolyte dissociation:

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Month	Class	Topics to be covered
Sept 2019	BSc I	liquid State Intermolecular forces, Structure of liquids (quantitative description), structural differences between ideal liquids and gases, physical properties of liquid: a) Vapour pressure and Enthalpy of Vaporization and numerical problems. b) Surface tension, Surface Energy, effect of temp on surface tension, shapes of liquid drops & soap bubbles, Parachor and its application & problems.
Sept 2019	BSc III	Photo Chemistry Law of photochemistry, Grotthus-Draper law, Stark-Einstein law, difference between photophysical & photochemical process, examples. Quantum yield & photochemical Combination of H_2 & Cl_2 and Br_2. c) Dissociation of HI. d) Dimerisation of anthracene determination & quantum yield by thermo-couple method & chemical actinometers.

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Conspectus of Studies

Month	Class	Topics to be covered
Aug 2019	B Sc III Sem	Thermodynamics. Free Energy change and spontaneity of reaction, Gibbs-Helmholtz equation, Clausius-Clapeyron integrated equation and applications, partial molal quantities, chemical potential of an Ideal gas.
~~Aug~~ Sept 2019	B Sc V P-II	Molecular Spectroscopy a) Rotational Spectroscopy Rotation of molecules, diatomic: rigid rotator, selection rule: derivation for expression of Energy & bond length (rel). poly atomic molecules: linear, symmetric top, asymmetric top molecules. b) Vibrational Spectroscopy: Vibrations diatomic molecules - Energy & diatomic molecules, force constant, Vibrational spectra: harmonically vibrating diatomic molecule (rel), & anharmonic diatomic molecule (rel), & rotational spectra, vibration & rotational spectra of diatomic molecules (only co), group frequency, Raman spectra: Vibrational and rotational Raman spectra.

Month	Class	Topics to be covered
Sept 2019	B Sc V P-I	Electrochemistry Arrhenius theory & ionization and its limitations. Migration of ions: transport number, Hittorf's method and moving boundary method with problems, Conductometric titrations.
Oct 2019	B Sc I Sem	Liquid state a) Viscosity, effect of temp on viscosity, determination of viscosity of liquids by using Ostwald's viscometer and numerical problems. b) refractive index, specific & molar refractions and their applications. determination of refractive index of liquid using Abbe's refractometer and numerical problems.

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Conspectus of Studies

Month	Class	Topics to be covered
Oct 2019	BSc III Sem	Photo Chemistry Photosensitization, photostationary equilibrium single and triplet states, fluorescence, phosphorescence, Chemiluminescence, bioluminescence, Chemical sensors, ~~Beer~~ Lambert's law, applications and problems on absorption and molar Extinction Co-efficient.
Oct 2019	BSc V Sem P-II	Electronic Spectroscopy Of diatomic molecules: Born-Oppenheimer approximation, Vibrational Coarse structure & Electronic transition and intensity Franck-Condon principle, pre-dissociation, applications of UV, Visible Spectroscopy in organic molecules.
Dec 2019	BSc III Sem	Chemical kinetic Rate of reaction, Second order reaction: derivation of Second order velocity Constants, when a=b.
Dec 2019	BSc IV Sem	~~Adsorption~~ Adsorption: Adsorption isotherm Call five types) Freundlich's Langmuir Adsorption isotherm (Derivation) and their limitations Multilayer theory: BET theory isotherm (Eqn2 only) measurement & Surface area of adsorbent Gibb's Adsorption Equation and its applications.

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Conspectus of Studies

Month	Class	Topics to be covered
Dec 2019	B.Sc VI Sem P-I	EMF Reversible and irreversible Cells, EMF of a chemical Cell and its measurement by Potentiometer, standard Cell, types of electrodes, reference electrode: Calomel electrode sign Conventions, Nernst Equation, electrochemical series & its Applications.
Jan 2020	B.Sc II Sem	Chemical Kinetics When a≠b ~~and a=b~~, relation between half life period and order of reaction, determination of orders of reaction by differential equation method & half life period method
Jan 2020	B.Sc IV Sem	Adsorption Theories of Catalysis; Intermediate Compound and Adsorption theory, kinetics of Acid-Base Catalysis: general and specific. Enzyme Catalysis, Michael's-Menton Equation for enzymes and industrial applications,
Jan 20 ~~Dec~~	B.Sc VI Sem P-I	EMF determination of pH of solution by hydrogen electrode, quinhydrone and glass electrode methods, Concentration Cell with and without transference, liquid junction potential salt bridge & its Applications. Application of Conc. Cells, determination of solubility.

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Conspectus of Studies

Month	Class	Topics to be covered
Feb 2020	BSc II	Chemical Kinetics Numerical problems. Complex reactions: derivations of rate constant for first order
Feb 2020	BSc IV Sem	phase Rule statements and Explanation of the terms & Examples: phase, Components, degree of freedom Gibbs phase rule. Applications of phase Equilibrium for one Component System. E.M.F.
Feb 20	BSc VI	Potentiometric titration: acid-base Calculation of ka and redox titration, determination of Redox potential & numerical problems.

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Month	Class	Topics to be covered
Feb 2020	BSc II Sem	Chemical Kinetics derivations of rate Constant for first order parallel, reversible and Consecutive reactions, and remaing problems.
March 2020	BSc IV Sem	phase Rule Reduced phase rule, two Component Systems: (Zn-Cd) (KI - H_2O) and Ag-Pb) Pattinson's process & desilverization, eutectic and freezing mixtures and their Applications.

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Conspectus of Studies

Month	Class	Topics to be covered
March 2020	BSc VI Sem	Battery Technology Primary and Secondary Cells, Lead storage battery and its Applications, Ni–Cd Cells, Lithium battery, fuel Cells and their Applications.
March 2020	BSc IV	Miscelles. Emulsions, micro emulsions or micellar emulsions, Electro kenetic effects, Colloidal Electrolytes / association Colloids.

Month	Class	Topics to be covered
March 2020	BSc VI Sem	Battery Technology · Corrosion: types and factors influencing Corrosion theory of Corrosion and methods of prevention.
April 2020	BSc IV sem	Miscelles. Surface active agents or Surfactants, Solubilization of surfactant solution.

