

பருவம்: முதற் பருவம்

பாடக் குறியீட்டு எண்: LT101S

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**BASIC LANGUAGE SKILLS**

[15 HRS]

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 ALGEBRA & TRIGONOMETRY MT101S**UNIT - I: THEORY OF EQUATIONS**

Polynomial Equations - Imaginary and Irrational roots – Symmetric Functions of roots in terms of Coefficients – Reciprocal Equations – Transformation of Equations - Descartes Rule of Signs – Approximate Solutions of Polynomials by Horner's method – Newton Raphson method of Solution of a cubic polynomial.

UNIT-II: TRIGONOMETRY

Expansion of $\cos n\theta$, $\sin n\theta$ - Expansion of $\tan n\theta$ in terms of $\tan\theta$ - Expansion of $\tan[A+B+C+\dots]$ solution of trigonometric equations. Powers of sines and cosines of θ in terms of functions of multiples of θ – Expansions of $\sin\theta$, $\cos\theta$ and $\tan\theta$ in a series of ascending powers of θ - Hyperbolic and Inverse Hyperbolic functions: Real and Imaginary parts - Inverse Hyperbolic functions.

UNIT - III: SUMMATION OF SERIES

Binomial - Exponential and Logarithmic series [Theorems without proofs]

UNIT - IV: MATRICES

Symmetric – Skew symmetric – Hermitian Skew Hermitian – Orthogonal and Unitary Matrices – rank of Matrix – Consistency and solutions of Linear Systems – Cayley Hamilton Theorem [without proof] – Eigen Values – Eigen Vectors – Similar Matrices – Diagonalisation of Matrix.

UNIT - V: ELEMENTARY NUMBER THEORY

Prime Number – Composite Number – Decomposition of a Composite Number as a Product of Primes uniquely [without proof] – Divisors of a Positive Integer – Congruence Modulo n – Euler Function [without proof] – Highest Power of a Prime Number p contained in $n!$ – Fermat's and Wilson's Theorems (without proof)

Text Books:

1. T.K.Manicavachagom Pillay, T.Natarajan and K.S.Ganapathy. [2004], Algebra, Volume I & II S.Viswanathan Printers Pvt. Ltd. Chennai.
2. P. Kandasamy, K.Thilagavathy [2004], Mathematics for B.Sc Vol – I, II, III & IV, S.Chand & Company Ltd., New Delhi-55.

Reference Books

1. P. Kandasamy, K.Thilagavathy [2004], Mathematics for B.Sc Vol – I, II, III & IV, S.Chand & Company Ltd., New Delhi-55.
2. S.Arumugam [2003] Algebra. New Gamma Publishing House, Palayamkottai.
3. A.Singaravelu [2003] Algebra and Trigonometry, Vol – I & II Meenakshi Agency, Chennai.
4. S.Sudha. [1998] Algebra and Trigonometry. Emerald Publishes, Chennai.

SEMESTER – I TWO DIMENSIONAL & THREE DIMENSIONAL GEOMETRY MT102T**UNIT – I : CONICS**

Parabola, Ellipse, Hyperbola & Rectangular Hyperbola

UNIT - II: PLANES

General equation – angle between the planes - passing through three points – line of intersection – length of the perpendicular – plane bisecting the angles

UNIT - III: STRAIGHT LINES

Symmetrical form – passing through two points – plane and straight line – coplanar lines – shortest distance

UNIT - IV: THE SPHERE

Section of a sphere by a plane – Tangent plane Radical plane – Co-axial system of spheres, Limiting points, orthogonal sphere.

UNIT - V: CONE AND CYLINDER

Equation of a cone – Cone whose vertex is at the origin – Quadric cone with vertex at origin – Right Circular Cone – Enveloping Cone of a Sphere – Cylinder – Right Circular Cylinder – Equation of a Cylinder.

Text Books:

1. T.K.Manicavachagom pillay & T. Natarajan (2011) Analytical Geometry, part I- Two Dimensions. S.Viswanathan Printers & Publishers Pvt.Ltd. Chennai
Parabola Sec: 3, 3.1, 6, 6.1,7,8 - 8.3, 10 -10.3, 11, 12
Ellipse Sec: 3-3.3, 7-7.2,8,13,16-16.2
Hyperbola Sec: 3, 3.1, 4, 4.1,7,8
Rectangular Hyperbola Sec:11-11.2,12,13
2. P.R.Vittal [2003] Coordinate Geometry, Margham Publication, Chennai.
3. P.Kandasamy, K.Thilagavathy (2004), Mathematics for B.Sc Vol-I, II, III & IV, S.Chand & Company Ltd, New Delhi-55.

Reference Books

1. B.S.Grewal (1982) Plane Trigonometry, Part II, Cambridge University Press, London.
2. A.Singaravelu (2003) Trigonometry, Margham Publications, Chennai
3. S.Arumugam & others, (2003) New Gamma publication, Palyamkottai
4. S.Duraipandian and Laxmi Duraipandian (1965) Analytical Geometry – 3D. Emerald Publishers, Chennai.

SEMESTER – I MATHEMATICAL STATISTICS – I ASMT101T**UNIT – I**

Diagrammatic representation of statistical data – Simple bar diagram, Multiple bar diagram, Percentage bar diagram, Subdivided bar diagram and Pie diagram. Graphical representation of statistical data: Histogram, Frequency polygon, Frequency curves and Ogives. Measures of Locations and Dispersion. Skewness and Kurtosis.

UNIT – II

Probability: Basic definitions – Axiomatic approach to Probability – Basic theorems on Probability – Addition theorem on probability and related problems – Conditional probability – Multiplication theorem of probability and related problems – Independent events – Pair wise Independent events (definition only) – Baye's theorem and related problems.

UNIT – III

Random Variable – Distribution function and their properties - Discrete random Variable – Probability mass function and simple problems - Continuous random variable – Probability density function and simple problems – Two dimensional random variables – Joint probability mass function, Joint probability density function and simple problems.

UNIT – IV

Mathematical Expectations: Properties of Expectations – Variance, Covariance and their properties. Moment generating function – Characteristics function - Cumulants – Chebychev's inequality

UNIT – V

Correlation: Scatter diagram, Karl Pearson's Coefficient of correlation, Spearman's rank correlation - Partial and Multiple correlations (3 variables only). Regression analysis: Simple regression equations.

Text Books:

1. "Fundamentals of Mathematical Statistics" (11th edition – 2002), Gupta. S. C. and Kapoor. V. K., Sultan Chand & Sons, New Delhi.
2. "Statistical Methods" (32nd edition - 2004), Gupta. S. P., Sultan Chand & Sons, New Delhi.

Reference Books:

1. "Mathematical Statistics" (1st edition – 2002), Vittal. P. R., Margham Publications, Chennai - 17
2. "Introduction to Probability and Statistics" (2nd edition – 1939), Vijay Rohatgi. K. and Ehsanes Saleh. A.K., John Wiley & Sons, Inc., New York.
3. "Fundamentals of Applied Statistics" (2nd edition – 1978), Gupta. S. C. and Kapoor. V. K., Sultan Chand & Sons, New Delhi.
4. "Introduction to Theory of Statistics" (3rd edition - 2001), Alexander M. Mood, Franklin A. Graybill and Duance C Boes, Tata McGraw Hill Publishing Company Ltd., New Delhi.
5. "Fundamentals of Statistics – Volume II" (6th edition - 1990), Goon. A. M., Gupta. M. K. and Dass Gupta. B, The World Press Private Ltd., Calcutta.

SEMESTER – I VALUE EDUCATION VE101

Unit I

Values-concept-definition-characteristics-division of values-important of value education

Unit II

Personal values;self concept,self esteem,self acceptance,attitude

Unit III

Youth problems;career decision and unemployment,emotional and sexual adjustment, autonomy versus dependence feeling of inferiority,marriage and family,identity of roles,vocational problems and social discrimination,suggestions to cope up with stress.

Unit IV

Social values

Relationship with (family,college,and friendship)and social responsibility

Moral values-honesty love and concern for others-truthfulness-justice.

Unit V

Religious values and cultural values - Various religious of the world - Religions tolerance - Unity in diversity – secularism - Ahimsa vs terrorism

Text Book

Value Education - P. Paul

St. Joseph's College, Cuddalore.

