

SYLLABUS

B.Sc.(Computer Science)

பகுதி I - தமிழ்

முதலாம் ஆண்டு- முதற்பருவம்

அலகு -1 தமிழ் இலக்கிய வரலாறு

1.நாட்டுப்புறப் பாடல்கள்,கதைகள்,கதைப்பாடல்கள்,பழமொழிகள், விடுகதைகள்.

2.உரைநடை இலக்கிய வரலாறு

சிறுகதைகள் தோற்றமும் வளர்ச்சியும்

புதினங்கள் தோற்றமும் வளர்ச்சியும்

3. கவிதை இலக்கிய வரலாறு

மரபுக் கவிதைகள் தோற்றமும் வளர்ச்சியும்

புதுக் கவிதைகள் தோற்றமும் வளர்ச்சியும்

4. நாடக இலக்கியத்தின் தோற்றமும் வளர்ச்சியும்

(சிலப்பதிகாரம் முதல் தற்கால நாடகம் வரை)

அலகு -2

1. வாய்மொழி இலக்கியம்: நாட்டுப்புறப் பாடல்கள்

தாலாட்டு, காதல், ஒப்பாரி

2.புதுமைப்பித்தன் சிறுகதைகள்

கடவுளும் கந்தசாமிப் பிள்ளையும், செல்லம்மாள், மனித யந்திரம், ஆற்றங்கரைப் பிள்ளையார், ஒருநாள் கழிந்தது.

அலகு -3

1.பாரதியார்; காணிநிலம் வேண்டும், நல்லதோர் வீணை

2.பாரதிதாசன்; தமிழ்க்காதல், தமிழ் வளர்ச்சி, எந்நாளோ?

3.கவிமணி தேசிய விநாயகம் பிள்ளை: தன் வரலாறு கூறுதல்.

அலகு -4

1.சிற்பி: முள்.....முள்.....முள்....

2.அப்துல் ரகுமான்: குருடர்களின் யானை

3. ஈரோடு தமிழன்பன்: ஒரு வண்டி சென்ரியு

4. இரா.மீனாட்சி : சிற்ப் எழுத்து

5. வைரமுத்து: குண்டுசி

6. பழனி பாரதி : நான்கு மரக்கன்றுகள்

அலகு - 5

பம்மல் சம்பந்த முதலியார் - சந்திரஹரி

அலகு - 6

மொழிப்பயிற்சி

1.பொருந்திய சொல் தருதல்

2. மரபுத் தொடர்கள்
- 3.கலைச்சொற்கள்
4. நேர்காணல்

PART II - ENGLISH

SEMESTER I

Text - **Catalyst A Multilevel English Refresher** by Anu Chitra Publications Rs. 95/-

Unit – I- Preparatory Lessons

1. Competition Matters - *Suzanne Sievert*
2. A Personal Crisis May Change History - *Dr. A.P.J. Abdul Kalam*
3. Why Preserve Biodiversity - *Prof. D.Balasubramanian*
4. A Call to Action - *Adapted from Hillary Rodham Clinton's address.....*

Unit – II -Prose

1. My Greatest Olympic Prize - *Jesse Owens*
2. If You are Wrong Admit it - *Dale Carnegie*
3. Monday Morning - *Mark Twain*
4. The Unexpected - *Robert Lynd*

Unit - III Poetry

1. Pulley or Gift of God - *George Herbert*
2. La Belle Dame Sans Merci - *John Keats*
3. The Night of the Scorpion - *Night of the Scorpion*
4. The Death of a Bird - *A.D. Hope*

Unit - IV Short Story

1. Mrs. Packletide's Tiger - *Saki*
2. A Snake in the Grass - *R.K. Narayan*
3. Three Questions - *Leo Tolstoy*
4. The Gift of the Magi - *O. Henry*

Unit - V Grammar

Tense, Aspect, Auxiliaries (Primary and Modal), Negatives, Interrogatives Yes or No, Wh Questions) Tag questions, completing the sentences, Common errors, Synonym, Antonym, Word class, Use in sentences of words. (Refer to the Grammar exercises in the Text Book) and **Part I** from **Spring Board** by Orient Black swan Pvt. Ltd Rs.105/-

Part -I from **Spring Board** by Orient Black Swan Pvt. Ltd Rs.95/-

Sound Right

Introduction to the Sounds of the English Language, Word Stress, Strong and Weak Forms, Sentences Stress and Intonation, Voice Modulation.

PART III

SEMESTER I

CORE PAPER – I – PROGRAMMING IN C

Unit I

C fundamentals Character set - Identifier and keywords - data types - constants - Variables - Declarations - Expressions - Statements - Arithmetic, Unary, Relational and logical, Assignment and Conditional Operators - Library functions.

Unit II

Data input output functions - Simple C programs - Flow of control if, if else, while, do-while, for loop, Nested control structures - Switch, break and continue, go to statements - Comma operator.

Unit III:

Functions –Definition - proto-types - Passing arguments - Recursions. Storage Classes - Automatic, External, Static, Register Variables – Multi-file programs.

Unit-IV:

Arrays - Defining and Processing - Passing arrays to functions – Multi-dimension arrays - Arrays and String. Structures - User defined data types - Passing structures to functions - Self-referential structures – Unions - Bit wise operations.

Unit-V :

Pointers - Declarations - Passing pointers to Functions - Operation in Pointers - Pointer and Arrays - Arrays of Pointers - Structures and Pointers - Files : Creating , Processing ,Opening and Closing a data file.