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Dept. of physics

R.T.E. SOCIETY'S

ARTS, SCIENCE AND COMMERCE COLLEGE, RANEBENNUR - 581 115 DIST : HAVERI

TIME TABLE

FOR THE YEAR 2017-2018

Time	*Monday*	*Tuesday*	*Wednesday*	*Thursday*	*Friday*	*Saturday*
8 to 9				↑	↑	↑
9 to 10	~~BSc I pra 2 & 3rd batch~~	~~BSc I pra 4 & 5th batch~~	~~BSc I pra 6 & 7 batch~~	BSc I sem 2 & 3rd batch	BSc I sem pra 4 & 5th batch	BSc I sem pra 6 & 7 batch
10 to 11				│	│	│
11 to 12				↓	↓	↓
12-15 to 1-15	BSc V sem		**REST** BSc I sem		BSc III rd sem	
1-15 to 2-15		↑	BSc I sem	↑	BSc III rd sem	
2-15 to 3-15		BSc Vth sem Pra 3 & 4th batch		BSc V sem pra 1 & 2 batch		
3-15 to 5-15		↓		↓		

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HOD OF PHYSICS
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BSC-1 SEMESTER

UNIT 3: Moment of Inertia ;- Kinetic Energy of a rotating body, Definition of M.I. and radius of gyration, Perpendicular and Parallel axis theorems (derivations), M.I of rectangular lamina, Annular ring and circular disc, (derivations), Hallow and Solid Cylinders (mention of expressions), M. I. of Flywheel (Theory and Experimental determination). 07 Hrs

Problems 02 hrs

UNIT 4: Elasticity ;-Stress, Strain, Elastic limit, Hook's law, Modulii of elasticity for isotropic materials, Relation between elastic constants (Derivation), Definition of Poisson's Ratio, Work done for unit Volume in stretching a wire, Bending of Beams Neutral surface, Neutral axis, Plane of Bending, Bending Moment, Expression for bending moment (Derivation), uniform bending (mention formula), Theory of light cantilever (Derivation) and I-section girder (qualitative), Torsion expression for the couple per unit twist, Torsional pendulum, Experimental determination of "Y" by bending.

07 Hrs

Problems 02 Hrs

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Syllabus

List of Experiments:

1. Bar Pendulum L vs. T and L2 Vs. LT2 graphs.
2. M.I. of the Fly-Wheel
3. Verification of Parallel axes theorem of Moment of Inertia using Bar Pendulum.
4. Verification of Perpendicular axes theorem of Moment of Inertia using Tortional Pendulum.
5. Bifilar Suspension.
6. Young's Modulus of the material of a wire using Searls' Apparatus.
7. Y- by Uniform bending- Load depression Graph.
8. Torsion Pendulum – Rigidity of Modulus.
9. Co-efficient of viscosity of liquid by Stoke's method.
10. Surface Tension by Jeager's Method / Quincke's method.
11. Radius of Capillary tube by mercury pellet method.
12. Use of CRO – Measurement of AC voltage and frequency for sine and square waves.
13. Use of multimeter (demonstration)

R.T.E.S. Arts, Science, Commerce College, Ranebennur 581115 Dist:Haveri (Karnataka)

Syllabus

B.Sc-II Semester

UNIT 2: Thermodynamics Heat engines: Otto engine, Otto cycle, expression for efficiency, Diesel engine, Diesel cycle, expression for efficiency & Carnot's theorem Entropy: Concept of entropy, change in entropy in reversible & irreversible processes, entropy-temperature diagram, second law of thermodynamics. Maxwell's relations-derivation of Maxwell's relations, applications to – 1) ClausiusClapeyron's equation, 2) Clausius equations (specific heat of saturated vapours) 10 hrs

Problems 02 hrs

PHY 2.2 : Physics Lab – II List of experiments:

1. Volume Resonator
2. Frequency of AC using Sonometer
3. Velocity of sound through wire using sonometer
4. Use of CRO – study of Lissajous figures
5. Lee's method of determination of thermal conductivity of rubber
6. Thermal conductivity of poor conductor (perspex)
7. Y- by Uniform bending- Load depression Graph.
8. Torsion Pendulum – Rigidity of Modulus.
9. Co-efficient of viscosity of liquid by Stoke's method.
10. Surface Tension by Jeager's Method / Quincke's method.
11. Radius of Capillary tube by mercury pellet method.
12. Use of CRO – Measurement of AC voltage and frequency for sine and square waves.
13. Use of multimeter (demonstration)

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R.T.E.S.Society's Arts, Science & Commerce Degree College, RANEBENNUR

Syllabus

B.Sc- III Semester

UNIT 1: Fermat's principle: Statement & explanation, derivation of laws of reflection & Snell's law. Sign convention, refraction at a spherical surface. Abbe's sig convention (derivation), Lagrange's law & Helmholtz relation (derivation). Aplanatic points & surfaces (qualitative). 04 hrs

Problems 02 hrs

Transient currents: Theory of growth & decay of curren through RL circuit. Theory of charging & discharging of capacitor through RC circuit. Time constants of RL & RC circuits. Measurement of high resistance by leakage method.

05 hrs

Problems 02 hrs

List of experiments:

1. Calibration of spectrometer
2. Dispersive curve and dispersive power
3. Goniometer
4. Turn table
5. Total internal reflection
6. Determination of magnetic field along the axis of a co
7. Helmholtz galvanometer
8. Determination of the constants of B.G.
9. Determination of high resistance by leakage method
10. Measurement of capacity by method of mixtures
11. Measurement of capacity by absolute method.
12. R-C time constant

Syllabus

B.Sc-IV Semester

Unit -2 : Diffraction :

Fresnel class : Fresnel theory of half period zones considering plane waves, rectilinear propagation of light. Zone plate, construction . theory, expression for focal length and comparison with convex lens.

04 hrs

Problems 01 hrs

Frounhoffer class : Composition of "n" numbers of SHM's of same amplitude & period and having their phases increasing in arithmetic progression. Diffraction at a single slit & at a double slit (qualitative). Plane transmission grating & its theory. Absent spectra & dispersive power of grating. Resolving power: R.P. of prism & grating.

09 hrs

Problems 02 hrs

List of experiments:

1. Newton's rings
2. Biprism-Determination of wavelength of monochromatic light.
3. R.P. of a prism
4. R.P of telescope
5. R.P. of grating
6. Diffraction at a wire or aperture using laser
7. Polarimeter
8. Series/ Parallel Resonance (LCR Circuit)
9. Capacity by De Sauty's method (AC)
10. Determination of L & C by equal voltage method
11. Determination of dielectric constant of liquid
12. Measurement of emf of a thermocouple at various temperatures and verification of any one law of thermoelectric effect

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Syllabus

B.Sc- V Semester paper-2

Power Supplies; Power Supplies with filters (C, L, LC and π-section), Qualitative idea of Peak inverse voltage, efficiency, Ripple factor, Zener diode: characteristics and its use in voltage regulation

04hrs

Transistors : DC h-parameters and their determination, performance of transistor as an amplifier (CE mode only) and its frequency response, Brief explanation of positive and negative feedback. Transistor as an oscillator, Hartley and Phase shift oscillators (Qualitative only); FET: Types, characteristics and parameters. FET as an amplifier (CS mode, qualitative). LDR characteristics.