பருவம்: இரண்டாம் பருவம்

பாடக் குறியீட்டு எண்: LT202S

அலகு பாடங்கள்**அலகு - 1**

- 1.1 திருமூலர்
- 1.2 சம்பந்தர்
- 1.3 திருநாவுக்கரசர்
- 1.4 மாணிக்கவாசகர்
- 1.5 ஆண்டாள்

அலகு - 2

- 2.1 பட்டினத்தார்
- 2.2 மஸ்தான் சாகிபு
- 2.3 குமரகுருபரர்
- 2.4 கலிங்கத்துப் பரணி
- 2.5 நந்திக்கலம்பகம்
- 2.6 முக்கூடற்பள்ளு

அலகு - 3 (உரைநடை)

நம்மால் முடியும் தம்பி நம்பு
எம்.எஸ்.உதயமூர்த்தி

அலகு- 4 (இலக்கிய வரலாறு)

- 4.1 சைவ சமயக் குரவர்
- 4.2 ஆழ்வார்கள் (ஆண்டாள், குலசேகர ஆழ்வார் மட்டும்)
- 4.3 சிற்றிலக்கியங்கள் (பரணி, பள்ளு, பிள்ளைத் தமிழ், கலம்பகம் மட்டும்)
- 4.4 இசுலாமும் தமிழும்
- 4.5 உரைநடை வளர்ச்சி

அலகு - 5 (மொழித் திறன்)

- 5.3 கலைச் சொல் ஆக்கம்
 - 5.3.1 அறிவியல்
 - 5.3.2 ஆட்சித்துறை
 - 5.3.3 கணினி
 - 5.3.4 புழங்கு பொருட்கள்
- 5.4 மொழிபெயர்ப்புப் பகுதி
 - 5.4.1 கடிதங்கள்

SEMESTER – II ENGLISH THROUGH LITERATURE – II LE202S

UNIT -1 [15 HRS]

PROSE : Contemporary Issues

The First Atom Bomb – Marcel Junod

Climatic Change and Human Strategy – E. K. Fedcrov

Corruption : Causes, Consequences and Agenda for Further Research – Paolo Mauro

UNIT- 2

LIFE STORIES

The Diary of a young girl – Anne Frank

Wings of Fire – A.P.J. Abdul Kalam

Mother Teresa – F. G. Herod

UNIT - 3

BASIC GRAMMAR

Articles

Pronouns – Personal, Reflexive and Emphatic

Pronouns – Demonstrative, Indefinite, Interrogative, Distributive and Reciprocal.

Pronouns – Relative

Verbs – Transitive and Intransitive, Active and Passive Voice

Verbs – Mood and Tense

UNIT - 4.

WRITTEN COMMUNICATION SKILLS

Precis Writing

Note Making

Report Writing

Text

1. Elango, K. **Insights : A Course in English Literature and Language**. Hyderabad: Orient Black Swan Private Limited, 2009.
2. Bhatnagar, R.P., and Rajul Bharagava. **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 – II CALCULUS MT203**UNIT – I:**

Differential Calculus: n^{th} derivative – Leibnitz's theorem [without proof] and its application – Jacobians – Total differential – maxima and minima functions of 2 and 3 independent variable, Lagrange's method [without proof], problems on this concepts.

Chapter 1(Pages from 159 to 173)**Chapter 2(Pages from 215 to 240) (Vol I)****UNIT – II**

Differential Calculus [Contd]: Curvature, Radius of Curvature in Cartesian and Polar coordinates, p-r equation.

Chapter 2(Pages from 326 to 341) (Vol II)**UNIT – III**

Differential Calculus [Contd]: Evolutes, Envelope, Asymptotes: Methods [without proof] of finding asymptotes of rational algebraic curves with special cases.

Chapter 3(Pages from 345 to 395) (Vol II)**UNIT –IV**

Integral Calculus: Reduction formulae, Beta and Gamma Functions – Properties and Problems.

Chapter 5(Pages from 397 to 430) (Vol II)**UNIT – V**

Integral Calculus [Contd]: Double Integrals – Change of order of Integration – Triple Integrals – Applications to Area, Surface Area and Volume.

Chapter 6(Pages from 342 to 490) (Vol II)**Text Books:**

1. S.Narayanan and T.K.Manicavachagom Pillay [2004] Calculus. S.Viswanathan Printers & Publishers Pvt.Ltd. Chennai.
2. P.Kandasamy, K.Thilagavathy [2004], Mathematics for B.Sc Vol-I, II, III & IV, S.Chand & Company Ltd., New Delhi-55.

Reference Books

1. Shanti Narayan [2001] Differential Calculus. Shyamlal Charitable Trust, New Delhi.
2. Shanti Narayan [2001] Integral Calculus. S.Chand & Co. New Delhi.
3. S.Sudha [1998] Calculus. Emerald publishers, Chennai.
4. G.B.Thomas and R.L.Finney.[1998] Calculus and Analytic Geometry Addison Wesley [9th Edn], Mass.[Indian Print].
5. P.R.Vittal [2004] Calculus, Margham Publication, Chennai.

SEMESTER – II NUMERICAL METHODS MT204**UNIT- I: FINITE DIFFERENCES**

First and higher order differences-forward differences and Back ward differences-Properties of operators-Differences of a Polynomial-Factorial Polynomials – Operator E, Relation between Δ, ∇ and E – Interpolation – Newton – Gregory forward & backward formulae for interpolation.

UNIT-II: CENTRAL DIFFERENCES

Central difference Operators – Central differences formulae: Gauss Forward and Backward formulae – Sterling's formula – Bessel's formula.

UNIT – III: INTERPOLATING FOR UNEQUAL INTERVALS AND INVERSE INTERPOLATION

Divided differences – Newton's divided differences formula and Lagrange's formula – Estimating the Missing terms [with one or more missing values] – Inverse Lagrange's method.

UNIT – IV: SOLUTION OF SIMULTANEOUS EQUATION

Gauss elimination method – Matrix inversion method – Gauss – Jordan Method, Gauss – Seidal method – Crout's method [Three unknowns only].

UNIT – V: SOLUTION OF DIFFERENTIAL EQUATION

Solving second order differential equation, Rung kutta method, Euler's modified method, Euler's method, Adam's method.

Text Books:

1. A.Singaravelu [2004]. Numerical Methods Meenakshi Agency, Chennai
2. M.K.Venkataraman.(1992) Numerical methods for Science and Engineering National Publishing Company., Chennai.

Reference Books

1. S.Arumugham.[2003] Numerical Methods, New Gamma Publishing, Palayamkottai.
2. H.C.Saxena.[1991] Finite differences and Numerical analysis S.Chand & Co. Delhi
3. B.D.Gupta.(2001) Numerical Analysis, Konark Pub. Ltd., Delhi
4. P.Kandasamy, K.Thilagavathy [2003] Calculus of Finite difference & Numerical Analysis, S.Chand & Company Ltd., New Delhi-55.

SEMESTER – II MATHEMATICAL STATISTICS – II ASMT202S**UNIT – I**

Discrete distributions: Binomial distribution, Poisson distribution and Geometric distribution – Derivations of mean, variance and moment generation functions.

UNIT – II

Continuous distributions: Uniform, Exponential and Normal distributions. Sampling distributions: Student's t, F and χ^2 distributions (derivations only) and their relationships.

UNIT – III

Tests of Significance (small samples) based on t, F and χ^2 distributions with respect to mean, variance and correlation coefficient. Chi – Square distribution - test for independence of attributes.

UNIT – IV

Tests of significance (large samples) – Proportion, Mean, Variance and Correlation Coefficient.

UNIT –V

Analysis of Variance: One way and two way classifications. Design of experiments: CRD, RBD and LSD.

Text Books:

1. "Fundamentals of Mathematical Statistics" (11th edition – 2002), Gupta. S. C. and Kapoor. V. K., Sultan Chand & Sons, New Delhi.
2. "Statistical Methods" (32nd edition - 2004), Gupta. S. P., Sultan Chand & Sons, New Delhi.
3. "Fundamentals of Applied Statistics" (2nd edition – 1978), Gupta. S. C. and Kapoor. V. K., Sultan Chand & Sons, New Delhi.

Reference Books:

1. "Mathematical Statistics" (1st edition – 2002), Vittal. P. R., Margham Publications, Chennai - 17
2. "Introduction to Probability and Statistics" (2nd edition – 1939), Vijay Rohatgi. K. and Ehsanes Saleh. A.K., John Wiley & Sons, Inc., New York.
3. "Introduction to Theory of Statistics" (3rd edition - 2001), Alexander M. Mood, Franklin A. Graybill and Duance C Boes , Tata McGraw Hill Publishing Company Ltd., New Delhi.
4. "Fundamentals of Statistics – Volume II" (6th edition - 1990), Goon. A. M., Gupta. M. K. and Dass Gupta. B, The World Press Private Ltd., Calcutta.

பருவம்: இரண்டாம் பருவம் பாடக் குறியீட்டு எண் : EBT 201

அலகு - 1

எளிய முறையில் தமிழ் கற்றல்.