Recommended Texts

i.E.Balaguruswamy, 1995,Programming in ANSI C, TMH Publishing Company Ltd.

Reference Books

i.B.W. Kernighan and D.M.Ritchie, 1988,The C Programming Language, 2nd Edition, PHI.

ii.H. Schildt, C,2004, The Complete Reference, 4th Edition, TMH

iii. Gottfried,B.S, 1996,Programming with C, Second Edition, TMH Pub. Co. Ltd., New Delhi

iv. Kanetkar Y., 1999,Let us C, BPB Pub., New Delhi.

SEMESTER I

PRACTICAL – I - PROGRAMMING IN C

I Summation of Series :

1. Sin(x),
2. Cos(x),
3. Exp(x) (Comparison with built in functions)

II String Manipulation :

1. Counting the no. of vowels, consonants, words, white spaces in a line of text and array of lines
2. Reverse a string & check for palindrome.
3. Substring detection, count and removal
4. Finding and replacing substrings

III Recursion :

1. nPr, nCr
2. GCD of two numbers
3. Fibonacci sequence
4. Maximum & Minimum
5. Towers of Hanoi.

IV Matrix Manipulation :

1. Addition & Subtraction
2. Multiplication
3. Transpose, and trace of a matrix
4. Determinant of a Matrix

V Sorting and Searching :

1. Insertion Sort
2. Bubble Sort
3. Linear Search
4. Binary Search

SEMESTER I

ALLIED PAPER –I - MATHEMATICS -I

UNIT – I - ALGEBRA and NUMERICAL METHODS:

Algebra: Summation of series - simple problems. Numerical Methods: Operators E, Δ, ∇ , difference tables; Newton-Raphson method; Newton's forward and backward interpolation formulae for equal intervals, Lagrange's interpolation formula. Chapter 2, Section 2.1.3, 2.2, 2.2.1, 2.3, 2.3.3 Chapter 3, Section 3.4.1 and Chapter 5, Section 5.1 and 5.2.

UNIT- II - MATRICES:

Symmetric, Skew-Symmetric, Orthogonal, Hermetian, Skew-Hermetian and Unitary matrices. Eigen values and Eigen-vectors, Cayley-Hamilton theorem (without proof) – verification- Computation of inverse of matrix using Cayley - Hamilton theorem. Chapter 4, Section 4.1.1 to 4.1.6, 4.5, 4.5.2, 4.5.3.

UNIT- III - THEORY OF EQUATIONS:

Polynomial equations with real coefficients, irrational roots, complex roots, symmetric functions of roots, transformation of equation by increasing or decreasing roots by a constant, reciprocal equation. Newton's method to find a root approximately - simple problems. Chapter 3, Section 3.1 to 3.4.1

UNIT IV - TRIGONOMETRY:

Expansions of $\sin(n\theta)$ and $\cos(n\theta)$ in a series of powers of $\sin\theta$ and $\cos\theta$ - Expansions of $\sin n\theta$, $\cos n\theta$, $\tan n\theta$ in a series of sines, cosines and tangents of multiples of " θ " - Expansions of $\sin\theta$, $\cos\theta$ and $\tan\theta$ in a series of powers of " θ " – Hyperbolic and inverse hyperbolic functions - Logarithms of complex numbers. Chapter 6, Section 6.1 to 6.5

UNIT V - DIFFERENTIAL CALCULUS:

Successive differentiation, n th derivatives, Leibnitz theorem (without proof) and applications, Jacobians, Curvature and radius of curvature in Cartesian co-ordinates, maxima and minima of functions of two variables, Lagrange's multipliers - Simple problems Chapter 1, Section 1.1 to 1.3.2 and 1.4.3 Content and treatment as in Allied Mathematics Volume I and II by P. Duraipandian and S. Udayabaskaran, S. Chand Publications

Book for Reference:

1. S. Narayanan and T.K. Manickavasagam Pillai – Ancillary Mathematics, S. Viswanathan Printers, 1986, Chennai.
2. Allied Mathematics by Dr. A. Singaravelu.

SEMESTER I

NON- MAJOR ELECTIVE -I -MS ACCESS

UNIT- I :

Introduction to database - What is a Database , Why use a Relational Database, Overview of database design – Data Normalization(Determining tables, Determining Fields, Determining Relationships)Integrity Rules (Primary/Foreign Key, One-to-Many, Many-to-Many, One-to-One) Introduction to MS Access .

UNIT- II

: Create a Table in MS Access - Data Types, Field Properties , Fields:names, types, properties-- default values, format, caption, validation rules Data Entry Add record delete record and edit text Sort, find/replace, filter/select, re-arrange columns, freeze columns . Edit a Tables- copy, delete, import, modify table structure find replace.

UNIT – III :

Setting up Relationships- Define relationships, add a relationship, set a rule for Referential Integrity, change the join type, delete a relationship, save relationship Queries & Filter – difference between queries and filter , filter using multiple fields AND,OR, advance filter Queries create Query with one table , find record with select query, find duplicate record with query , find unmatched record with query, run query ,save and change query.

UNIT – IV :

Introduction to Forms Types of Basic Forms: Columnar, Tabular, Datasheet, Main/Subforms, add headers and footers, add fields to form, add text to form use label option button, check box ,combo box, list box Forms Wizard, Create Template.