08 hrs

Problems 02 hrs

List of experiments: I -Set

1. Analysis of molecular spectra (Rotational spectra)
2. Study of hydrogen spectrum - determination of Rydberg constant
3. Planck's constant using Photo cell
4. Thevenin and Norton's theorems using Wheatstone's net
5. High pass filter
6. Construction of multi range voltmeter
7. Full wave bridge rectifier with π-section filter
8. Hartely Oscillator
9. Colpits Oscillator.
10. FET Amplifier
11. Photoconductive cell (LDR)

List of experiments; II Set

1. Planck's constant using Photo cell
2. Thevenin's and Norton's theorems using Wheatstone's net
3. High pass filter
4. Construction of multi range voltmeter
5. Full wave bridge rectifier with π-section filter
6. FET Amplifier
7. Photoconductive cell (LDR)

B.Sc- VI Semester

PHY 6.2: Astrophysics;-,: Astrophysics Units of stellar distances: light year and parsec; luminosities of stars, apparent and absolute magnitudes, examples; stellar spectra, H-R diagram, binary stars, stellar masses, stellar temperatures, equations of stellar structure, linear density model for stars, formation and evolution of stars (qualitative); end stages of stars – white dwarfs, neutron stars and black holes (qualitative). Different types of telescopes and their characteristics.

10 hrs

Problems 01hrs

List of experiments: I -Set

1. Analysis of x-ray diffraction spectra
2. Electrical and thermal conductivity of copper to determine Lorenz number.
3. Hall effect
4. Determination of resistivity of a semiconductor by four probe method.
5. Characteristics of GM counter.
6. GM tube (dead time).
7. Voltage Multipliers using diodes and capacitors.

Syllabus

8. V-I Characteristics of three LED's (emitting different colors).
9. Study of DTL gates.
10. Use of IC 7400 (basic gates)
11. Solar cell characteristics (a) Open circuit voltage (b) Short circuit current.

Paper-2 List of experiments: II- Set

1. Planck's constant using Photo cell
2. Thevenin and Norton's theorems using Wheatstone's net
3. High pass filter
4. Construction of multi range voltmeter
5. Full wave bridge rectifier with π-section filter
6. FET Amplifier
7. Photoconductive cell (LDR)

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R.T.E.S Arts, Science, Commerce College, Ranebennur 581115 Dist:Haveri (Karnataka)

month	class	Topics to be covered
18th June-2018	BSc semester- I	*UNIT 3: Moment of Inertia;- Derivation of Kinetic Energy of a rotating body, Definition, factors and units of M.I. and radius of gyration.* ***List of Experiments for BSc semester- I*** *1. Bar Pendulum L vs. T and L2 Vs. LT2 graphs.* *2. M.I. of the Fly-Wheel* *3. Verification of Parallel axes theorem of Moment of Inertia using Bar Pendulum.* *4. Bifilar Suspension.* *5. Y- by Uniform bending- Load depression Graph.* *6. Torsion Pendulum – Rigidity of Modulus.* *7. Co-efficient of viscosity of liquid by Stoke's method.* *8. Use of CRO – Measurement of AC voltage and frequency for sine and square waves.*
	B.Sc. Semester-III	***Transient currents:*** *Introduction about transient circuits and currents, Theory of growth & decay of current through RL circuit.* ***List of experiments for BSc semester III*** *1. Calibration of spectrometer* *2. Dispersive curve and dispersive power* *3. Goniometer* *4. Turn table* *5. Determination of magnetic field along the axis of a coil .* *6. Helmholtz galvanometer* *7. Determination of high resistance by leakage method* *8. R-C time constant*
	B.Sc. Semester-V	***Transistors:*** *introduction about transistors, construction, working. DC h-parameters and their determination,*

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		List of experiments for BSc semester V- *PAPER-1* *1. Planck's constant using Photo cell* *2. Thevenin's and Norton's theorems using Wheatstone's net* *3. High pass filter* *4. Construction of multi range voltmeter* *5. Full wave bridge rectifier with π-section filter* *6. FET Amplifier* *7. Photoconductive cell (LDR)* *PAPER-2* *1. VI-Characteristics of semiconductor diode.* *2. VI-Characteristics of Zener diode.* *3. Verification of Thevinin's and Norton's theorem (Ladder Network).* *4. Full wave rectifier with L and C filter.* *5. Full wave bridge rectifier.* *6. Zener diode as voltage regulator and comparison with IC 78xx.* *7. Transistor characteristics (CE), dc h-parameters.* *8. Construction of Multi range Voltmeter*
July-2018	BSc I semester	statements and derivations of Perpendicular and Parallel axis theorems (derivations), Derivations of M.I of rectangular lamina, Annular ring and circular disc, (derivations), M.I of Hallow and Solid Cylinders (mention of expressions),
	BSc III semester	Definition of RL time constant, its physical significance .Theory of charging & discharging of capacitor through RC circuit. Time constants of RC circuits, its physical significance. Theory, derivation and experimental Measurement of high resistance by leakage method. & Problems

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	BSc V semester	performance of transistor as an amplifier (CE mode only) with h-parameters and its frequency response, Brief explanation of positive and negative feedback, differences between positive and negative feedback . Explanation of LC tank circuit and Transistor as an oscillator, explanation, construction and working of Hartley. Principle and working of Phase shift oscillators with circuit diagram (Qualitative only);
August-2018	BSc I semester	M. I. of Flywheel (Theory and Experimental determination) & Problems UNIT 4: **Elasticity ;-** explanation of Stress, Strain, Elastic limit, state and explain Hook's law, Modulii of elasticity for isotropic materials (Young's modulus, bulk modulus, Rigidity modulus), Relation between elastic constants (Derivation), Definition of Poisson's Ratio, its maximum and minimum value, derivation of Work done for unit Volume in stretching a wire, Theory, derivation and experimental Measurement of high resistance by leakage method. & Problems
	BSc III semester	**UNIT 1: Fermat's principle:** Statement & explanation, derivation of laws of reflection & Snell's law. Sign convention for refraction through the spherical surface, derivation for refraction at a spherical surface (relation between n, u , v & R).
	BSc -V semester	FET: Types, construction, characteristics and parameters. FET as an amplifier (CS mode, qualitative). Definition, construction, working and uses of LDR characteristics & Problems **Power Supplies;** Introduction about Power Supplies with block diagram,

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September-2018	BSc I semester BSc III semester BSc VSemester-	definitions of Bending of Beams Neutral surface, Neutral axis, Plane of Bending, Bending Moment, Expression for bending moment (Derivation), uniform bending (mention formula), Theory of light cantilever (Derivation) and explanation of I-section girder (qualitative), Derivation of DerAbbe's sign convention (derivation), Derivations of Lagrange's law & Helmholtz relation (derivation). types of filters and their explanation (C, L, LC and π-section), Qualitative idea of Peak inverse voltage, efficiency, Ripple factor,
October-2018	BSc I semester;- BSc -III semester BSc -V Semester	Torsion expression for the couple per unit twist, explanation of Torsional pendulum, Experimental determination of "Y" by bending & Problems Explanation of Aplanatic points & surfaces (qualitative) & problems definition, construction, working of Zener diode: characteristics and its use in voltage regulation