1. பட்டம் - சட்டம் - கட்டடம் - தட்டு - வட்டம் - மாமா
2. பாடம் - சட்டி - கட்டி - தட்டி - வடம் - மாமி
3. பட்டி - சடை - கடை - தடை - வடை - மாதா
4. படி - சாதம் - கார் - தார் - வான் - மாதம்
5. படை - சாவி - காவி - தாள் - வான் - அம்மா - அப்பா
6. பாப்பா -
7. பாட்டி -
8. பாட்டு -

சிறு தொடர்.

பாப்பா படி - பாட்டி கடை - கட்டடம் கட்டித்தா -
பாப்பா பாடம்படி - பாட்டி தட்டு -
பாப்பா பாட்டு படி - பாட்டி வடைத்தட்டு

பயிற்சி.

குடும்பத்தினர் (அ) நண்பருடன் பேச்சுத் தமிழில் உரையாடல்
குறில் நெடில் வேறுபாட்டால் பொருள் மாறுபடும் சொற்கள்
பரம் - பாரம் கரம் - காரம் வரம் - வாரம் சரம் - சாரம்
தரம் - தாரம்

அலகு - 2

உயிரெழுத்துக்கள், ஆய்த எழுத்து, மெய்யெழுத்துக்கள் - வகை, எண்ணிக்கையுடன் அறிதல்.

உயிர்மெய் எழுத்துகள் உருவாதலைக் கற்றல்:
(வல்லின மெய்கள்)

க் + அ - க ற் + ஓள - றோள
K + A - KA RR + OU - RROU

அலகு - 3

உயிர்மெய் எழுத்துகள் மெல்லினம், இடையினம்

ங் + அ = ங ன் + ஓள - னோள
NG + A - NGA N + OU - NOU

ய் + அ = ய ள் + ஓள - ளோள
Y + A - YA LL + OU - LLOU

ஒலி வேறுபாட்டால் பொருள் மாற்றம் (ர-ற, ன-ண, ல-ள, ழ)

அரம் - அறம்

உன் - உண்

வால் - வாள் - வாழ்

ஒவ்வொன்றிற்கும் ஐந்து எடுத்துக்காட்டு தருக.

அலகு - 4

சொல்-வகை

ஓரெழுத்து ஒருமொழி

பெயர்:

ஆ, பூ, தீ, தை, கா (சோலை)

வினை:

வா, போ, ஈ (கொடு)

தா, கா (காத்தால்)

ஈரெழுத்து ஒருமொழி:

பெயர்:

கனி, பனி, வான், காடு, வீடு

வினை:

நில், படி, பார், காண், எழு

தொடர்மொழி: பெயர்:

கபிலர், வெள்ளிவீதியார், திருவள்ளுவர், ஆண்டாள், கம்பர், பாரதியார்

முக்கனி, முத்தமிழ், மூவேந்தர், நாற்றிசை, ஐம்பொறி - இவற்றிற்கு விளக்கம் தருக.

முறைப்பெயர் (உறவுப்பெயர்) அம்மா, அப்பா, மாமா,

அலகு - 5

உடலுறுப்புப் பெயர்கள்:

தலை முதல் அடி வரை உள்ள உறுப்புகள்

முதலெழுத்து மாற்றத்தால் பொருள் மாற்றம் பெறும் உடலுறுப்புகள் சான்றாக:

உதயம் - இதயம்

ஊக்கு - மூக்கு

பண், மண் - கண்

படி - அடி

மரம், வரம் - கால்

கல் - பல்

ஆல், பால் - கால்

கொடை - தொடை

அலை, இலை - தலை

மாது - காது

பாக்கு, வாக்கு - நாக்கு

கிழி - விழி

எழுத்து - கழுத்து

பறவைப் பெயர்கள்:

மயில், அன்னம், கிளி, புறா, குயில்

வீட்டு விலங்குகள்:

பசு, ஆடு, குதிரை, நாய், பூனை

மலர்கள்:

தாமரை, மல்லிகை, முல்லை, செண்பகம், அல்லி

நிறங்கள்:

வானவில்லின் வண்ணங்கள் - அறிதல்

எண்கள்:

ஒன்று முதல் ஐம்பது வரை எழுத்தால் எழுதுதல்

சிறுகதை:

“புலியை ஏமாற்றிய நரி” தமிழ் - நான்காம் வகுப்பு, தமிழ் நாட்டுப் பாடநூல் கழகம், சென்னை.

SEMESTER – II PERSONALITY DEVELOPMENT EPD201

Unit I

Personality

Meaning-definition-major determinants of personality genetic determinants, social determinants, cultural determinants, psychological determinants, theories Jung's typology trait theory psychoanalytical theory importance of personality development guidance to improve personality.

Unit II

Mental health

Meaning-concept-definition-characteristics - influential factors - biological factors - psychological factors - socio-economic and cultural factors

Unit III

Stress and its management

Meaning,definition causes of stress, major life changes and environmental events - consequence of stress, stress management techniques.

Unit IV

Part-a

Anger and its management;

Meaning, definition, nature-causes-symptoms and consequence of anger - physiological effects and psychological effects, techniques to control anger.

Part-b

Suicidal prevention

Unit V

Soft skills development - Presentation skill - Interpersonal skill - Body language

Text Book;

Mental health of rural youth

Reference;

Personality development-Elizabeth .B.Hurlock

SEMESTER – II MATHEMATICAL STATISTICS PRACTICAL ASMP201S**UNIT – I**

Diagrammatic representation of various types of statistical data – Graphical representation of data - Percentiles, Quartiles – Measures of Location and Dispersion - Skewness and Kurtosis.

UNIT – II

Correlation: Karl Pearson's Coefficient of Correlation, Spearman's Rank Correlation. Regression analysis: Simple regression equations.

UNIT – III

Tests of Significance (Small samples) based on t, F and Chi –Square distributions with respect to Mean, Variance and Correlation Coefficient – test for independence of attributes. Fitting of Binomial, Poisson and Normal distributions (area method only) and test for goodness of fit.

UNIT – IV

Tests of significance (large samples) based on Proportion, Mean, Variance and Correlation Coefficient.

UNIT –V

Analysis of Variance: One way and two way classifications. Design of experiments: CRD, RBD and LSD.

Text Books:

1. "Fundamentals of Mathematical Statistics" (11th edition – 2002), Gupta. S. C. and Kapoor. V. K., Sultan Chand & Sons, New Delhi.
2. "Statistical Methods" (32nd edition - 2004), Gupta. S. P., Sultan Chand & Sons, New Delhi.
3. "Fundamentals of Applied Statistics" (2nd edition – 1978), Gupta. S. C. and Kapoor. V. K., Sultan Chand & Sons, New Delhi.

Reference Books:

1. "Mathematical Statistics" (1st edition – 2002), Vittal. P. R., Margham Publications, Chennai - 17
2. "Introduction to Probability and Statistics" (2nd edition – 1939), Vijay Rohatgi. K. and Ehsanes Saleh. A.K., John Wiley & Sons, Inc., New York.
3. "Introduction to Theory of Statistics" (3rd edition - 2001), Alexander M. Mood, Franklin A. Graybill and Duance C Boes, Tata McGraw Hill Publishing Company Ltd., New Delhi.
4. "Fundamentals of Statistics – Volume II" (6th edition - 1990), Goon. A. M., Gupta. M. K. and Dass Gupta. B, The World Press Private Ltd., Calcutta.

பருவம்: மூன்றாம் பருவம்

பாடக் குறியீட்டு எண்: LT303S

அலகு பாடங்கள்

அலகு -1

- 1.1 சிலப்பதிகாரம் - வழக்குரை காதை
- 1.2 மணிமேகலை - பாத்திரம் பெற்ற காதை

அலகு - 2

- 2.1 சீவகசிந்தாமணி - கேமசரியார் இலம்பகம்
- 2.2 கம்பராமாயணம் - மந்தரை சூழ்ச்சிப் படலம்

அலகு - 3

- 3.1 பெரியபுராணம் - பூசலார் நாயனார் புராணம்
- 3.2 தேம்பாவணி - வளன் சனித்த படலம்
- 3.3 சீறாப்புராணம் - மானுக்குப் பிணை நின்ற படலம்

அலகு- 4 (இலக்கிய வரலாறு)

- 4.1 ஐம்பெருங்காப்பியங்கள்
- 4.2 கிறிஸ்துவக் காப்பியங்கள்
- 4.3 இசுலாமியக் காப்பியங்கள்
- 4.4 சோழர்காலக் காப்பியங்கள்
- 4.5 இரட்டைக் காப்பியங்கள்

அலகு - 5

- 5.1 பண்பலை வானொலி நிகழ்ச்சித் தொகுப்பு
- 5.2 வாடிக்கையாளர் சேவை மைய அலுவலர்
- 5.3 சுற்றுலா வழிகாட்டி
- 5.4 கடிதங்கள்
- 5.5 பொதுக்கட்டுரை

SEMESTER – III ENGLISH THROUGH LITERATURE –III LE303S

OBJECTIVES:

1. To enable the students learn the art of communication through reading literature.
2. To enable them appreciate literary works.
3. To make them learn the relationship between Language & Literature.