UNIT – V :

Introduction to Reports , Types of Basic Reports: Single Column,Tabular Report Groups/Total, single table report multi table report preview report print report, Creating Reports and Labels, Wizard

Reference Books

1. A first course in Computers , Sanjay Saxena, Vikas Publishing house PvtLtd.,New Delhi
2. Ms Office XP complete BPB Publications
3. Ms Access 2002 fast and easy by FaithWempen PHI

SEMESTER – I

NON- MAJOR ELECTIVE -I -WEB APPLICATIONS

Unit – I :

Basics of Adobe Photoshop – Getting started with Photoshop – title bar – Menu bar - option bar – tool box – screen modes.

Unit – II

Introduction to digital Image editing , Create your own painted images – Edited scanned images – import rendered visuals – Working with images and colors

Unit – III :

Using tools and palettes – selection tools, Painting and editing tools – menu commands – creating type – change the type settings – styles

Unit – IV :

Methods and Techniques of Adobe photoshop - Layers – working with layers – merging layers – linking layers –transforming layers and layer effects- filters

Unit – V :

Getting started with Dreamweaver – creating web applications with Dreamweaver.

Books for Reference :

1. Photoshop – The Complete reference – Greenberg – TMH
2. Dream Weaver – Complete reference

SEMESTER I

NON- MAJOR ELECTIVE -I- FLASH

Unit – I :

Introduction to Flash – simple drawing techniques – adding some easy animations – learning the tools - buttons

Unit – II :

Controlling drawing object – creating symbols – instances- making use of Library – painting – motion guide path.

Unit – III :

Flash tweening – using masking techniques – layers and frames.

Unit – IV :

Overview of animation -Animating your production – sound – video - publish flash movies – importing.

Unit – V : Introduction to scripting - Action script applications

Books for Reference :

1. Mr. K. K. Thyagarajan, A.P., . B. Anbumani, K.K, “Flash 2004” .4
2. Robert Reinhardt, Flash 5 Bible

SEMESTER I

NON- MAJOR ELECTIVE -I -HTML

UNIT - I :

Introduction :Web Basics: What is Internet – Web browsers – What is Web page – HTML
Basics: Understanding tags.

UNIT- II :

Tags for Document structure(HTML, Head, Body Tag). Block level text elements: Headings
paragraph(<p> tag) – Font style elements: (bold, italic, font, small, strong, strike, big tags)

UNIT - III:

Lists: Types of lists: Ordered, Unordered – Nesting Lists – Other tags: Marquee, HR, BR-
Using Images – Creating Hyperlinks.

UNIT - IV :

Tables: Creating basic Table, Table elements, Caption – Table and cell alignment – Rowspan,
Colspan – Cell padding.

UNIT - V :

Frames: Frameset – Targeted Links – No frame – Forms : Input, Textarea, Select, Option.

Recommended Texts

(i). HTML Complete Reference, Teach Yourself Web Publishing with HTML – Laura
Lemay.

Reference Books

(i). HTML – E Stephen Mack, Janan Platt.

PART IV

SOFT SKILLS – SEMESTER I

Essentials of Language and Communication – Level I

Unit I

Recap of Language Skills – Speech, Grammar, Vocabulary, Phrase, clause, sentence, Punctuation.

Unit II

Fluency building

What is fluency – Why is fluency important – Types of fluency – Oral fluency – Reading fluency, Writing fluency – Barriers of fluency – How to develop fluency.

Unit III

Principles of communication: LSRW in communication.

What is meant by LSRW Skills – Why it is important – How it is useful – How to develop the skills? Oral – Speaking words, articulation, speaking clearly. Written communication – Generating ideas/ gathering data organizing ideas, Setting goals, Note taking, Outlining, Drafting, Revising, Editing and Proof reading. Non verbal communication – Body language, Signs and symbols, Territory/Zone, Object language.

RECOMMENDED TEXTS

- Hewing, Martin. 1999. Advanced English Grammar: A Self-study Reference and practice Book for South Asian Students. Reprint 2003. Cambridge University Press. New Delhi.
- Lewis, Norman. 1991. Word Power Made Easy. Pocket Books.
- Hall and Shepherd. The Anti-Grammar Book: Discovery Activities for Grammar Teaching Longman.
- Powell. In Company. MacMillan. Cotton, et al. Market Lader. Longman.

SEMESTER II

முதலாம் ஆண்டு- இரண்டாம் பருவம்

பகுதி I - தமிழ்

அலகு -1

தமிழ் இலக்கிய வரலாறு

1. சிற்றிலக்கிய வரலாறு
2. கிறித்துவ இலக்கிய வரலாறு
3. இசுலாமிய இலக்கிய வரலாறு

அலகு -2

1. நந்திக் கலம்பகம்
2. முத்தொள்ளாயிரம்
3. தமிழ் விடு தூது (முதல் 36 கண்ணிகள்)

அலகு -3

1. திருக்குற்றாலக் குறவஞ்சி (குறத்தி மலைவளம் கூறுதல்)
2. முக்கூடல் பள்ளு (நாட்டு வளம்)
3. இயேசு பிரான் பிள்ளைத்தமிழ் (செங்கீரைப்பருவம் முதல் 5 செய்யுள்கள்)

அலகு -4

நளவெண்பா (கலி நீங்கு காண்டம்)

அலகு -5

சீறாப்புராணம் (மானுக்குப் பிணை நின்ற படலம்)

அலகு -6

மொழிப் பயிற்சி

இலக்கணக் குறிப்புகள் : பண்புத்தொகை, வினைத்தொகை, உம்மைத்தொகை, உருவகம், உவமைத்தொகை, வேற்றுமைத்தொகை, அன்மொழித்தொகை