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Month	Class	Topics to be covered
20th December -2018;-	B.Sc-II Semester	UNIT 2: Thermodynamics'- definition, main types of Heat engines , its efficiency : **PHY 2.2 : Physics Lab – II List of experiments:** 1. Volume Resonator 2. Frequency of AC using Sonometer 3. Velocity of sound through wire using sonometer 4. Use of CRO – study of Lissajous figures 5. Specific heat by cooling 6. Verification of Stefan's Law. 7. Determination of Stefan's constant 8. 'J' by electrical method – radiation correction by graphical method
	B.Sc-IV Semester	**Unit -2 : Diffraction :**Definition of diffraction of light with examples and types diffraction. **List of experiments:** 1. Newton's rings 2. R.P. of a prism 3. R.P of telescope 4. R.P. of grating 5. Polarimeter 6. Series/ Parallel Resonance (LCR Circuit) 7. Capacity by De Sauty's method (AC) 8. Determination of L & C by equal voltage method
	B.Sc- VI Semester	Astrophysics; - In Astrophysics Units of stellar distances: astronomical unit, light year and parsec definitions with their values;

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		List of experiments: 1. *Determination of resis*tivity of a semiconductor by four probe method. 2. Characteristics of GM counter. 3. GM tube (dead time). 4. Voltage Multipliers using diodes and capacitors. 5. Study of DTL gates. 6. Use of IC 7400 (basic gates) 7. Solar cell characteristics (a) Open circuit voltage (b) Short circuit current. **List of experiments: paper 2** 1. Planck's constant using Photo cell 2. Thevenin and Norton's theorems using Wheatstone's net 3. High pass filter 4. Construction of multi range voltmeter 5. Full wave bridge rectifier with π-section filter 6. FET Amplifier 7. Photoconductive cell (LDR)
January - 2019;-	B.Sc-II Semester B.Sc-IV Semester B.Sc-VI Semester	construction and working of Otto engine using Otto cycle, expression for efficiency Otto engine, construction and working of using Diesel cycle, expression for efficiency Diesel engine. Expression for efficiency & Carnot's theorem **Fresnel class :** Fresnel theory of half period zones considering plane waves, rectilinear propagation of light. Construction , working, Zone plate, construction . Theory, expression for focal length and comparison with convex lens And Problems . Explanation of luminosities of stars, explanation and derivation of apparent and absolute magnitudes with problems about magnitudes, examples; stellar spectra, H-R diagram,
February- 2019;-	B.Sc-II Semester	Entropy: Concept of entropy, change in entropy in reversible & irreversible processes, entropy-temperature diagram, state and explanation of second law of thermodynamics.

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	B.Sc-IV Semester	Maxwell's relations-derivation of Maxwell's relations,
	B.Sc- VI Semester	**Frounhoffer class :** Composition of "n" numbers of SHM's of same amplitude & period and having their phases increasing in arithmetic progression. Diffraction at a single slit & at a double slit (qualitative).
March - 2019	B.Sc-II Semester	binary stars, stellar masses, stellar temperatures, equations of stellar structure, linear density model for stars, formation and evolution of stars (qualitative);
	B.Sc- IV Semester	Problems about thermodynamics
	B.Sc-VI Semester	problems about Fresnel's diffraction
		Differences between refracting Telescope and reflecting Telescope. Differences between Newton's Telescope and Cassigranian Telescope.

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ARTS, SCIENCE AND COMMERCE COLLEGE, RANEBENNUR - 581 115 DIST : HAVERI

TEACHER'S WORK DIARY

Date : 18-06-2018 to 15-10-2018

CLASS AND TOPICS COVERED Dept. of Physics

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8 to 11				B.Sc - 1st Sem Prac with X	B.Sc 1st Sem Prac 4th & 5th batches with Y	B.Sc 1st Sem Prac 6th & 7th batches with X
11 to 12				2nd & 3rd batches		
12.15 to 1-15	B.Sc V Th Sem		B.Sc 1st Sem		B.Sc 3rd Sem	
1-15 to 2-15						
2-15 to 3-15		B.Sc - 5th Sem Practical 3rd & 4th batches with X		B.Sc - 5th Sem Prac 1st & 2nd batches with Y		
3-15 to 5-15						

Signature of the Teacher

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HOD OF PHYSICS
Head of the Department
R.T.E.S. Degree College
RANEBENNUR-581 115

R.T.E. SOCIETY'S

ARTS, SCIENCE AND COMMERCE COLLEGE, RANEBENNUR - 581 115 DIST : HAVERI

TEACHER'S WORK DIARY

Date : 20 - 12 - 2018 to 07 - 04 - 2019

CLASS AND TOPICS COVERED

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8 to 11				Bsc-2nd sem Prac	Bsc-2nd sem Prac	Bsc-2nd sem Prac
11 to 12				2nd & 3rd batches with X	4 & 5 batches with Y	6 & 7 batches with X
12-15 to 1-15	Bsc 6th Sem		Bsc 2nd Sem		Bsc 4th Sem	
1-15 to 2-15		Bsc 6th sem Prac 3rd & 4th batches with X				
2-15 to 3-15				Bsc-6th Sem Prac 1 & 2 batches with Y		
3-15 to 5-15						

Signature of the Teacher

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Head of the Department
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BSC-1 SEMESTER

UNIT 3: Moment of Inertia ;- Kinetic Energy of a rotating body, Definition of M.I. and radius of gyration, Perpendicular and Parallel axis theorems (derivations), M.I of rectangular lamina, Annular ring and circular disc, (derivations), Hallow and Solid Cylinders (mention of expressions), M. I. of Flywheel (Theory and Experimental determination). 07 Hrs

Problems 02 hrs

UNIT 4: Elasticity ;-Stress, Strain, Elastic limit, Hook's law, Modulii of elasticity for isotropic materials, Relation between elastic constants (Derivation), Definition of Poisson's Ratio, Work done for unit Volume in stretching a wire, Bending of Beams Neutral surface, Neutral axis, Plane of Bending, Bending Moment, Expression for bending moment (Derivation), uniform bending (mention formula), Theory of light cantilever (Derivation) and I-section girder (qualitative), Torsion expression for the couple per unit twist, Torsional pendulum, Experimental determination of "Y" by bending.

07 Hrs

Problems 02 Hrs

Syllabus

List of Experiments:

1. Bar Pendulum L vs. T and L2 Vs. LT2 graphs.
2. M.I. of the Fly-Wheel
3. Verification of Parallel axes theorem of Moment of Inertia using Bar Pendulum.
4. Verification of Perpendicular axes theorem of Moment of Inertia using Tortional Pendulum.
5. Bifilar Suspension.
6. Young's Modulus of the material of a wire using Searls' Apparatus.
7. Y- by Uniform bending- Load depression Graph.
8. Torsion Pendulum – Rigidity of Modulus.
9. Co-efficient of viscosity of liquid by Stoke's method.
10. Surface Tension by Jeager's Method / Quincke's method.
11. Radius of Capillary tube by mercury pellet method.
12. Use of CRO – Measurement of AC voltage and frequency for sine and square waves.
13. Use of multimeter (demonstration)

R.T.E.S. Arts, Science, Commerce College, Ranebennur 581115 Dist:Haveri (Karnataka)