UNIT- I SPORTS

1. Swami and Friends – R.K. Narayan (Prose)
2. See Off the Shine – Imogen Grosberg (Poem)
3. The Sporting Spirit – George Orwell (Prose)

UNIT-II MASS MEDIA

1. Building an Internet Culture – Philip Agre (Prose)
2. Odds against Us – Satyajit Ray (Prose)
3. TV as Babysitter – Jerzy Kosinski (Prose)

UNIT – III BASIC GRAMMAR

1. Agreement of the Verb with the subject
2. Non – Finite Verbs
3. Strong and Weak verbs
4. The Auxiliaries
5. Anomalous Finites

UNIT – IV BASIC LANGUAGE SKILLS

1. Paragraph Writing
2. Phonetic symbols, transcription (words)
3. Idioms & Phrases:
 - i. List of Idioms: An absent minded person, apple- pie order, an armchair critic, a big shot, a burning question, a cock and bull story, crocodile tears, a flying visit, laughing stock, asquare deal, a tall order, birds of a feather, fish out of water, the lion's share, storm in a tea cup.

- ii. List of Phrases: Bear with, call on, call off, carry out, find out, give up, hand over, keep on, keep up, look after, set out, take over, turn down, wind up, work out.

Text

1. Elango, K. ***Insights: A Course in English Literature and Language***. Hyderabad: Orient Black Swan Private Ltd, 2009.
2. Bhatnagar, R.P., and Bargava, Rajul. ***English for Competitive Examinations***. Chennai: Macmillan, 2002.
3. David Green, ***Contemporary English Grammar Structures and Composition***. Chennai: Macmillan, 2010.

Reference

1. Murphy, Raymond, ***Essential English Grammar***. New Delhi: Cambridge UP, 2009.
2. Jones; Daniel, ***English Pronunciation Dictionary***. Singapore: Cambridge UP, 2009.

SEMESTER – III DIFFERENTIAL EQUATIONS MT305

UNIT-I:

ORDINARY LINEAR DIFFERENTIAL EQUATIONS: Equations of the First Order and Higher Degree: Equations Solvable for p, Equations Solvable for x and Equations Solvable for y – Clairaut's Equation. Equations of second and higher order with constant coefficients.

Chapters: 1,2,3(Pages from 1 to 41)

UNIT – II:

ORDINARY LINEAR DIFFERENTIAL EQUATION [CONTD]: Euler's homogeneous linear equations – Legendre's Linear Equations. Method of Variation of Parameters. Method of undetermined Coefficients. **Chapters: 4,5(Pages from 48 to 87)**

UNIT – III:

DIFFERENTIAL EQUATIONS OF OTHER TYPES: Simultaneous Equations – Total Differential Equations – Different Methods of solving $Pdx+Qdy+Rdz=0$.

Chapters: 6(Pages from 90 to 116)

UNIT – IV

PARTIAL DIFFERENTIAL EQUATIONS: Formation of PDF – Complete Integral – Particular Integral – Singular Integral – Equation's Solvable by direct Integration – Solving equations of the types: $f(p, q)=0$, $f(x, p, q)=0$, $f(y, p, q)=0$, $f(z, p, q)=0$, $f(x, p)=f(y, p)$, $Z=p x + q y + f(p, q)$. Lagrange's equations. **Chapters: 1,2,(Pages from 117 to 185)**

UNIT – V:

LAPLACE TRANSFORM: Transform – Inverse Transform – Properties – Application of Laplace Transform to solution of first and second order linear Differential equations [with constant coefficients] and simultaneous Linear Differential Equations.

Chapters: 1(Pages from 164 to 185)

Text Book:

P.Kandasamy, K.Thilagavathy [2004], Mathematic for B.Sc Vol-I, II, III & IV, S.Chand & Company Ltd., New Delhi-55.

Reference Books:

1. M.D.Raisighanian, [2001] Ordinary and Partial Differential Equations. S.Chand and Co., New Delhi
2. S.Sudha [1998] Differential Equations and Integral Transforms. Emerald publishers, Chennai.
3. P.R.Vittal [2004] Differential Equations and Laplace Transform, Margham Publication, Chennai
4. M.K.Venkataraman.(1992) Higher Engineering Mathematics, III-B, National Publishing Company., Chennai.

SEMESTER – III VECTOR ANALYSIS AND FOURIER ANALYSIS MT306**UNIT – I:**

DIFFERENTIAL VECTOR CALCULUS: Differentiation of a Vector – Geometrical Interpretation of the Derivative – Differentiation Formulae – Differentiation of dot and Cross Products – Partial Derivatives of Vectors – Differentials of Vectors.

UNIT – II:

GRADIENT, DIVERGENCE AND CURL: Vector Differential Operator Del – Gradient of a Scalar Function – Directional Derivative – Geometric Interpretation – Gradient of the sum of Functions; of the product of functions and of a function of function – Operations involving Del – Divergence of a Vector and its Physical Interpretation – Curl of a Vector and its Physical Interpretation – Expansion Formulae for Operators involving Del – Solenoidal and Irrotational.

UNIT – III:

VECTOR INTEGRATION: The Line Integral – Surface Integral – Volume Integral – Theorem of Gauss Divergence, Stoke's Theorem and Green's Theorem [Without proof] and Simple Problems.

UNIT – IV

FOURIER SERIES: Euler's Formulae – Conditions for Fourier Expansion – Functions having Discontinuity – Change of Interval – Odd and Even Functions – Expansions of Odd or Even periodic Functions – Half range series – Typical Wave Forms – Parseval's Formula.

UNIT – V:

FOURIER TRANSFORM: Definition – Fourier Integrals – Fourier Sine and Cosine Integral – Complex Form of Fourier Integral – Fourier Transform: Fourier Sine and Cosine Transforms – Finite Fourier Sine and Cosine Transforms [with out proof] – Properties of Fourier Transforms – Convolution Theorem for Fourier Transforms – Parseval's Identity for Fourier Transforms – [with out derivation]

Text Books:

1. P.R.Vittal [2004] Vector Calculus, Margham Publication, Chennai
2. P.R.Vittal [2004] Fourier Series and Fourier Transform. Margham Publication, Chennai.

Reference Books

1. S.Narayanan and T.K.Manicavachagom Pillay [2004] Calculus. S.Viswanathan Printers & Publishers Pvt.Ltd. Chennai.
2. B.S.Grewal. Higher Engineering Mathematics [2002], Khanna Publishers, New Delhi.
3. M.K.Venkataraman.(1992) Higher Engineering Mathematics, III-B, National Publishing Company., Chennai

SEMESTER-III ACCOUNTING FOR BUSINESS ACMT301S**UNIT-I: INTRODUCTION: [20 Hours]**

Accounting meaning and definition –Branches of accounting – Accounting concepts and conventions – types of accounts – personal, Real and Nominal – Accounting rules – Journal –ledger – preparation of trial balance.

UNIT-II: FINAL ACCOUNTS: [25Hours]

Final accounts of sole trader – preparation of profit and loss account and balance sheet – various adjustments (only simple problems)

UNIT – III: FINANCIAL STATEMENT ANALYSIS: [30Hours]

Meaning of financial statements- functions of financial statements– Limitations of financial statements – Meaning of financial statement analysis-objectives of analysis-Theoretical aspect of types of financial statement analysis-Ratio Analysis- meaning-Advantages – limitations- classification of ratios-practical problems.

UNIT – IV: COST ACCOUNTING: [30Hours]

Meaning and definition – Types of costing –Elements of cost – Preparation of cost sheet and tenders. Marginal costing- Meaning and definition- features- advantages-limitations - Marginal and Absorption costing- cost volume profit analysis- Break Even analysis and Break even point- Applications of marginal costing.

(Key factor, Make or buy decision, export decision, Plant merger decision and sales mix decision)

UNIT – V: BUDGETING AND BUDGETARY CONTROL: [15Hours]

Meaning and definition of budget-Meaning and definition of budgeting-meaning of budgetary control-objectives- merits and demerits-Types of budget- Preparation of Sales, Production, materials, flexible, cash and Overhead budget.

Theory: 20 Problems: 80

TEXT BOOKS:

T.S.Reddy, Y.Hari Prasad Reddy, Financial and Management Accounting, Margham Publications, Chennai, Reprinted 2006.

