

பருவம்: முதற் பருவம்

பாடக் குறியீட்டு எண்: LT101T

அலகு

பாடங்கள்

1. அலகு – 1 (மரபு கவிதைகள்)

- 1.1 வள்ளலார்
- 1.2 பாரதியார்
- 1.3 பாரதிதாசன்
- 1.4 கவிமணி
- 1.5 கண்ணதாசன்

2. அலகு – 2 (புதுக்கவிதைகள்)

- 2.1 அப்துல் ரகுமான்
- 2.2 மு. மேத்தா
- 2.3 வைரமுத்து
- 2.4 தமிழ்ச்சி
- 2.5 நாட்டுப்புறப்பாடல்கள்

3. அலகு – 3 (இலக்கிய வரலாறு)

- 3.1 இருபதாம் நூற்றாண்டுக் கவிஞர்கள்
- 3.2 புதுக்கவிதையின் தோற்றமும், வளர்ச்சியும்
- 3.3 சிறுகதையின் தோற்றமும், வளர்ச்சியும்
- 3.4 நாட்டுப்புற இலக்கியங்கள்

4. அலகு- 4 (சிறுகதைகள்) கதவு – கி.ரா

- 4.1 கதவு
- 4.2 குடும்பத்தில் ஒரு நபர்
- 4.3 ஜெயில்
- 4.4 மின்னல்
- 4.5 எழுத மறந்த கதை

5. அலகு – 5 (மொழித் திறன்)

- 5.1 வல்லொற்று மிகுமிடம்
- 5.2 வல்லொற்று மிகாமிடம்

SEMESTER – I ENGLISH THROUGH LITERATURE – I LE101S

UNIT - 1 [15 HRS]**RELATIONSHIPS**

Freedom at Midnight – Larry Collins and Dominique Lapierre (Prose)
Night of the Scorpion – Nissim Ezekiel (Poem)
Driving Miss Daisy – Alfred Ubry (Play)

UNIT-2 [15 HRS]**SELF ENHANCEMENT**

Ulysses – Alfred Lord Tennyson (Poem)
Our Urgent Need for Self-esteem – Nathaniel Brandon (Prose)
Emotional Intelligence – Daniel Goleman (Prose)

UNIT - 3 [15 HRS]**BASIC GRAMMAR**

The Sentence

Parts of Speech

Nouns – Classes and Gender

Nouns – Number and Case

Adjectives

Comparison of Adjectives

UNIT- 4 [15 HRS]
BASIC LANGUAGE SKILLS

Dialogue Writing

Letter writing – [Formal, Informal]

Comprehension

Text

1. Elango, K. **Insights : A Course in English Literature and Language**. Hyderabad: Orient Black swan Private Limited, 2009.
2. Bhatnagar, R.P., and Bhargava, Rajul. **English for Competitive Examinations**. Chennai: Macmillan India Press, 2002.
3. David Green, **Contemporary English Grammar: Structures and Composition**. Chennai: Macmillan India Limited, 2004.

Reference

1. Prince, Donna. **Skills for Success**, New York: CUP 1998.
2. Wallace, Michael, J. **Study Skills in English**. Kottayam: CUP, 2004.

SEMESTER – I ORGANIC CHEMISTRY – I CH101T

Objectives:

- To understand the basic properties of organic compounds
- To know the method of naming organic compounds
- To learn various methods of preparation of hydrocarbons
- To understand the mechanism of reactions of hydrocarbons
- To understand the stereochemistry of aliphatic Hydrocarbons

Unit -I BASIC CONCEPTS.**12hrs.**

- 1.1 IUPAC nomenclature of organic compounds- naming of simple organic Molecules , practicing line formula for organic molecules
- 1.2 Geometry of molecules – Hybridisation sp^3 , sp^2 , sp with examples.
- 1.3 Cleavage of Bonds – Homolytic and heterolytic cleavage.
- 1.4 Bond energy, Bond length and Bond angle.
- 1.5 Electron displacement effects – inductive, inductomeric, electromeric, resonance, hyperconjugation and steric effects.
- 1.6 Reactive Intermediates: Carbocations, Carbanions, Carbenes and free radicals.

Unit - II : ALKANES&CYCLOALKANES**12 hrs.**

- 2.1 Alkanes – methods of preparation: Wurtz reaction, hydrogenation of alkenes, hydrolysis of Grignard reagents, Kolbe's method. Physical and Chemical properties of alkanes.
- 2.2 Cycloalkanes – Preparation using Wurtz's reaction – Dieckmann's ring closure and reduction of aromatic hydrocarbons.
- 2.3 Substitution and ring opening reactions of cycloalkanes.
- 2.4 Bayer's strain theory and theory of strain less rings.