Syllabus

B.Sc-II Semester

UNIT 2: Thermodynamics Heat engines: Otto engine, Otto cycle, expression for efficiency, Diesel engine, Diesel cycle, expression for efficiency & Carnot's theorem Entropy: Concept of entropy, change in entropy in reversible & irreversible processes, entropy-temperature diagram, second law of thermodynamics. Maxwell's relations-derivation of Maxwell's relations, applications to – 1) ClausiusClapeyron's equation, 2) Clausius equations (specific heat of saturated vapours) 10 hrs

Problems 02 hrs

PHY 2.2 : Physics Lab – II List of experiments:

1. Volume Resonator
2. Frequency of AC using Sonometer
3. Velocity of sound through wire using sonometer
4. Use of CRO – study of Lissajous figures
5. Lee's method of determination of thermal conductivity of rubber
6. Thermal conductivity of poor conductor (perspex)
7. Y- by Uniform bending- Load depression Graph.
8. Torsion Pendulum – Rigidity of Modulus.
9. Co-efficient of viscosity of liquid by Stoke's method.
10. Surface Tension by Jeager's Method / Quincke's method.
11. Radius of Capillary tube by mercury pellet method.
12. Use of CRO – Measurement of AC voltage and frequency for sine and square waves.
13. Use of multimeter (demonstration)

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R.T.E.S.Society,s Arts, Science & Commerce Degree College, RANEBENNUR

Syllabus

B.Sc- III Semester

UNIT 1: Fermat's principle: Statement & explanation, derivation of laws of reflection & Snell's law. Sign convention, refraction at a spherical surface. Abbe's sign convention (derivation), Lagrange's law & Helmholtz relation (derivation). Aplanatic points & surfaces (qualitative). 04 hrs

Problems 02 hrs

Transient currents: Theory of growth & decay of current through RL circuit. Theory of charging & discharging of capacitor through RC circuit. Time constants of RL & RC circuits. Measurement of high resistance by leakage method.

05 hrs

Problems 02 hrs

List of experiments:

1. Calibration of spectrometer
2. Dispersive curve and dispersive power
3. Goniometer
4. Turn table
5. Total internal reflection
6. Determination of magnetic field along the axis of a coil
7. Helmholtz galvanometer
8. Determination of the constants of B.G.
9. Determination of high resistance by leakage method
10. Measurement of capacity by method of mixtures
11. Measurement of capacity by absolute method.
12. RC time constant

Syllabus

B.Sc-IV Semester

Unit -2 : Diffraction :

Fresnel class : Fresnel theory of half period zones considering plane waves, rectilinear propagation of light. Zone plate, construction . theory, expression for focal length and comparison with convex lens.

04 hrs

Problems 01 hrs

Frounhoffer class : Composition of "n" numbers of SHM's of same amplitude & period and having their phases increasing in arithmetic progression. Diffraction at a single slit & at a double slit (qualitative). Plane transmission grating & its theory. Absent spectra & dispersive power of grating. Resolving power: R.P. of prism & grating.

09 hrs

Problems 02 hrs

List of experiments:

1. Newton's rings
2. Biprism-Determination of wavelength of monochromatic light.
3. R.P. of a prism
4. R.P of telescope
5. R.P. of grating
6. Diffraction at a wire or aperture using laser
7. Polarimeter
8. Series/ Parallel Resonance (LCR Circuit)
9. Capacity by De Sauty's method (AC)
10. Determination of L & C by equal voltage method
11. Determination of dielectric constant of liquid
12. Measurement of emf of a thermocouple at various temperatures and verification of any one law of thermoelectric effect

Syllabus

B.Sc- V Semester paper-2

Power Supplies; Power Supplies with filters (C, L, LC and π-section), Qualitative idea of Peak inverse voltage, efficiency, Ripple factor, Zener diode: characteristics and its use in voltage regulation

04hrs

Transistors : DC h-parameters and their determination, performance of transistor as an amplifier (CE mode only) and its frequency response, Brief explanation of positive and negative feedback. Transistor as an oscillator, Hartley and Phase shift oscillators (Qualitative only); FET: Types, characteristics and parameters. FET as an amplifier (CS mode, qualitative). LDR characteristics.

08 hrs

Problems 02 hrs

List of experiments: I -Set

1. Analysis of molecular spectra (Rotational spectra)
2. Study of hydrogen spectrum - determination of Rydberg constant
3. Planck's constant using Photo cell
4. Thevenin and Norton's theorems using Wheatstone's net
5. High pass filter
6. Construction of multi range voltmeter
7. Full wave bridge rectifier with π-section filter
8. Hartely Oscillator
9. Colpits Oscillator.
10. FET Amplifier
11. Photoconductive cell (LDR)

Syllabus

List of experiments; II Set

1. Planck's constant using Photo cell
2. Thevenin's and Norton's theorems using Wheatstone's net
3. High pass filter
4. Construction of multi range voltmeter
5. Full wave bridge rectifier with π-section filter
6. FET Amplifier
7. Photoconductive cell (LDR)

B.Sc- VI Semester

PHY 6.2: Astrophysics;-,: Astrophysics Units of stellar distances: light year and parsec; luminosities of stars, apparent and absolute magnitudes, examples; stellar spectra, H-R diagram, binary stars, stellar masses, stellar temperatures, equations of stellar structure, linear density model for stars, formation and evolution of stars (qualitative); end stages of stars – white dwarfs, neutron stars and black holes (qualitative). Different types of telescopes and their characteristics.

10 hrs

Problems 01hrs

List of experiments: I -Set

1. Analysis of x-ray diffraction spectra
2. Electrical and thermal conductivity of copper to determine Lorenz number.
3. Hall effect
4. Determination of resistivity of a semiconductor by four probe method.
5. Characteristics of GM counter.
6. GM tube (dead time).
7. Voltage Multipliers using diodes and capacitors.

Syllabus

8. V-I Characteristics of three LED's (emitting different colors).
9. Study of DTL gates.
10. Use of IC 7400 (basic gates)
11. Solar cell characteristics (a) Open circuit voltage (b) Short circuit current.

Paper-2 List of experiments: II- Set

1. Planck's constant using Photo cell
2. Thevenin and Norton's theorems using Wheatstone's net
3. High pass filter
4. Construction of multi range voltmeter
5. Full wave bridge rectifier with π-section filter
6. FET Amplifier
7. Photoconductive cell (LDR)

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month	class	Topics to be covered
18th June-2018	BSc semester- I	***UNIT 3: Moment of Inertia;-*** *Derivation of Kinetic Energy of a rotating body, Definition, factors and units of M.I. and radius of gyration.* ***List of Experiments for BSc semester- I*** *1. Bar Pendulum L vs. T and L2 Vs. LT2 graphs.* *2. M.I. of the Fly-Wheel* *3. Verification of Parallel axes theorem of Moment of Inertia using Bar Pendulum.* *4. Bifilar Suspension.* *5. Y- by Uniform bending- Load depression Graph.* *6. Torsion Pendulum – Rigidity of Modulus.* *7. Co-efficient of viscosity of liquid by Stoke's method.* *8. Use of CRO – Measurement of AC voltage and frequency for sine and square waves.*
	B.Sc. Semester-III	***Transient currents:*** *Introduction about transient circuits and currents, Theory of growth & decay of current through RL circuit.* ***List of experiments for BSc semester III*** *1. Calibration of spectrometer* *2. Dispersive curve and dispersive power* *3. Goniometer* *4. Turn table* *5. Determination of magnetic field along the axis of a coil .* *6. Helmholtz galvanometer* *7. Determination of high resistance by leakage method* *8. R-C time constant*
	B.Sc. Semester-V	***Transistors:*** *introduction about transistors, construction, working. DC h-parameters and their determination,*