SEMESTER – III ENVIRONMENTAL STUDIES EVS301

Unit I : Environmental studies and Natural resources (20 Hrs)

Definition, scope and importance of environmental studies – forest resources: deforestation, mining, dams – water resources: over – utilization, floods, drought – mineral resources: exploitation, extraction and usage – food resources: food problems, overgrazing, pesticide problems, water logging, salinity – energy resources: energy needs, renewable and non renewable energy – land resources: land degradation, landslides, soil erosion and desertification – conserving natural resources.

Unit II: Ecosystems : (20 Hrs)

Concept, structure and function of an ecosystem – producers, consumers and decomposers – energy flow – ecological succession – food chains, food webs and ecological pyramids – types, characteristics, structure and function of forest ecosystem, grassland ecosystem, desert ecosystem and aquatic ecosystem –

Unit III: Biodiversity: (20 Hrs)

Definition of biodiversity – genetic, species and ecosystem diversity – value of biodiversity – India as a mega diversity nation – hot spots – threats to biodiversity – endangered and endemic species of India – In-situ and Ex-situ conservation of biodiversity.

Unit IV: Environmental Pollution: (20 Hrs)

Cause, effects and control measures of air pollution, water pollution, soil pollution, marine pollution, noise pollution, thermal pollution and nuclear hazards – solid waste management: causes, effects, control measures and disposal of wastes – disaster management: floods, earthquakes, cyclone, land slides and tsunami.

Unit V: Social Issues, Human population and the Environment: (20 Hrs)

Water conservation, rain water harvesting, watershed management – environmental ethics: issues and possible solution – climate change, global warming, acid rain, ozone depletion, nuclear accidents and holocaust – wasteland reclamation – Environment protection Act – Wildlife protection Act – Forest Conservation Act – public awareness – Population explosion – Environment and human health – Role of Information Technology in Environment and human health.

Field work: (20 Hrs)

1. Visit to a local area to document environmental assets – river / forest / grassland/mangrove.
2. Visit to a local polluted site – urban / rural / industrial / agricultural.
3. Study of common plants, insects, birds.
4. Study of simple ecosystems – pond, river, forest, etc.,
5. Practical work

Reference Books:

1. Joseph C.Daniel,2004. Principles of Environmental Science. Brightson's Publications,Chennai.
2. Agarwal, K.C. 2001 Environmental Biology, Nidi Publ. Ltd. Bikaner.
3. Bharucha Erach, The Biodiversity of India, Mapin Publishing Pvt. Ltd., Ahmedabad - 380 013, India,
Email:mapin@icenet.net
4. Jadhav, H & Bhosale, V.M. 1995. Environmental Protection and Laws. Himalaya Pub. House, Delhi
5. Miller T.G. Jr. Environmental Science, Wadsworth Publishing Co.
6. Odum, E.P. 1971. Fundamentals of Ecology. W.B. Saunders Co. USA,
7. Sharma B.K., 2001. Environmental Chemistry. Geol Publ. House, Meerut
8. Trivedi R.K., Hand book of Environmental Laws, Rules Guidelines, Compliances and Standards. Vol I and II, Enviro Media9.Wanger K.D., 1998. Environmental Management. W.B. Saunders Co. Philadelphia, USA

பருவம்: நான்காம் பருவம்

பாடக் குறியீட்டு எண்: LT404S

அலகு பாடங்கள்

- 1
 - 1.1 புறநானூறு – 74,192,312
 - 1.2 அகநானூறு – 02,07,34
 - 1.3 குறுந்தொகை – 23,38,40
 - 1.4 நற்றிணை – 149,60,110
 - 1.5 ஐங்குறுநூறு – வேட்கைப் பத்து (1-5)
 - 1.6 கலித்தொகை – பாலைக் கலி (9.11)

- 2
 - 2.1 பட்டினப்பாலை (120-192)
 - 2.2 சிறுபாணாற்றுப்படை
 - 2.3 மதுரைக்காஞ்சி
 - 2.4 முல்லைப்பாட்டு

திருக்குறள்

- 3
 - 3.1 அறிவுடைமை
 - 3.2 நட்பாராய்தல்
 - 3.3 புலவி நுணுக்கம்

இலக்கிய வரலாறு

- 4
 - 4.1 எட்டுத்தொகை,
 - 4.2 பத்துப்பாட்டு
 - 4.3 ஆற்றுப்படைகள்
 - 4.4 திருக்குறள் கீழ்க்கணக்கில் பெறுமிடம்

மொழித்திறன்

- 5
 - 5.1 விண்ணப்பங்கள்
 - 5.2 சுருக்கி வரைதல்
 - 5.3 நேர்காணல

OBJECTIVES:

1. To enable students be aware of career prospects.
2. To make them prepare for their career.
3. To introduce students to the realm of fiction with special emphasis on character study.

UNIT- 1 SELECTED SCENES FROM SHAKESPEARE

- i. HE KILLS SLEEP
MACBETH
Act One Scene VII and Act Two Scene II
- ii. PLAY OUT A PLAY??
HENRY IV PART I
Act Two Scene IV
- iii. PATTERNS OF LOVE
AS YOU LIKE IT
Act Four Scene I

UNIT- II POETRY

1. The Road Not Taken – Robert Frost
2. La Belle Dame Sans Merci – John Keats
3. Punishment in Kindergarten- Kamala Das

UNIT- III SHORT STORY

1. The Purple Dress – O’Henry
2. Chameleon – Anton Chekhov
3. The Reaping Race- Liam o’ Flaherty

UNIT- IV

1. Phonetic Transcription (Sentences)

UNIT- V Basic Grammar

1. Use of wrong prepositions
2. Unnecessary use of Articles.
3. Use of wrong Tenses
4. Punctuation & Capitals
5. The uses of prefixes & suffixes

Text

1. *Selected scenes from Shakespeare's plays*. ed., Board of Editors. Chennai: Emerald publishers, 2002.
2. Mohanty P.K and Mahapatra, S. *An Anthology of Short Stories*. New Delhi: S. Chand & Company Ltd, 1997.
3. Ambika Sen Gupta. *Selected College Poems*, Madras: Orient Longman, 1994.
4. O' Conor, J.D. *Better English pronunciation*. New Delhi: Cambridge UP
5. *Popular Short Stories* ed. Board of Editors. Chennai: Oxford UP, 1998.

Reference

1. Krishnasamy, N& Sriraman T. *Creative English for Communication*. Chennai: Macmillan, 2006.
 2. Burton, S.H: Macmillan Master Series, Macmillan.
- Jones, Daniel. *English Pronouncing Dictionary*. Singapore: Cambridge UP, 2006.

SEMESTER – IV MECHANICS- I MT407**UNIT –I**

Types of forces, magnitude and direction of the resultant of the forces acting on a particle.
Triangle of forces, Lami's Theorem, simple problems.

Chapters: 2(2.1,2.2), Chapters: 3(3.2,3.3,3.4)

UNIT – II

Equilibrium of a particle under several co-planar forces, parallel forces, moments, couples.
Simple problems

Chapters:3(1.1,1.2), Chapters: 4(1.1,1.2,2.1,2.2,4.1,4.2,4.3,6.1,6.2,7.1,7.2,7.3,8.1,9.1)

UNIT –III

Laws of friction, angle of friction, equilibrium of a body on a rough inclined plane acted on by several forces. Simple problems

Chapters: 2(1.2,2.2), Chapters: 3(3.2)

UNIT – IV

Centre of mass of simple uniform bodies, triangle lamina, rods forming a triangle, trapezium, centre of gravity of a circular arc, elliptic quadrant, solid and hollow hemisphere, solid and hollow cone. Simple problems

Chapters: 6(6.1, 1.1, 2.1,2.2,2.3,2.4,6.3)

UNIT – V

Kinematics of a particle, velocity, acceleration, relative velocity, relative acceleration, angular velocity, acceleration components in coplanar motion along,

[a] two fixed perpendicular direction

[b] tangential and normal direction

[c] radial and transverse directions. Simple problems

Chapters: 1(1.2,,2.2,2.3,1.3,4.1,4.2,4.3)

Text Book :

1. P.Duraipandian, Laxmi Duraipandian and Muthamizh Jayapragasam. [2006] Mechanics, S.Chand & Co. New Delhi.

Reference Books

1. A.V. Dharmapadam [1991] Mechanics, S.Viswanathan Printers & Publishers. Chennai.
2. S.L. Loney, [1982] Elements of Statics, Macmillan India, Delhi
3. M.K.Venkataraman [1990] Statics, Agasthier Book Depot, thrichy
4. P.N. Chatterji [1996] Statics. A Rajhans Publications (16th Edn), Meerut
5. Joseph F. Shelley [2005] Vector Mechanics for Engineers Vol-I:Statics, Tata McGraw Hill Edition, New Delhi.