SEMESTER II

PART II – ENGLISH

Text - **Panorama** *English for Communication* by Emerald Publishers Rs.89/-

Unit – I

Prose

1. The Refugee - *K.A. Abbas*
2. The Lion and The Lamb - *Leonard Clark*
3. The Lady or the Tiger? - *Frank R. Stockton*
4. The Sky is the limit - *Kalpna Chawla*

Unit – II

Poems

1. The Solitary Reaper - *William Wordsworth*
2. Gift - *Alice Walker*
3. O What is that Sound - *W. H. Auden*
4. Ode to the West Wind - *P.B. Shelly*

Unit – III

Short Stories

1. The Fortune-Teller - *Karel Capek*
2. The Postmaster - *Rabindranath Tagore*
3. The Model Millionaire - *Oscar Wilde*
4. The Dying Detective - *Arthur Canon Doyle*

Unit – IV

One-Act Plays

1. The Death Trap - *Saki (H.H. Munro)*
2. The Dear Departed: A Comedy in ONE-ACT- *Stanley Houghton*
3. The Sheriff's Kitchen - *Ronald Gow*
4. The Anniversary - *Anton Chekkov*

Unit – V

Communicative Grammar

Refer to the Text **Panorama** and **Part III** from **Spring Board** by Orient Blackswan Pvt. Ltd Rs.105/-

Watch Your English

Grammar, Framing Questions, Common Errors, More Grammar, Word Building: Prefixes and Suffixes.

Part -III from **Spring Board** by Orient Black Swan Pvt. Ltd Rs.95/- and Watch Your English from **Panorama** Grammar, Framing Questions, Common errors, More Grammar, Word Building: Prefixes and Suffixes.

PART III

SEMESTER II

CORE PAPER II - DIGITAL ELECTRONICS & MICROPROCESSORS

Unit I:

Binary Systems & Code conversion, Boolean Algebra & Logic Gates – Truth Tables – Universal Gates – Simplification of Boolean functions: SOP, POS methods – K-map, – Combinational Logic: Adders & Subtractors – Multiplexer – Demultiplexer - Encoder – Decoder.

Unit-II:

Sequential Logic: RS, Clocked RS, D, JK, Master Slave JK, T Flip-Flops – Shift Registers – Types of Shift Registers – Counters: Ripple Counter – Synchronous Counters – Up-Down Counter.

Unit III:

Introduction to Microprocessors, Microcomputers, and Assembly Language – Microprocessor Architecture and Its Operations – Memory – I/O Devices – 8085 MPU – Introduction to 8085 Instructions – Data Transfer Operations – Addressing Modes - Arithmetic, Logic and Branch Operations – Writing Assembly Language Programs .

Unit-IV:

Time Delay Programs: Time Delay Using One Register – Using a Register Pair – Using a Loop within Loop Technique – Counter Design with Time Delay – Stack and Subroutines – BCD to Binary Conversion and Vice-versa – BCD to HEX Conversion and Vice-versa – Binary to ASCII Conversion and Vice-versa – BCD Addition and Subtraction .

Unit-V :

8085 Interrupt – Vectored Interrupts – Interfacing I/O Devices: Basic Interfacing Concepts – Interfacing Input Devices- Memory-Mapped I/O.

Recommended Texts

- i. M. Morris Mano, 2005, Digital Logic and Computer Design, Prentice-Hall of India Pvt. Ltd.
- ii. Ramesh S. Gaonkar, 1999, Microprocessor Architecture, Programming, and Applications with the 8085, 5th Edition, Penram International Publishing (India) Pvt. Ltd.

Reference Books

- i. D. P. Leach and A. P. Malvino, 2002, Digital Principles and Applications, 5th Edition, Tata McGraw, Hill Publishing Co. Ltd.
- ii. V. Vijayendran, 2004, Digital Fundamentals, S. Viswanathan (Printers & Publishers) Pvt. Ltd.

- iii. V. Vijayendran ,2004, Fundamentals of Microprocessor – 8085, S. Viswanathan (Printers & Publishers) Pvt. Ltd.
- iv. N. K. Srinath,2005, 8085 Microprocessor Programming and Interfacing - ,Prentice-Hall of India Pvt. Ltd.

SEMESTER – II

PRACTICAL II - DIGITAL ELECTRONICS & MICROPROCESSORS LAB

DIGITAL ELECTRONICS

1. Verification of Truth Table for AND, OR, NOT, NAND, NOR and EX-OR gates.
2. Realisation of NOT, AND, OR, EX-OR gates with only NAND and only NOR gates.
3. Karnaugh Map Reduction and Logic Circuit Implementation.
4. Verification of DeMorgan's Law.
5. Implementation of Half-Adder and Half-Subtractor.
6. Implementation of Full-Adder and Full-Subtractor.
7. Four Bit Binary Adder
8. Four Bit Binary Subtractor using 1's and 2's Complement.

MICROPROCESSOR:

1. 8 Bit Addition and Subtraction.
2. 16 Bit Addition.
3. BCD Addition .
4. BCD Subtraction.
5. 8 Bit Multiplication.
6. BCD Multiplication.
7. 8 Bit Division.
8. Searching for an Element in an Array.
9. Sorting in Ascending and Descending Orders.
10. Finding Largest and Smallest Elements from an Array.
11. Reversing Array Elements.
12. Block Move.