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		List of experiments for BSc semester V- ***PAPER-1*** *1. Planck's constant using Photo cell* *2. Thevenin's and Norton's theorems using Wheatstone's net* *3. High pass filter* *4. Construction of multi range voltmeter* *5. Full wave bridge rectifier with π-section filter* *6. FET Amplifier* *7. Photoconductive cell (LDR)* ***PAPER-2*** *1. VI-Characteristics of semiconductor diode.* *2. VI-Characteristics of Zener diode.* *3. Verification of Thevinin's and Norton's theorem (Ladder Network).* *4. Full wave rectifier with L and C filter.* *5. Full wave bridge rectifier.* *6. Zener diode as voltage regulator and comparison with IC 78xx.* *7. Transistor characteristics (CE), dc h-parameters.* *8. Construction of Multi range Voltmeter*
July-2018	BSc I semester	statements and derivations of Perpendicular and Parallel axis theorems (derivations), Derivations of M.I of rectangular lamina, Annular ring and circular disc, (derivations), M.I of Hallow and Solid Cylinders (mention of expressions),
	BSc III semester	Definition of RL time constant, its physical significance .Theory of charging & discharging of capacitor through RC circuit. Time constants of RC circuits, its physical significance. Theory, derivation and experimental Measurement of high resistance by leakage method. & Problems

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	BSc V semester	performance of transistor as an amplifier (CE mode only) with h-parameters and its frequency response, Brief explanation of positive and negative feedback, differences between positive and negative feedback . Explanation of LC tank circuit and Transistor as an oscillator, explanation, construction and working of Hartley. Principle and working of Phase shift oscillators with circuit diagram (Qualitative only);
August-2018	BSc I semester	M. I. of Flywheel (Theory and Experimental determination) & Problems UNIT 4: **Elasticity ;-** explanation of Stress, Strain, Elastic limit, state and explain Hook's law, Modulii of elasticity for isotropic materials (Young's modulus, bulk modulus, Rigidity modulus), Relation between elastic constants (Derivation), Definition of Poisson's Ratio, its maximum and minimum value, derivation of Work done for unit Volume in stretching a wire, Theory, derivation and experimental Measurement of high resistance by leakage method. & Problems
	BSc III semester	**UNIT 1: Fermat's principle:** Statement & explanation, derivation of laws of reflection & Snell's law. Sign convention for refraction through the spherical surface, derivation for refraction at a spherical surface (relation between n, u , v & R).
	BSc -V semester	FET: Types, construction, characteristics and parameters. FET as an amplifier (CS mode, qualitative). Definition, construction, working and uses of LDR characteristics & Problems **Power Supplies;** Introduction about Power Supplies with block diagram,

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September-2018	BSc I semester BSc III semester BSc VSemester-	definitions of Bending of Beams Neutral surface, Neutral axis, Plane of Bending, Bending Moment, Expression for bending moment (Derivation), uniform bending (mention formula), Theory of light cantilever (Derivation) and explanation of I-section girder (qualitative), Derivation of DerAbbe's sign convention (derivation), Derivations of Lagrange's law & Helmholtz relation (derivation). types of filters and their explanation (C, L, LC and π-section), Qualitative idea of Peak inverse voltage, efficiency, Ripple factor,
October-2018	BSc I semester;- BSc -III semester BSc -V Semester	Torsion expression for the couple per unit twist, explanation of Torsional pendulum, Experimental determination of "Y" by bending & Problems Explanation of Aplanatic points & surfaces (qualitative) & problems definition, construction, working of Zener diode: characteristics and its use in voltage regulation

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Month	Class	Topics to be covered
20th December -2018;-	B.Sc-II Semester	**UNIT 2: Thermodynamics'**- definition, main types of Heat engines , its efficiency : **PHY 2.2 : Physics Lab – II List of experiments:** 1. Volume Resonator 2. Frequency of AC using Sonometer 3. Velocity of sound through wire using sonometer 4. Use of CRO – study of Lissajous figures 5. Specific heat by cooling 6. Verification of Stefan's Law. 7. Determination of Stefan's constant 8. 'J' by electrical method – radiation correction by graphical method
	B.Sc-IV Semester	**Unit -2 : Diffraction :**Definition of diffraction of light with examples and types diffraction. **List of experiments:** 1. Newton's rings 2. R.P. of a prism 3. R.P of telescope 4. R.P. of grating 5. Polarimeter 6. Series/ Parallel Resonance (LCR Circuit) 7. Capacity by De Sauty's method (AC) 8. Determination of L & C by equal voltage method
	B.Sc- VI Semester	**Astrophysics; -** In Astrophysics Units of stellar distances: astronomical unit, light year and parsec definitions with their values;

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		List of experiments: 1. *Determination of resis*tivity of a semiconductor by four probe method. 2. Characteristics of GM counter. 3. GM tube (dead time). 4. Voltage Multipliers using diodes and capacitors. 5. Study of DTL gates. 6. Use of IC 7400 (basic gates) 7. Solar cell characteristics (a) Open circuit voltage (b) Short circuit current. **List of experiments: paper 2** 1. Planck's constant using Photo cell 2. Thevenin and Norton's theorems using Wheatstone's net 3. High pass filter 4. Construction of multi range voltmeter 5. Full wave bridge rectifier with π-section filter 6. FET Amplifier 7. Photoconductive cell (LDR)
January - 2019;-	B.Sc-II Semester B.Sc-IV Semester B.Sc-VI Semester	construction and working of Otto engine using Otto cycle, expression for efficiency Otto engine, construction and working of using Diesel cycle, expression for efficiency Diesel engine. Expression for efficiency & Carnot's theorem **Fresnel class :** Fresnel theory of half period zones considering plane waves, rectilinear propagation of light. Construction , working, Zone plate, construction . Theory, expression for focal length and comparison with convex lens And Problems . Explanation of luminosities of stars, explanation and derivation of apparent and absolute magnitudes with problems about magnitudes, examples; stellar spectra, H-R diagram,
February - 2019	B.Sc-II Semester	Entropy: Concept of entropy, change in entropy in reversible & irreversible processes, entropy-temperature diagram, statement and explanation of second law of thermodynamics.

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		Maxwell's relations-derivation of Maxwell's relations,
	B.Sc-IV Semester	**Frounhoffer class :** Composition of "n" numbers of SHM's of same amplitude & period and having their phases increasing in arithmetic progression. Diffraction at a single slit & at a double slit (qualitative).
	B.Sc- VI Semester	binary stars, stellar masses, stellar temperatures, equations of stellar structure, linear density model for stars, formation and evolution of stars (qualitative);
March - 2019	B.Sc-II Semester	Problems about thermodynamics
	B.Sc- IV Semester	problems about Fresnel's diffraction
	B.Sc-VI Semester	Differences between refracting Telescope and reflecting Telescope. Differences between Newton's Telescope and Cassigranian Telescope.