SEMESTER – IV GRAPH THEORY MT408

UNIT – I

Graphs, Sub graphs, Degree of a vertex, Isomorphism of graph, independent sets and coverings; intersection graphs; **Chapters: 2(2.0 To 2.7)**

UNIT –II

Adjacency and incidence of matrices; Operations on graphs; degree sequences; graphic sequences; Walks; trails; paths;

Chapters: 2(2.8 To 2.9), Chapters: 3(3.0 To 3.2), Chapters: 4(4.0 To 4.1)

UNIT –III

Connectedness and components; cut point, bridge, block; Connectivity theorems and simple problems **Chapters: 4(4.2,4.3,4.3,4.4)**

UNIT – IV

Eulerian graphs and Hamiltonian graphs; simple problems; Trees, theorems, and simple problems. **Chapters: 5(5.0 To 5.2), Chapters: 6(6.0 To 6.2)**

UNIT – V

Planarity; definition and properties; Characterizations of planar graph, Colourability; chromatic number and index. **Chapters: 8(8.0 To 8.2), Chapters: 9(9.0,9.1)**

Text Books:S. Arumugam and S. ramachandran, “Invitation to Graph Theory, Sitech Publications India Pvt Ltd, 7/3C, Madley Road, T. Nagar, Chennai – 17.

Reference Books

1. S. Kumaravelu, Susheela Kumaravelu, Graph Theory, publishers, 182, Chidambara Nagar, Nagercoil-629 002.
2. S. A. Choudham, A First Course In Graph Theory, Macmillan India Ltd.
3. Robin J. Wilson, Introduction to Graph Theory, Longman Group Ltd.
4. J.A. Bondy and U. S. R. Murthy, Graph Theory with Applications, Macmillan, London.

SEMESTER – IV ALLIED PHYSICS APH401S

UNIT- I: PROPERTIES OF MATTER & ACOUSTICS**(15 hours)**

Sound: Transverse vibrations of a stretched string- expression for the velocity of transverse wave – laws of transverse vibrations- A.C frequency measurement using sonometer- velocity of sound in a gas- Ultrasonics-production and uses.

UNIT- II: ELECTRICITY & MAGNETISM**(15 hours)**

Capacitor-energy of charged capacitors-loss of energy due to sharing of charges DC circuits – growth and decay of charge containing resistance and capacitor (RC) circuit & inductance and resistance (LR) circuit - -potentiometer-measurement of internal resistance of a cell and unknown resistances - Moment and pole strength of a magnet

UNIT- III: OPTICS**(15 hours)**

Physical Optics: Interference in thin films- Coherent sources- Interference in wedge shaped film- Newton's rings- Measurement of wave length and radius of curvature with theory- Air wedge - Theory of plane transmission grating- determination of wavelength of Hg lines by normal incidence

UNIT- IV: RELATIVITY & QUANTUM MECHANICS**(15 hours)**

Elements of relativity and Postulates of theory of relativity- Lorentz transformation equations- derivation- length contraction- time dilation- mass energy equivalence.

Quantum mechanics: De Broglie's waves - Uncertainty principle- postulates of wave mechanics- - Schrodinger's equation (one dimensional) – application to a particle in a box.

UNIT- V: ELECTRONICS**(15 hours)**

Basic electronics: PN Junction diode- transistor-characteristics of CE mode- Zener diode-voltage regulator- LED

Digital electronics: Boolean algebra- - verification AND, OR, NOT gates- construction using diodes and transistors- NAND- verification of Demorgan's theorem - ICs – SSI, MSI, LSI and VLSI.

Text Books

- 1.Principle of physics-Brijlal Subramaniyam
- 2.Allied physics-R.Murugesan.
- 3.Text book of sound- Brijlal Subramaniyam
- 1.Principle of Electronics-V.K.Metha.

SEMESTER – IV ALLIED PRACTICAL APHP401**LIST OF PRACTICALS**

(Any TEN out of the FOURTEEN experiments can be selected)

1. Determination of Young's modulus –non-uniform bending -Pin and microscope.
2. Determination of Rigidity modulus- Torsional pendulum (without masses).
3. Determination of Rigidity modulus – Static torsion
4. Sonometer – verification of laws and frequency of tuning fork.
5. Sonometer – A.C frequency - Steel and Brass wire.
6. Air wedge – thickness of a wire.
7. Newton's rings – Determination of Radius of curvature
8. Spectrometer – Grating-Determination of wavelength of Hg lines.
9. Potentiometer – Calibration of Low range voltmeter.
10. Figure of merit of a galvanometer (Table galvanometer).
11. Construction of AND, OR NOT gates using diodes and transistors.
12. NAND gate as a universal gate.
13. Zener diode - Voltage regulation characteristics.
14. Field along the axis of a circular coil-deflection magnetometer- B_H and M.

SEMESTER-IV FIRST AID AOFA401

UNIT 1: PRINCIPLES AND EMERGENCY FIRST AID

Definition of first aid-objects of first aid –principles of first aid-Responsibilities-golden rules of first aid - kit for first aider

Diagnosis –blood pressure-bleeding or hemorrhage-types of hemorrhage- Wounds-types-open and closed wounds-emergency care for general wounds-wound with foreign body-special wounds-wounds to the palm of the hand, abdominal wounds-

UNIT II: MEDICAL EMERGENCIES

choking-symptoms –signs and treatment –methods of back slap-adults –infants and children-asphyxia –causes-symptoms and signs and treatment- drowning -effects-symptoms and signs and treatment-suffocation – suffocation by poisonous gases.

Diabetic emergencies –Hyperglycemia, Hypoglycemia-symptoms and signs treatment-Liver emergency-Kidney Emergency

UNIT III: INJURIES AND ANAPHYLACTIC SHOCK

Poisoning –Routes of poisoning- Effects of poisoning-treatment and measures-Stroke-Heart Attack-coronary obstruction and cardiac arrest- signs and symptoms –Treatment-insect bites- snake bites- dog bites-symptoms and treatment

-Injuries-head injuries-burns and scalds-chemical burns-electric burns-radiation burns-and cold burns-sign-symptoms and treatment

UNIT IV: COMMON AILMENTS

Head ache- causes-signs and symptoms-treatment-tooth ache-ear ache –causes and treatment-Common cold –cough –Diarrhoea and dysentery-causes-symptoms and signs-treatment-constipation-travel sickness-signs and symptoms-treatment

UNIT V: FOOD AND NUTRITION

Importance of carbohydrates-proteins-fats –their physiological function –Vitamins –fat soluble – water soluble-daily requirements –functions and deficiency

References

1. Sathya Narayanan U,1999, “Biochemistry”, (2nd Edition),kolkata,Allied Publishers
2. Manual of First aid –L.C.Gupta Abhitab-2004, jaypee brothers, medical publishers (p)ltd,new delhi,India.
- 3.Dr. M. Swaminathan,1987, “Food and Nutrition Vol I&II”, Second edition,Bangalore, Bappco Publishers

St. Joseph's College, Cuddalore.

SEMESTER –V ABSTRACT ALGEBRA MT509**UNIT – I: GROUPS**

Definition of a Group - Examples – Subgroups

UNIT – II: GROUP [CONTD]

Counting Principle – Normal Subgroups – Homomorphism.

UNIT – III: GROUPS [CONTD]

Automorphisms – Cayley’s Theorem – Permutation Groups.

UNIT – IV: RINGS

Definition and Examples - Integral Domain – Homomorphism of Rings – Ideals and Quotient Rings.

UNIT – V : RINGS [CONTD]

Prime Ideal and Maximal Ideal – The field of quotients of an Integral domain – Euclidean rings.

Recommended Text

I.N.Herstein.[1989] Topics in Algebra,[2nd edn] Wiley Eastern Ltd. New Delhi
Chapter – 2: Sections 2.1 – 2.10 [Omit Applications 1 and 2 of 2.7]Chapter – 3: Sections 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7

Reference Books

1. S.Arumugam.[2004] Modern Algebra. SciTech Publications, Chennai.
2. J.B.Fraleigh [1987]. A First Course in Algebra [3rd edition] Addison Wesley, Mass. [Indian Print]
3. Lloyd R.Jaisingh and Frank Ayres,Jr. [2005] Abstract Algebra, [2nd edition], Tat McGraw Hill, New Delhi.
4. M.L.Santiago[2002] Modern Algebra, Tat McGraw Hill, New Delhi
5. SurjeetSingh and Qazi Zameeruddin.[1982] Modern algebra. Vikas Publishing House Pvt.Ltd. New Delhi.

SEMESTER –V REAL ANALYSIS- I MT510**UNIT – I**

Functions – Real valued functions – Equivalence – Countability and Real numbers- Least Upper Bound.