SEMESTER II

ALLIED PAPER – II - MATHEMATICS -II

Unit-I -INTEGRAL CALCULUS:

Bernoulli's formula. Reduction formulae - $\int_0^{\pi/2} \sin^n x dx$, $\int_0^{\pi/2} \cos^n x dx$, $\int_0^{\pi/2} \sin^m x \cos^n x dx$ (m, n being positive integers), Fourier series for functions in $(\alpha, \alpha+2\pi)$, Half range sine and cosine series. Chapter 2, Section 2.7 and 2.9 Chapter 4, Section 4.1 to 4.2

Unit-II - DIFFERENTIAL EQUATIONS

Ordinary Differential Equations: second order non- homogeneous differential equations with constant coefficients of the form $ay'' + by' + cy = X$ where X is of the form $e^{\alpha x} \cos \beta x$ and $e^{\alpha x} \sin \beta x$ Partial Differential Equations: Formation, complete integrals and general integrals, four standard types and solving Lagrange's linear equation $Pp + Qq = R$ Chapter 5, Section 5.2 Chapter 6, Section 6.1 to 6.4

Unit-III - LAPLACE TRANSFORMS:

Laplace transformations of standard functions and simple properties, inverse Laplace transforms, Application to solution of linear differential equations up to 2nd order- simple problems. Chapter 7, Section 7.1.1 to 7.1.4 and 7.2 to 7.3

Unit – IV - VECTOR DIFFERENTIATION

Introduction, Scalar point functions, Vector point functions, Vector differential operator ∇ , Gradient, Divergence, Curl, Solenoidal, irrotational, identities. Chapter 8, Section 8.1 to 8.4.4

Unit – V- VECTOR INTEGRATION

Line, surface and volume integrals, Gauss, Stoke's and Green's theorems (without proofs). Simple problems on these. Chapter 8, Section 8.5 to 8.6.3 Content and treatment as in Allied Mathematics Volume I and II by P. Duraipandian and S. Udayabaskaran, S. Chand publications

Book for Reference

S. Narayanan and T.K. Manickavasagam Pillai – Ancillary Mathematics, S. Viswanathan Printers, 1986, Chennai.

Allied Mathematics by Dr. A. Singaravelu.

SEMESTER II

NON- MAJOR ELECTIVE -II - MS ACCESS LAB

1. Pay Bill
2. Electricity Bill
3. Mark list preparation of a student
4. Inventory report preparation
5. Invoice report preparation
6. Income tax preparation

SEMESTER II

NON- MAJOR ELECTIVE -II -WEB APPLICATIONS LAB

1. Working with the clone stamp tool
2. Drawing Watch using custom shapes
3. Testing lab mode
4. Using multichannel mode
5. Using the sponge Tool
6. Antique framing
7. Creating a supernova
8. Adding an arrowhead.
9. Isolating a Complex Image
10. Removing an element from an image
11. Captain kirk myopia effect
12. Adjusting the focus
13. Creating an edge mask
14. Applying Transformations
15. Correcting brightness and contrast.

SEMESTER II

NON- MAJOR ELECTIVE -II -HTML LAB

1. Write a script to create an array of 10 elements and display its contents.
2. Create a simple calculator using form fields. Have two fields for number entry and one field for the result. Allow the user to be able to use plus, minus, multiply and divide.
3. Create a document and add a link to it. When the user moves the mouse over the link, it should load the linked document on its own. (user is not required to click on the link)
4. Create a document which opens a new window without a toolbar, address bar or a status bar that unloads itself after one minute.
5. Design an HTML page that includes document structure tags, title, line break, multiple headings and link to e-mail address.
6. Create an HTML file which is the main page with an image and some text messages along with hyperlinks which is linked to various pages. The navigation should be such that the links take you to the appropriate page and then back to the main page.
7. Create a HTML page to demonstrate the usage of Frames. Choose the content of the page on your own.
8. Design an application for pay slip through HTML forms.

SEMESTER II

NON- MAJOR ELECTIVE -II -FLASH LAB

1. Drawing a Semi Circle by snap tool, a sine wave, 24 spokes on a wheel, five pointed star using , a flower by changing the center coordinates
2. Placing a text along a curved path.
3. Changing on objects shape using shape tweening, text tweening,
4. Application using buttons, animating the button
5. Tweening a using the shape hints, motion tweening
6. An application to show the masking effect in Flash
7. Slide show presentation (minimum 5 slides)
8. Creating smudge effect for an image using Hybrid Tweening.
9. Applications using Action scripts
10. Usage of textbox, dynamic text box, buttons with action scripts

SEMESTER II

PART IV- SOFT SKILLS

Essentials of Language and Communication – Level – II

Unit-I - Speaking Skills

Formal and Informal Conversation – Conversation in the work place – Interviews – Public Speech – Lectures.

Unit – II - Listening Skill

Comprehending – Retaining – Responding – Tactics – Barriers to Listening – Overcoming listening barriers – Misconception about listening.

Unit – III - Reading Skill

Acquiring reading – Reading Development – methods teaching – Reading difficulties.

Unit – IV -Writing skill

Note-making – CV's – Report writing, copy writing, Agenda – Minutes – Circular – Essay writing on any current issues – paragraph – Essay writing, Writing Research papers – Dissertation.

Unit- V - Business Correspondence

Meaning of Business correspondence – Importance of Business Correspondence essential qualities of a business letters. Different types of business letters – cover letter, thank you letters, message through email and Fax, Acceptance letters, rejection letters, and withdrawal letters.