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Dept. of Economics.

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TIME TABLE

FOR THE YEAR 2019 - 2020

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8 to 9				B. Com I.		
9 to 10						
10 to 11	B.A. V th P-I.	B.A. V th. P-I.			B.A. III	B.A V-I Paper-I.
11 to 12	B.A. I.	B.A. I.	B.A.I.			
			REST			
12-15 to 1-15		B.A-III	B.A.III	B.A.I.	-	B.A. III
1-15 to 2-15					B.A. III	B.A. I.
2-15 to 3-15					B.A. V Paper I	B.A. V - Paper-I.

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ಪ್ರಾಚಾರ್ಯರು
ರಾ.ಶಿ.ಕ.ವಿ. ಸಂಸ್ಥೆಯ ಕಲಾ, ವಿಜ್ಞಾನ ಹಾಗೂ ವಾಣಿಜ್ಯ
ಪದವಿ ಮಹಾವಿದ್ಯಾಲಯ, ರಾಣೇಬೆನ್ನೂರು

Micro Economics.

Syllabus

B.A. Economics: First semester.

Unit-1: Theory consumer's Behaviour

nature and scope of Economics: Demand - meaning. Determinants and Law of Demand. Elasticity of Demand, Types and measurements. supply meaning. Determinants and Law of supply. Elasticity of supply, price Determination. Theory of consumer Behaviour cardinal Utility Approach. ordinal utility Approach - Theory of Indifference curve and Its properties, consumer's Equilibrium - Price consumption curve and Income consumption curve. Price Effect, Income Effect, and substitution Effect Inferior Goods and

Syllabus

Giffen Goods Derivation of Demand curve.

Unit-II: Production. costs and Revenue.

Production Function - short run and Long-run: Law of variable proportions, Returns to scale characteristics of Isoquants and Isocost line least cost combination of factors. cost Function - Different concepts of costs. short-run and Long run cost Analysis: Economics and Diseconomics of scale, concepts of Total, Average and marginal Revenue. Break-Even analysis.

Unit-III: Market structure and product Pricing

Perfect competition - Equilibrium of the Firm and Industry. Monopoly. Equilibrium of the firm. Price discrimination. monopolistic competition - meaning and characteristics short run and Long run Equilibrium of the firm and Group Equilibrium. Excess capacity oligopoly - Features Types of

Unit IVth: Factor Pricing and Distribution: Marginal Productivity Theory of Distribution. Ricardian and modern Theories of Rent. ~~Marginal Productivity Theory of Distribution~~. Quasi-rent: Wage Determination: Theories of profit - Dynamic Theory, Risk and Uncertainty Theory and Schumpeterian Theory of profit.

Unit V: General Equilibrium and welfare Economics: Partial and General Equilibrium: meaning measurement of welfare Pareto's Welfare criteria: concept of social welfare Function.

B.A. Economics IInd Semester

MACRO ECONOMICS:

Unit-Ist Introduction to macro Economics. meaning, scope and Importance of macro Economics, National Income Accounting: concepts of National Income GDP, GNP, GNP, NNP National Income at factor cost PI, DI, PCI (Illustrate with numerical examples): methods and Difficulties in measuring National Income: circular Flow of Income.

Unit-II: Classical Theory of Employment.

Classical Theory of Employment. Assumptions and Full-Employment - Equilibrium; Say's Law of Market. wage - Price - Flexibility.

Unit-III: Keynesian Economics.

Keynesian Theory of Employment-concept of Effective Demand and its Determinants Keynes Psychological law of consumption. Consumption Function - Average propensity to consume & marginal propensity to consume and Factors Determining consumption Function: Saving Function -

B.A. III rd semester. Monetary Economics

Syllabus

Unit-I: Money. Syllabus

Money - meaning Functions - Supply of money - M1, M2, M3, M4. Metallic standard - meaning of mono-metallism & Bimetallism - Paper standard. - merits & Demerits.

Unit-II: value of money: meaning & construction of index numbers. simple & weighted Index Numbers. Theories of value of money - Cash Transactions Approach & cash Balances Approach.

Unit-III: Inflation & Deflation: Inflation meaning - Types - causes - effects - control of Deflation. meaning of Inflationary Gap. Deflationary Gap.

Unit-IV: Money & money Market: components of money Market, commercial Banking Functions, Balance sheet of Commercial Bank, Liquidity Vs profitability, credit creation.

Average propensity to save and marginal propensity to save Determinants of savings Investment function - Marginal Efficiency of capital and Factors Influencing the MEC (Illustrate with numerical examples)

Unit-IV: Theory of multiplier and Accelerator: multiplier - meaning, working and Limitation. Accelerator - meaning working and limitation (Illustrate with numerical examples)

Unit-V: Business Cycles and Inflation.

Business cycles - meaning. Features Phases and control of Business cycles: Theories of Business cycles Inflation and Deflation - meaning, Type, ~~cau~~ causes. Effects, calculation of inflation and control of Inflation.

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Syllabus

Unit: V : Central Bank - meaning Functions - methods of credit control - Qualitative & Quantitative controls, objectives of monetary policy Role of central Bank in Economic Development.

B.A. IV:

International Economics:

Unit - Ist: Nature and Importance of International Trade. - Domestic and Foreign Trade - Theories of Inter. Internation Trade. comparative cost Theory, modern Theory of International Trade. Terms of Trade

Unit - II: Free Trade Vs protection guments for and agai[illegible] rade and protection -

Syllabus

methods of trade barriers - Tariffs Quotas. etc.

Unit - III: Balance of Trade and Balance of Payments - meaning causes for Disequilibrium in the balance of payment - methods of correcting disequilibrium in the balance of payment.

Unit - IV: meaning - Rate of Exchange Fixed and Flexible Exchange Rates - Purchasing power parity Theory. Exchange control. meaning, objectives and methods of exchange control.

Unit: V: International Economic organizations - IMF. IBRD and W.T.O. objectives functions and performance.

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B.A-V : Macro Economics Paper III

Syllabus

Module:I ; Introduction to macro Economics : Macro Economics meaning Uses & limitations. National Income Definitions. Methods of Estimations concepts of national Income. G.N.P. NNP. NI. DI. DPI. & DPI. Difficulties in the calculation of National Income.

Module-II : Theory of Employment Say's Law of market. Pigou's modifications.

Module: III : Keynesian Economics. Keynesian Theory of Employment. Effective Demand & Its Developments Determination - consumption Functi... Average & Marginal propensity to consume..

Syllabus

Factors Affecting Consumption Function: Investment Function. marginal Efficiency of capital liquidity preference Theory of Interest Theroy of multiplier.

module: IV : Accelation principle. meaning. working - limitations - Interaction of multiplier & Accelerator.