Ch.1.4 – 1.7

UNIT – II: SEQUENCES

Definition – Subsequences – Limit of sequence – Convergent Sequence – Divergent Sequence – Bounded Sequence – Mono tone Sequence.

Ch 2.1 – 2.6

UNIT – III SEQUENCES [CONTD]

Operations on Convergent Sequence Operation on Divergent Sequence – Limit Superior and Limit Inferior – Cauchy sequence.

Ch 2.7 – 2.10

Series: Convergence and Divergence – Series with non-Negative terms – Alternating series – Conditional Convergence and Absolute Convergence.

Ch 3.1 – 3.4

UNIT –IV: SERIES [CONTD]

Rearrangement of Series – Tests for Absolute Convergence – Series whose terms form a non decreasing Sequence – Summation of Parts.

Ch 3.5 -3.8

Limits and Metric spaces: Limit of an Function of the Real Line – Metric Spaces – Limits in Metric Spaces.**Ch 4.1 – 4.3**

UNIT – V: CONTINUOUS FUNCTIONS ON METRIC SPACES

Functions Continuous at a point on the real line – Reformulation – Functions Continuous on a Metric Spaces – Open sets – Closed Sets.

Ch 5.1 – 5.5

Recommended Text

R.Goldberg. [2000] Methods of Real Analysis. Oxford & IBH Publishing Co., New Delhi.

Reference Books

1. Tom M. Apostol [1974]. Mathematical Analysis, 2nd Edition, Addison – Wesley, New York.
2. Bartle,R.G. and Shebert [1976] Real Analysis, John Willy & Sons Inc., New York.
3. Malik, S.C and Savitha Arora [1991] Mathematical Analysis Willy Eastern Ltd, New Delhi.

SEMESTER –V COMPLEX ANALYSIS-I MT511**Unit I:**

Complex numbers: Sums and products – Basic algebraic properties – Further properties – Vectors and Moduli – Complex conjugates – Exponential form – Products and powers in exponential form – Arguments of products and quotients – Roots of complex numbers – Examples – Regions in the complex plane.

Chapter:1 Sections 1,2,3,4,5,6,7,8,9,10,11

Unit II:

Functions of a Complex variable – Mappings - Mapping by exponential functions – Limits – Theorems on Limits – Limits involving the point at infinity – Continuity – Derivatives – Differentiation formulas

Chapter:2 Sections 12,13,14,15,16,17,18,19,20.

Unit III:

Cauchy-Riemann Equations-Sufficient Conditions For Differentiability-Polar Coordinates-Analytic Functions-Examples-Harmonic Functions-Uniquely Determined Analytic Functions-Reflection Principle.

Chapter:2 Sections 21,22,23,24,25,26,27,28.

Unit IV:

The Exponential Function-The Logarithmic Function-Branches And Derivatives Of Logarithms-Trigonometric Functions-Hyperbolic Function.

Chapter:3 Sections 29,30,31,34,35

Unit V:

Derivatives of Functions $\omega(t)$ - Definite Integrals of Functions $\omega(t)$ - Contours- Contour Integrals-Some Examples-Upper Bounds For Moduli of Contour Integrals- Antiderivatives-Proof of The Theorem-Cauchy-Goursat Theorem- Proof of The Theorem(omit proof of the lemma).

Chapter:4 Sections 37,38,39,40,41,43,44,45,46,47

Recommended Text:

Complex Variables and Applications, James Ward Brown, Ruel V. Churchill, McGraw – Hill International Edition(2009)

Reference Books:

1. Functions of a complex variable, J.K.Goyal , K.P. Gupta(18th Revised), Enlarged Edition 2004, Pragathi Prakashan Publishers, Meerut, UP.
2. P. Duraipandian and Laxmi Duraipandian(1976), Complex Analysis, Emerald Publishers, Chennai.
3. S.Ponnusamy(2000)Foundations of Complex Analysis, Narosa Publishing House, New Delhi.
4. Murray R. Spiegel(2005), Theory and Problems of Complex Variable, Tata-McGraw Hill Edition, New Delhi.

SEMESTER –V MECHANICS – II EMT512**UNIT – I: NEWTON'S LAW OF MOTION**

Work, Power, Energy, Principle of Work and Energy. Rectilinear motion with uniform acceleration. Simple harmonic motion simple problems.

UNIT – II

Motion of the projectile, Nature of Trajectory, Results pertaining to the motion of the projectile, Range on an inclined plane. Simple problems.

UNIT – III

Impulsive Force, impulse, Newton's experimental law, Direct and oblique impact of two smooth spheres. Impact of smooth sphere on a fixed smooth plane. Simple problems.

UNIT – IV

Central forces and Central orbits, Equation of Central orbit, Finding law of force and speed of a given orbit, Finding the orbit given the law of force. Simple Problems

UNIT – V

Moment of inertia of simple bodies, theorems of Parallel and perpendicular axes, movement of inertia of triangular lamina, Circular lamina, Circular ring, Right Circular Cone, Sphere [Solid and Hollow]. Simple problems.

Recommended Texts

P.Duraipandian, Lakshmi Duraipandian and Muthamizh Jayapragasam [2006] Mechanics 6th revised Edition S.Chand & Co, New Delhi.

Reference Books

1. A.V.Dharmapadam, [1991] Mechanics S.Viswanathan and Co. Chennai.
2. S.L.Loney, [1982] Elements of Dynamics, Macmillan India, Delhi.
3. M.K.Venkataraman, [1990] Dynamics, Agasthier Book Depot, Trichy- 1.
4. P.N.Chatterjee. [1992] Dynamics. A Rajhans Publication, (19th Edn) .
5. Joseph F.Shelley [2005] Vector Mechanics for Engineers Vol-I: Dynamics, Tata McGraw Hill Edition, New Delhi

SEMESTER –V OPERATIONS RESEARCH –I EMT513**UNIT – I**

O.R. –Definition –scope – different phases –limitation-applications-Linear programming problem –Mathematical formulation of the problem – Graphical solution method – simple method – Simplex Algorithm.

UNIT –II

Artificial Variable techniques – Big – M method – two phase method – Algorithm and problems- Duality – Primal and – dual relation – dual simplex method- Algorithm and problems.

UNIT –III

Transportation problem – Mathematical formulation – The transportation table – The Transportation Algorithm – Degeneracy in transportation problem – unbalanced transportation problem.

UNIT – IV

The Assignment problem –Assignment algorithm – unbalanced Assignment problems- maximization case in assignment problem –special cases in assignment problem- Travelling Salesman problems.

UNIT – V

Sequencing problem – n jobs through 2 machines, n jobs through 3 machines – two jobs through m machines-optimal sequence algorithm and problems.

Recommended Text

Gupta P.K. and Hira D.S., [2000] Problems in Operations Research, S. Chand & Co. Delhi.

Reference Books

1. Kanti Swaroop, Gupta P.K. and Manmohan, [2002] Problems in Operation Research, Sultan Chand & Sons.
2. Taha H. A. [2003] Operations Research, Macmillan Publishing Company, New York.
3. P.R. Vittal [2003] Operations Research, Margham Publications, Chennai.
4. J.K. Sharma, [2001] Operations Research: Theory and Applications Macmillan, Delhi.
5. S. J. Venkatesan, Operations Research, J. S publishes, Cheyyar, 604 407.

SEMESTER –VI LINEAR ALGEBRA MT614**UNIT - I : VECTOR SPACES**

Definition and examples – linear dependence and independence;

UNIT – II: VECTOR SPACES [CONTD]

Dual space – inner product spaces.

UNIT – III LINEAR TRANSFORMATION

Algebra of linear transformations – characteristics roots;

UNIT – IV : LINEAR TRANSFORMATION [CONTD]

Matrices, canonical forms: triangular forms.

UNIT – V: LINEAR TRANSFORMATION [CONTD]

Trace and Transpose, Determinants

Recommended Text:

I.N.Herstein. [1989] Topics in Algebra . Wiley Eastern Ltd. New Delhi.

Chapter – 4: Sections 4.1, 4.2, 4.3, 4.4, Chapter – 6: Sections 6.1, 6.2, 6.3, 6.4, 6.8, 6.9

Reference Books

1. S.Arumugam.[2004] Modern Algebra. Scitech Publications, Chennai.
2. J.B.Fraleigh [1987]. A First Course in Algebra [3rd edition] Addison Wesley, Mass. [Indian Print]
3. Lloyd R.Jaisingh and Frank Ayres,Jr. [2005] Abstract Algebra, [2nd edition], Tat McGraw Hill, New Delhi.
4. M.L.Santiago[2002] Modern Algebra, Tat McGraw Hill, New Delhi
5. Surjeet Singh and Qazi Zameeruddin.[1982] Modern algebra. Vkas Publishing House Pvt.Ltd. New Delhi.