Unit-III ALKENES**12hrs.**

- 3.1 Alkene Nomenclature - structure and bonding - Isomerism in Alkenes - properties - stability.
- 3.2 Preparation of Alkenes – Elimination reactions: Dehydration of Alcohols, Dehydrohalogenation of Alkyl halides. E1 and E2 mechanism. Hofmann and Saytzeff's rules – Problems related to these mechanism.
- 3.3 Addition reactions of Alkenes: Hydrogenation, Halogenation, Hydrohalogenation - mechanisms – Markovnikov's rule and Anti Markovnikov's rule. Mechanism of Hydration , Hydroboration, Ozonolysis, Hydroxylation with $KMnO_4$. Self-addition. Polymerization of Ethylene and Propylene problems.

UNIT - 4 - ALKYNES AND DIENES**12 hrs**

- 4.1 Alkynes - Sources of Alkynes - Nomenclature - acidity of alkynes - addition reactions - hydrogenation, Hydrohalogenation, Hydration with HgSO_4
- 4.2 Preparation of Alkynes by elimination reactions , Ozonolysis of alkynes Alkylation of alkynes using acetylides.
- 4.3 Dienes - preparation of dienes, classes of dienes - conjugated, isolated and cumulative - stability of dienes - addition of hydrogen halides & halogens to conjugated dienes - Polymerization of dienes- Diels-Alder reaction - Problems
- 4.4 Allenes - preparation and structure.

UNIT - V :STEREOCHEMISTRY - I**12hrs**

- 1.1 Conformational isomerism: Conformers, Dihedral angle, torsional strain.
- 1.2 Conformational analysis of ethane and n-butane,
- 1.3 Geometrical isomerism: Cis - trans, syn-anti and E-Z notations, Methods of distinguishing geometrical isomers using melting point, dipole moment, dehydration, cyclization and heat of hydrogenation.

Text Books:

1. Francis A.Carey, - Organic Chemistry- Tata McGraw Hill-1999.
2. Seyhan Ege- Organic Chemistry-A.I.T.B.S Publishers-1999.

Reference Books:

1. Ahluwalia and Parassar- Organic Reaction mechanisms, Narosa Publishers.2004.
2. Bahl & Arun Bahl- Advanced Organic Chemistry, Sultan Chand-1996.
3. Paula Yurkanis Bruice - Organic Chemistry, Prentice Hall- 1999.
4. E.L. Eliel and S.H.Wilers , Stereochemistry of Organic Compounds , John Wiley and sons , 2004.

P.S.Kalsi , Stereochemistry : Conformation and Mechanism , Wiley Eastern Ltd - 2007.

SEMESTER – I KINETIC THEORY OF GAS AND CHEMICAL KINETICS CH102Q

Objectives:

- To study about SI units and unit conversion. To study about the laws governing the gaseous state
- To impart the knowledge on Chemical kinetics.

UNIT – I (12 hrs)

- 1.1 Dimensions of units and its conversion.
- 1.2 The perfect gas equation of state – Boyle's law, Charles's law and Avogadro's principle.
- 1.3 Real gas equation – critical temperature – compression factor – Virial equations of state – Vanderwaals equation of state – Boyle temperature – Joule-Thomson effect – Linde refrigerator (Pages 12 – 34)

UNIT – II (12 hrs)

- 2.1 Kinetic model of gases laws from the kinetic gas equation – Kinds of speed – mean, rms, most probable velocities. Maxwell's distribution of molecular speeds – Variation with temperature and molar mass.
- 2.2 Combined gas equation – Standard temperature and pressure.
- 2.3 Mixture of gases: partial pressures – Dalton's law.
- 2.4 Diffusion and effusion – Molecular collisions. [Pages 17-34]

UNIT-III (12 hrs)

- 3.1 Concept of equilibrium – law of mass action – relationship between K_p & K_c – effect of concentration, pressure, partial pressure, temperature & volume – Le Chatelier's principle
- 3.2 Adsorption – terminologies – Gibbs adsorption isotherm – Freundlich – Langmuir – BET theory – adsorption isotherms – applications of adsorption

UNIT-IV (12 hrs)

- 4.1 Concepts of reaction rates – rate and units of rate of a reaction – dependence of rate on concentration – rate expression and rate constant – order and molecularity.
- 4.2 Integrated rate equations – zero order, first order, pseudo first order reaction – half life of a reaction – temperature dependence of the rate of a reaction – effect of catalyst.