Module(V) : Trade cycles. meaning Features phases of Trade cycles. Theories of Trade cycles. Haw tray. keynes. & schumpeter's Theories of Trade Cycles. Control of trade cycles.

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B.A. VI th. sem Paper I st :

Syllabus

module. 1: Introduction to Public Economics. Nature and scope of public Finance. Distinction between public finance and private finance - principle of maximum social advantage.

module: II : Public Revenue:

Sources of public revenue taxation - canons of taxation characteristics of good tax system. Impact, Incidence and shifting of tax Types of Taxation progressive Regressive proportional - Direct and Indirect taxes - merits and Effects of tax production and distribution taxable capacity, meaning and determin

module: III

Syllabus

Public Expenditure: meaning and types - principle of public Expendi causes for increase in public Expenditure. - Effects of public expenditure on production and distribution.

module IV: Public debt. meaning purpose and types of public debt. burden of public debt. methods of repayment of public dept.

Module V: Budgeting. meaning and components of budget - Revenue deficit and Fiscal deficit. Fiscal policy meaning and objectives - deficit financing.

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Conspectus of Studies

Month	Class	Topics to be covered
July	B.A.I Sem	Module-I: Theory consumer's Behaviour: Nature and scope of Economics: Demand - meaning. Determinants and Law of Demand: Elasticity of Demand - Types and measurements: supply - meaning Determinants and law of supply. Elasticity of supply. Price Determination. Theory of consumer Behaviour cardinal utility Approach. ordinal utility Approach - Theory of Indifference curve and Its properties, consumer Equilibrium. Price consumption curve and Income consumption curve. Price Effect. Income Effect and substitution Effect. Superior Goods and Giffen Goods Derivation of Demand curve.
August	B.A.I Sem	Module: II: Production, Costs & Revenue
August	B.A.I	Production Function-short-run and Long-run. Law of variable Proportions. Returns to scale characteristics of Isoquants and Iso cost line least cost combination of factors, cost Function-Different concepts of costs, short-run and Long run cost Analysis. Economics and Diseconomies of scale. concepts of Total. Average and marginal Revenue: Break-Even analysis.
Sept	B.A.I	Module-III: Market structure and Product Pricing: Perfect competition - Equilibrium of the firm and Industry; monopoly - Equilibrium of the firm. Price discrimination. monopolistic competition - meaning and characteristics. short run & Long-run Equilibrium of the firm and group Equilibrium Excess capacity. Oligopoly - Features and Types of Oligopoly.

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Conspectus of Studies

Month	Class	Topics to be covered
Oct:	B.A.I st	module : IV th Factor pricing and Distribution.: Marginal Productivity Theory of Distribution. Ricardian and modern Theories of Rent Quasi-rent, wage Determination Theories of profit. Dynamic Theory. Risk and Uncertainty Theory and schumpeterian Theory of Profit. module : V th.; General Equilibrium and welfare Economics : Partial and General Equilibrium: Meaning and Measurement of welfare ; Pareto's welfare criteria: concept of social Welfare Function.
July	B.A. III rd	Module I st : Money : Meaning Function - supply of money M1, M2, M3, M4, metalic standard meaning of mono - metallic standard. - meaning of mono metallism & Bi metallism - Paper standard - merits & Demerits.
August.	B.A. III.	Module II : Value of money meaning & construction of index Numbers simple and weighted Index Numbers - Theories of value of money - Cash Transactions Approach & Cash Balances Approach. module III : Inflation & Deflation. Inflation - meaning - Types. Causes - Effects - control of Inflation.

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R.T.E.S.

Conspectus of Studies

Month	Class	Topics to be covered
Sept	B.A.III.	Deflation: meaning - Types - causes - Effects - control of Deflation. meaning of Inflationary Gap. Deflationary Gap. Module-IV: money and money market: components of money market. commercial Banking Functions. Balancesheet of commercial Bank. Liquidity Vs Profitability. credit creation.
Oct	B.A.III	Module V: Central Bank: meaning - Functions - methods of credit control Qualitative and Quantitative controls objectives of monetary policy. Role of central Bank in Economic Development.

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Month	Class	Topics to be covered
July	B.A.V^th.	Module I: Introduction to macro Economics: macro-Economics-meaning uses & Limitation. National Income Definitions methods of Estimations concepts of National Income. GNP. NNP. NI. DI. DPI. & Difficulties in the calculation of National Income.
August	B.A.V^th	Module II: Theory of Employment Say's law of market. Pigoou's modifications. module III: keynesian ~~Econom~~ Economics. keynesian Theory of Employment. Effective Demand & Its Determination. consumption Function Average & marginal propensity to consume.
Sept	B.A.V^th	Module III: Factors Affecting consumption Function. Investment Function. Marginal Efficiency of capital - Liquidity.

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Conspectus of Studies

Month	Class	Topics to be covered
Oct.	B.A.V	Preference Theory of Interest Theory of multiplier. Module: IV th: Acceleration Principle: meaning - working - limitations - Interaction of multiplier & Accelerator. Module V: Trade cycles: meaning Features - Phases of Trade cycles. Theories of Trade cycles. Haw tray, keynes & schumpeter's Theories of Trade cycles control of Trade cycles.

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Month	Class	Topics to be covered
Jan.	B.A.III th	module: I: Nature and Importance of International Trade - Domestic and Foreign Trade. - Theories of International Trade. comparative cost Theory. modern Theory of International trade - Terms of Trade.
Feb:	B.A.IV	module-II Free Trade vs protection - Arguments for and against Free Trade and protection methods of trade barriers - Tariffs, Quotes etc.
march	B.A.IV	module III: public Expenditure meaning and Types principles of public expenditure

B.A. VI th sem.

Conspectus of Studies

Month	Class	Topics to be covered
		causes for increase in public expenditure - Effects of public Expenditure on production and distribution.
Apr	B.A.IV	Exchange control: meaning objectives and methods of exchange control.
		module-V: International Economics organizations IMF. IBRD. and WTO. objectives functions and performance.

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Month	Class	Topics to be covered
Jan	B.A.VI	module-I: Introduction to public Economics. nature and scope of public Finance. Distinction between public finance and private finance - principle finance and private finance - principle of maximum social advantage
Feb	B.A.VI	Public Revenue: sources of public revenue - Taxation - canhons of taxation - ~~cha~~ characteristics of good tax system - Impact. Incidence and shifting of tax - Types of Taxation progressive Regressive proportional Direct and Indirect taxes.

Conspectus of Studies

Month	Class	Topics to be covered
		merits and Effects of tax on production and distribution Taxable capacity meaning and determinants
Mar	B.A.VI	Public Expenditure: meaning and Types - Principles of public Expenditure - causes for increase in public Expenditure - Effects of public Expenditure on production and distribution.
Apr.	B.A.VI	public debt. meaning: purpose and types of public ~~debt~~ debt. burden of public debt.

Month	Class	Topics to be covered
		methods of repayment of public debt.
Apr	B.A.VI	module(v): Budgeting meaning and components of budget. Revenue deficit and Fiscal dificit - Fiscal Policy meaning and objectives - deficit Financing.

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