SEMESTER –V REAL ANALYSIS-II MT615**UNIT – I: CONNECTEDNESS**

More about Open Sets – Connected Sets – Bounded Sets and Totally Bounded Sets

Ch. 6.1 to 6.4

UNIT –II: COMPLETENESS, COMPACTNESS

Complete Metric Spaces – Compact Metric Space – Continuous Functions on Compact Metric Spaces – Continuity of Inverse Functions

Ch. 6.4 to 6.7

UNIT – III: RIEMANN INTEGRATION

Definition of the Riemann Integral – Properties of the Riemann Integral – Derivatives – Rolle's Theorem

Ch. 7.2, 7.4, 7.5, 7.6 [omit sections 7.3]

UNIT – IV: IMPROPER RIEMANN INTEGRATION

The Law of the Mean – Fundamental Theorem of Calculus – Improper Integrals – Cauchy's Principle Value.

Ch. 7.7, 7.8, 7.9 and 7.10

UNIT –V: TAYLOR'S THEOREM

Taylor's Theorem: Taylor's Formula with Different Forms of Remainder – The Binomial Theorem - L' Hospital Rule.

Ch. 8.5, 8.6 and 8.7 [omit section 8.1 to 8.4]

Recommended Text

R.Goldberg. [2000] Methods of Real Analysis. Oxford & IBH Publishing Co., New Delhi.

Reference Books

1. Tom M. Apostol [1974]. Mathematical Analysis, 2nd Edition, Addison – Wesley, New York.
2. Bartle, R.G. and Shebert [1976] Real Analysis, John Wiley & Sons Inc., New York.
3. Malik, S.C and Savitha Arora [1991] Mathematical Analysis Willy Eastern Ltd, New Delhi.

SEMESTER –VI COMPLEX ANALYSIS-II MT616

Unit I: Simply connected domains – Multiply connected domains – Cauchy integral's formula – An extension of Cauchy integral's formula – Some consequences of the extension – Liouville's theorem and the fundamental theorem of Algebra – Maximum modulus principle.

Chapter: 4 Sections 48,49,50,51,52,53,54.

Unit II: Convergence of sequences – Convergence of series – Taylor's Series – Proof of Taylor's theorem – Examples – Laurent Series – Proof of Laurent's Theorem – Examples – Uniqueness of Series representations.

Chapter: 5 Sections 55, 56, 57,58,59,60,61,62,66.

Unit III: Isolated singular points – Residues – Cauchy's Residue Theorem – Residue at infinity – The three types of isolated singular points – Residues at poles – Examples – Zeros of an analytic function – Zeros and poles.

Chapter: 6 Sections 68, 69, 70,71,72,73,74,75,76.

Unit IV: Evaluation of improper integrals – Examples – Improper integrals from Fourier Analysis – Jordan's lemma – Definite integrals involving sines and cosines – Argument principle – Rouché's Theorem.

Chapter: 7 Sections 78,79,80,81,85,86,87.

Unit V: Linear transformations – The transformation $\omega = \frac{1}{z}$ - Linear fractional transformations – implicit form – Mappings of the upper half plane (Omit examples) Conformal mapping: Preservation of angles

Chapter:8 Sections 90,91,93,94,95 & Chapter:9 Section 101

Recommended Text:

Complex Variables and Applications, James Ward Brown, Ruel V. Churchill, McGraw – Hill International Edition (2009).

Reference Books:

1. Functions of a complex variable, J.K.Goyal , K.P. Gupta (18th Revised), Enlarged Edition 2004, Pragathi Prakashan Publishers, Meerut, UP.
2. P. Duraipandian and Laxmi Duraipandian (1976), Complex Analysis, Emerald Publishers, Chennai.
3. S.Ponnusamy (2000) Foundations of Complex Analysis, Narosa Publishing House, New Delhi.
4. Murray R. Spiegel (2005), Theory and Problems of Complex Variable, Tata-McGraw Hill Edition, New Delhi.

SEMESTER –VI THEORY: PROGRAMMING IN C LANGUAGE EMT617**UNIT –I**

C Constants, variables, Data-type, Declaration of variables, assigning values to variables.

UNIT – II: OPERATORS:

Arithmetic, Relational, Logical, Assignment, increment and Decrement, Conditional, Arithmetic expression, Evaluation of expression, Precedence of arithmetic operators, Formatted input and Output

UNIT – III: OPERATORS AND ARRAYS

Decision making and branching If, Simple if, If else, Nesting of if-else, Else-if ladder, Switch statement, the ?: operator, Go to statement. Decision making with looping: While, Do, For statement, Jumps in loops. Arrays: 1 - dimensional array, 2 – dimensional array, Multi-dimensional arrays.

UNIT –IV: USER-DEFINED FUNCTION

Need for User-defined function, Multi-function program, the form of C-Function, Return Value and their types. Structures and Unions: Structure definition, Structure initialization, Comparison of structure variables, arrays of structures, arrays within structures, structure within structures.

UNIT – V: POINTERS

Understanding Pointers, Accessing the address of a variable, Declaring and initializing of pointers, accessing a variable through its pointer, Pointer expression. Pointers and arrays, Pointers and structures. Files: Defining and opening a file, closing a file.

Recommended Text

E. Balagurusamy. [1996] Programming in ANSI C. Tata McGraw Hill.

Reference Books

1. V.Rajaraman. [1995] Computer Programming In C. Prentice Hall. New Delhi.
2. H. Schildt, Osborne. [1994] Teach Yourself C McGraw Hill, New York. Mullish Cooper. The Spirit of C – An Introduction to Modern Programming. Jaico Publishing House. Delhi. 1998.
3. Yashavant Kanetkar, Let Us C, 6th edition BPB publication.

SEMESTER –VI OPERATIONS RESEARCH - II EMT618**UNIT – I**

Game Theory - Two persons zero sum game – maximum minimax principle – Saddle points – Games without saddle points – Mixed Strategies – Graphical solution of $2 \times n$ and $m \times 2$ games – Dominance property. Section: 9.10, 9.11, 9.12, 9.13, 9.15, 9.16, 9.17, 9.18, 9.19, 9.20.

UNIT –II

Integer Programming – Gomory's All – I.P.P. method – All – I.P.P. Algorithm – The Branch and Bound Technique. Sections : 6.10 – 4 subdivision 6.10 – 5 , 6.10 – 6 and 7.

UNIT –III

Queuing Theory – Basic concepts – Steady state analysis of M/M/1 and M/M/N systems with finite and infinite capacities. Sections : 10.2 , 10.3, 10.4, 10.7, 10.9 (2) (5) (7) , 10.10.

UNIT – IV

Inventory models – EOQ model [a] Uniform demand rate infinite production rate with no shortages[b] Uniform demand rate finite production rate with no shortages – Inventory control with Price Breaks.

Sections : 12.2,12.3,12.5(1) (3) and (7)

UNIT – V

Network scheduling by CPM/PERT – project network diagram – Critical path method [CPM] – PERT Computations. Sections : 14.1, 14.6 (2) , 14.8 , 14.9 , 14.10 , 14.12 , 14.13.

Recommended Text

P.K. Gupta and D.S. Hira., [2000] Problems in Operations Research, S. Chand & Co. Delhi.

Reference Books:

1. Kanti Swaroop, Gupta P.K. and Manmohan, [2002] Problems in Operation Research, Sultan Chand & Sons.
2. Taha H. A. [2003] Operations Research, Macmillan Publishing Company, New York.
3. P.R. Vittal [2003] Operations Research, Margham Publications, Chennai.
4. J.K. Sharma, [2001] Operations Research: Theory and Applications Macmillan, Delhi.
5. S. J. Venkatesan, Operations Research, J. S publishes, Cheyyar, 604 407.
6. Ravindran A., Philips D. T. and Solberg J. J., [1987] Operations Research, John Wiley & Sons., New York.

SEMESTER –VI PRACTICE: COMPUTER PRACTICAL IN C LANGUAGE MTP601

- 1) Assigning the ASCII value.
- 2) Square of numbers: Using For loop, While loop
- 3) Square of numbers: Do- while loop, Go to statement.
- 4) Characters between two given characters.
- 5) Number of Vowels and consonants.
- 6) Three – dimensional matrix
- 7) Prime numbers between two give numbers
- 8) Fibonacci series
- 9) Factorial numbers
- 10) Power of a value
- 11) Interchange sort
- 12) Shell sort
- 13) Student record.

Reference Books

The spirit if C, Mullish Cooper, Indian edition by jaico publishers, 1987. Teach yourself C, Herbert Schildt, Obsbome Megrawhill, 2nd edition 1994 Programming in C, Schaum series