RECOMMENDED TEXTS:

- Minippally, Methukutty. M. 2001. Business Communication Strategies. 11th Reprint. Tata McGraw – Hill. New Delhi.
- SasiKumar. V and P.V. Dharmija. 1993. Spoken English: A Self-Learning Guide Conversation Practice. 34th reprint. Tata McGraw – Hill. New Delhi.
- Swets, Paul. W. 1983. The Art of Talking So That People Will Listen: Getting Through to Family, Friends and Business Associates. Prentice Hall Press. New York.
- John, Seely The Oxford guide to writing and speaking. Oxford U P, 1998, Delhi. The Process of Writing: Planning and Research, Writing, Drafting and Revising.

SEMESTER III

பகுதி I - தமிழ்

இரண்டாம் ஆண்டு- மூன்றாம்பருவம்

அலகு -1

தமிழிலக்கிய வரலாறு

1. பல்லவர் கால பக்தி இலக்கியங்கள்
2. பிற்காலச் சோழர்காலப் பேரிலக்கியங்கள்
3. காப்பிய இலக்கிய வரலாறு

அலகு -2

1. தேவாரம் - திருநாவுக்கரசர்
2. திருவாசகம் - மாணிக்கவாசகர்
3. நாலாயிரத் திவ்யபிரபந்தம் - ஆண்டாள்

அலகு -3

கம்பராமாயணம்

யுத்த காண்டம் - சும்பகருணன் வதைப்படலம்

அலகு -4

பெரியபுராணம்

(காரைக்காலம்மையார் புராணம்)

அலகு -5

இராமலிங்க அடிகள் - மனுமுறை கண்ட வாசகம்

அலகு -6

மொழிப்பயிற்சி

1. தனியார் நிறுவனத்திற்கு வேலை வாய்ப்பு வேண்டி விண்ணப்பம் எழுதுதல்
2. ஊராட்சி, பேரூராட்சி, நகராட்சி, மாநகராட்சிக்குத் தெருக்குழாய் வேண்டி, வீட்டுக்குள் குடிநீர் இணைப்பு வேண்டி, தெருக்குப்பைகளை அப்புறப்படுத்த வேண்டி, வெறிநாய்களைக்

கட்டுபடுத்த வேண்டி, தெருச்சாலைகளைச் செப்பனிட வேண்டி
..... கடிதம் எழுதுதல்.

SEMESTER III

PART II - ENGLISH

Text - Reflections by Foundation Books Rs.105/-
Inspiring Lives by Maruthi Publications Rs.60/-

Unit – I -Prose

1. Dress in Communication -
2. Fusion Music - Pt. Ravi Shankar
3. About "An Inconvenient Truth" - Davis Guggenheim
4. A Speech - N.R. Narayana Murthy
5. A Speech - Barack Obama
6. Unity of Minds - A.P.J. Abdul Kalam

Unit – II - Poetry

1. The Justice of Peace - Hillari Bellock
2. A Different History - Sujata Bhatt
3. Digging - Seamus Heaney
4. I Love You Mom -
5. Ozymandias of Egypt - Percy Bysshe Shelly
6. Leave this Chanting and Singing and Telling of Beads - Rabindranath Tagore

Unit – III - Short Stories

1. Happy Prince - Oscar Wilde
2. The Story of Stanford -
3. Engine Trouble - R.K. Narayan
4. After Twenty Years - O. Henry
5. Two Gentlemen of Verona - A.J. Cronin
6. The Avenger - Anton Chekhov.

Unit – IV - Biographies from Inspiring Lives

1. Madam Curie
2. Mother Teresa
3. Subrahmanyam Chandrasekhar

4. Dr. Amartya Kumar Sen
5. Gertrude Elion
6. Vikram Sarabhai
7. Charles Chaplin
8. Wangari Maathi

Unit – V - Grammar

Refer to the exercises given in the text and Part -V from Spring Board by Orient Black swan Pvt. Ltd Rs.105/-

Face-to-Face Preparing for an Interview, Win the Game of Life, The First Written Encounter:
Writing Skills.

SEMESTER III

PART III

CORE PAPER III -PROGRAMMING IN C++ AND DATA STRUCTURES

Unit 1: Introduction to C++;

Operators, Manipulators, Expressions and Control Structures in C++; Pointers - Functions in C++ - Main Function - Function Prototyping - Parameters Passing in Functions - Values Return by Functions – Inline Functions - Friend and Virtual Functions

Unit-2: Classes and Objects;

Constructors and Destructors; and Operator Overloading and Type Conversions - Type of Constructors – Function overloading. Inheritance : Single Inheritance - Multilevel Inheritance - Multiple Inheritance - Hierarchical Inheritance - Hybrid Inheritance. Pointers, Virtual Functions and Polymorphism; Managing Console I/O operations.

Unit 3: Working with Files:

Classes for File Stream Operations - Opening and Closing a File - End-of-File Deduction - File Pointers - Updating a File - Error Handling during File Operations - Command-line Arguments. Data Structures: Definition of a Data structure – primitive and composite Data Types, Asymptotic notations, Arrays, Operations on Arrays, Order lists.

Unit-4:Stacks -

Applications of Stack - Infix to Postfix Conversion, Recursion, Maze Problems - Applications, Circular Queue. Singly Linked Application - Representation of a Polynomial, Polynomial Addition; Doubly Linked List - Operations, Applications.

Unit-5 : Trees and Graphs:

Binary Trees - Conversion of Forest to Binary Tree, Operations - Tree Traversals; Graph - Definition, Types of Graphs, Hashing Tables and Hashing Functions, Traversal - Shortest Path; Dijkstra's Algorithm.