UNIT-V**(12 hrs)**

- 5.1 Solutions- types of solutions- concentration units of solutions- ideal and non ideal solutions.
- 5.2 Colloids- various types of classification – emulsions-applications of colloids.
- 5.3 Meso phases and disperse systems – liquid crystals- classification- surface, structure and stability- electrical double layer.(403-407)

Text & reference books

1. P.W. Atkins. Elements of Physical chemistry. Oxford university Press. 3rd edition. 1990.
 2. Puri and Sharma. Principles of physical chemistry. 4th edition. 2003
- Arun Bahl, B.S. Bahl and G.D. Tuli . Essentials of Physical Chemistry. 26th edition (revised multicolour). 2009

St. Joseph's College, Cuatrecaseros.

SEMESTER – I ALLIED MATHEMATICS – I AMT101S**UNIT-I: THEORY OF EQUATIONS**

Polynomial Equations with real Coefficients – Irrational roots – Complex roots – Symmetric functions of roots.

UNIT-II: THEORY OF EQUATIONS (CONTD)

Transformation of equation by increasing or decreasing roots by a constant – Reciprocal equations – Newton's method to find a root approximately (without proof) .

UNIT-III: MATRICES

Characteristic equation of a square matrix– Eigen roots and eigen vectors – Cayley – Hamilton theorem [without proof] – Verification and computation of inverse matrix-

UNIT-IV: DIFFERENTIAL CALCULUS

n-th derivatives – Leibnitz theorem [without proof] and applications – Jacobians– Curvature and radius of curvature in Cartesian co-ordinates and polar co-ordinates.

UNIT-V: APPLICATION OF INTEGRATION

Evaluation of double, triple integrals – Simple applications to area, volume and centroid.

TEXT BOOK:

P. Duraipandian and Dr. S. Udayabaskaran. 1997, "Allied Mathematics" , Vol I & II. Chennai: Muhil Publishers.

Unit-I: Sec(3.1,3.1.1,3.1.2,3.2,3.2.1),

Unit-II:Sec(3.2.2,3.3,3.3.4),

Unit-III:Sec(1.1.1,1.1.2,1.2,1.4.3),

Unit-IV:Sec(2.7,4.1,4.1.1,4.2),

Unit-V: Chap:3(3.4,3.4.1,3.5,3.5.1,3.5.2,3.6),

REFERENCE BOOKS:

1. P. Balasubramanian and K. G. Subramanian. 1997, "Ancillary Mathematics", Vol I & II. New Delhi: Tata McGraw Hill.
2. S.P.Rajagopalan and R.Sattanathan(2005), "Allied Mathematics", Vol I & II. New Delhi: Vikas Publications.
3. P. R. Vittal (2003), "Allied Mathematics", Chennai: Marghan Publications.
P.Kandhasamy, K. Thilagavathy (2003), "Allied Mathematics" Vol I & II. New

SEMESTER – I VALUE EDUCATION VE101

Unit I

Values-Definition- Concept -Sources of values-Characteristics of values-Classification of values-Importance of value education-Erosion of values-Political erosion-social erosion-economic erosion.

Unit II

Personal values-Importance- Self concept-Meaning-the existential self- the categorical self- self - image- Ideal self- Attitude-Meaning-Formations-Factors determining attitude-Need for positive attitude-Developing positive attitude-Consequences of negative attitude.

Unit III

Adjustment problems- Emotional and sexual adjustments-Significance of youth period- Autonomy versus dependence -Feeling of inferiority- Marriage and family-Identity of roles- Vocational problems - Social discrimination- stress coping skills.

Unit IV

Social values-Meaning-Importance-Types-Social sensitiveness-Altruism-Toleration-Social adjustment- Social loyalty-Social justice-Panchsheel of values-Other social values-Family values- Value of team work-Functions of family-Moral values-Importance of moral values.

Unit V

Cultural values-Meaning-Importance -Religious values-Characteristics of religious values- significance of religious education- Secular values-mutual understanding - Mutual cooperation- Tolerance- Appreciation of universal truths- Character-Humanitarianism.

Text Books;

1. RATCHAGAR .I (2010) mental health of rural youth.vijay Nicole imprints private limited, Chennai.
2. RATCHAGAR .I (2012) Value education, personality enrichment& soft skills. Vijay Nicole imprints private limited, Chennai.

References;

1. Beliefs Attitudes and Values by Milton Rokeach (1968)
2. The Nature of Human Values by Milton Rokeach (Aug 1973)
3. Understanding Human Values by Milton Rokeach (Jul 1, 2000)
4. The Three Christs of Ypsilanti (New York Review Books Classics) by Milton Rokeach and Rick Moody (Apr 19, 2011)
5. Understanding Human Values by Milton Rokeach (Jul 1, 2001)
6. Health And Human Values by Frank Harron, (1983)