RECOMMENDED TEXTS

- i. E. Balagurusamy,1995, Object Oriented Programming with C++, Tata McGraw-Hill Publishing Company Ltd.
- ii..E.Horowitz and S.Shani,1999,Fundamentals of Data Structures in C++ , Galgotia Pub.

REFERENCE BOOKS

- i. Robert Lafore, Object Oriented Programming in Microsoft C++, Galgotia publication.
- ii.. H.Schildt, C++,1998,The Complete Reference-1998-TMH Edition, 1998
- iii.R. Kruse C.L. Tondo and B. Leung ,1997, Data Structures and Program design in C, PHI.
- iii.Cangsam, Augenstein, Tenenbaum,Data Structures using C & C++,PHI
- iv.D.Samantha,2005, Classic Data Structures, PHI,New Delhi

SEMESTER III

PRACTICAL – III -DATA STRUCTURES USING C++

1. Implement PUSH, POP operations of stack using Arrays.
2. Implement PUSH, POP operations of stack using Pointers.
3. Implement add, delete operations of a queue using Arrays.
4. Implement add, delete operations of a queue using Pointers.
5. Conversion of infix to postfix using stack operations
6. Postfix Expression Evaluation.
7. Addition of two polynomials using Arrays and Pointers.
8. Creation, insertion, and deletion in doubly linked list.
9. Binary tree traversals (in-order, pre-order, and post-order) using linked list.
10. Depth First Search and Breadth first Search for Graphs using Recursion.

SEMESTER III

ALLIED PAPER III - STATISTICAL METHODS AND THEIR APPLICATIONS I

UNIT - 1:

Nature and scope of statistical methods and their limitations - Classification, tabulation and diagrammatic representation of various types of statistical data - Frequency curves and Ogives - Graphical determination of percentiles, quantiles and their uses, Lorenz curve.

UNIT - 2:

Sampling from finite population - Simple random sampling, Stratified and systematic random sampling procedures - Estimation mean and total and their standard errors. Concepts of sampling and non-sampling errors.

UNIT - 3:

Measures of location - Arithmetic mean, median, mode, Geometric mean, Harmonic mean and their properties - merits and demerits. Measures of dispersion - Range, mean deviation, quartile deviation, standard deviation, coefficient of variation, skewness and kurtosis - and their properties.

UNIT - 4:

Probability of an event - Finitely additive probability space addition and multiplication theorems - Independence of events - conditional probability - Bayes' theorem.

UNIT - 5:

Bivariate frequency table and its uses - scatter diagram – Correlation and Regression lines - linear prediction - Rank correlation coefficient - curve fitting by the method of least squares - Partial and multiple correlation coefficients.

Books for Study References:

Mode, E.B.: Elements of Statistics - Prentice Hall

Wilks, S.S.: Elementary Statistical Analysis - Oxford and IBH

Snedecor, G.W., & Cochran, W.G.(1967): Statistical Methods, Oxford and IBH

Simpson and Kafka: Basic Statistics

Burr, I.W.: Applied Statistical Methods, Academic Press.

Croxton, F.E. and Cowden, D.J.: Applied General Statistics, Prentice Hall

Ostleo, B.: Statistics in Research, Oxford & IBH.

SEMESTER III

PART IV - ENVIRONMENTAL STUDIES

Unit I

Introduction to Environmental Studies

Multidisciplinary nature of environmental studies; Scope and importance; concept of sustainability and sustainable development.

Unit II

Ecosystem (2 lectures)

What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: Food chains, food webs and ecological succession, Case studies of the following ecosystem: Forest ecosystem, Grassland ecosystem, Desert ecosystem, Aquatic ecosystem (ponds, stream, lakes, rivers, ocean, estuaries)

Unit III

Natural Resources : Renewable and Non – renewable Resources (6 lectures)

Land resources and land use change: Land degradation, soil erosion and desertification. Deforestation : Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations. Water : Use and over –exploitation of surface and ground water, floods, droughts, conflicts over water (international and inter-state). Energy resources : Renewable and non renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

Unit IV

: Biodiversity and Conservation (8 lectures)

Levels of biological diversity: genetics, species and ecosystem diversity, Biogeographic zones of India: Biodiversity patterns and global biodiversity hot spots India as a mega-biodiversity nation, Endangered and endemic species of India. Threats to biodiversity : Habitat loss, poaching of wildlife, man- wildlife conflicts, biological invasions; Conservations of biodiversity : In-situ and Ex-situ Conservation of biodiversity. Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

Unit V

Environmental Pollution(8 lectures)

Environmental pollution: types, causes, effects and controls: Air, Water, soil and noise Pollution. Nuclear hazards and human health risks. Solid waste management: Control measures of urban and industrial waste Pollution case studies.

Unit VI

Environmental Policies & Practices (8 lecturers), Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture, Environment Laws: Environment Protection Act, Air (Prevention & Control of Pollution) Act; Water (Prevention and Control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD), Nature reserves, tribal populations and rights, and human Wildlife conflicts in Indian context.

Unit VII

Human Communities and the Environment (7 lectures)

Human population growth, impacts on environment, human health and welfare, Resettlement and rehabilitation of projects affected persons; case studies. Disaster management: floods, earthquake, cyclone and landslides, Environmental movements : Chipko, Silent Valley, Bishnois of Rajasthan, .Environmental ethics : Role of Indian and other religions and cultures in environmental conservation, Environmental communication and public awareness, case studies(e.g. CNG Vehicles in Delhi)

Unit VIII

Field Work (6 lectures)

Visit to an area to document environmental assets: river / forest/ flora/ fauna etc.

Visit to a local polluted site – Urban / Rural/ Industrial/ Agricultural.

Study of common plants, insects, birds and basic principles of identification.

Study of simple ecosystem- pond, river, Delhi Ridge etc (Equal to 5 Lectures)

SUGGESTED READINGS:

Carson , R. 2002.Silent Spring, Houghton Mifflin Harcourt.

Gadgil , M.,& Guha, R. 1993.This Fissured Land: An Ecological History of India. Univ.of California Press.

Glesson, B. and Low, N.(eds.)1999. Global Ethics and Environment, London, Routledge.

Gleick,P.H.1993.Water Crisis. Pacific Institute for Studies in Dev.,Environment & Security. Stockholm Env.Institute, Oxford Univ.Press.

Groom, Martha J., Gary K.Meffe, and Carl Ronald Carroll. Principles of Conservation Biology. Sunderland: Sinauer Associates,2006.

Grumbine,R.Edward, and Pandit,M.K2013.Threats from India's Himalayas dams .Science,339:36-37

McCully,P.1996.Rivers no more :the environmental effects of dams(pp.29-64).Zed books.

McNeill,John R.2000.Something New Under the Sun: An Environmental History of the Twentieth Century.

Odum,E.P.,Odum, H.T.& Andrees,J.1971.Fundamental of Ecology. Philadelphia Saunders.

Pepper,I.L.,Gerba,C.P & Brusseau,M.L.2011.Environmental and Pollution Science. Academic Press.

Rao,M.N.& Datta,A.K1987.Waste Water Treatment. Oxford and IBH Publishing Co.Pvt.Ltd.

Raven,P.H.,Hassenzahl,D.M & Berg,L.R.2012 Environment.8th edition. John Willey & sons.

Rosencranz, A., Divan, S., & Noble, M.L. 2001. Environmental law and policy in India. Tirupathi 1992.

Sengupta, R. 2003. Ecology and Economics: An approach to sustainable development. OUP

Singh, J.S., Singh, S.P and Gupta, S.R. 2014. Ecology, Environmental Science and Conservation. S.Chand Publishing, New Delhi.

Sodhi, N.S., Gibson, L. & Raven, P.H (eds). 2013. Conservation Biology :Voices from the Tropics. John Willey & Sons.

Thapar, V. 1998. Land of the Tiger: A Natural History of the Indian Subcontinent.

Warren, C.E. 1971. Biology and water Pollution Control. WB Saunders.

Willson, E.O. 2006. The Creation: An appeal to save life on earth..New York: Norton.

World Commission on Environment and Development. 1987. Our Common Future. Oxford University Press.

SEMESTER III

PART IV – SOFT SKILLS

Essentials of Spoken and Presentation Skills – Level – I

Unit – I

Communication Skills for effective Business Presentation, perfecting oral skills; aural skills; Reading Skills

Unit – II

Non Verbal Communication: cultural codes for effective and business Presentations; Business Etiquettes.

Unit – III

Informal and Informal conversations, Introducing, Opening and closing Speeches, Inviting, thanking, Apologizing, Expressing anger Resolving conflict, Giving and taking information.

Unit – IV

Etiquettes for Public Speaking (extempore and lectures), Interviews and Group Discussions, Telephone conversations and Business Meetings

Unit – V

Etiquettes for Business presentations – Team presentations and Individual presentation.

Recommended texts:

- Powell. In Company. MacMillan. Cotton, et al. Market Leader. Longman.
- Pease, Allan. 1998. Body Language: How to Read Others Thoughts by their Gestures. Suda Publications. New Delhi.
- Gardner, Howard. 1993. Multiple Intelligences: The Theory in Practice: A Reader Basic Book. New York.
- De Bono, Edward. 2000. Six Thinking Hats. 2nd Edition. Penguin Books. De Bono, Edward. 1993. Serious Creativity. Re print. Harper Business.

SEMESTER IV

பகுதி I - தமிழ்

இரண்டாம் ஆண்டு- நான்காம் பருவம்

அலகு -1

தமிழிலக்கிய வரலாறு

1. சங்க இலக்கிய வரலாறு
2. அற இலக்கிய வரலாறு

அலகு -2

எட்டுத்தொகை

1. நற்றிணை : 10, 110, 129
2. குறுந்தொகை : 8, 25, 32
3. கலித்தொகை : 6, 37, 51
4. அகநானூறு : 7, 122, 155
5. புறநானூறு : 89, 109, 204

அலகு -3

பத்துப்பாட்டு

நெடுநல்வாடை

அலகு -4

சிலப்பதிகாரம் - மனையறம்படத்த காதை

மணிமேகலை - விழாவறை காதை

அலகு -5

திருக்குறள்

அறத்துப்பால் : வாழ்க்கைத் துணைநலம், மக்கட்பேறு

பொருட்பால் : கல்வி, கேள்வி

காமத்துப்பால்: குறிப்பு அறிதல், புணர்ச்சி மகிழ்தல்

அலகு -6

மொழிப்பயிற்சி

1. ஆங்கிலத்தில் இருந்து தமிழுக்கு மொழிப்பெயர்த்தல்
2. தமிழில் இருந்து ஆங்கிலத்துக்கு மொழிப் பெயர்த்தல்

SEMESTER IV

PART – II – ENGLISH

Text - Six One - Act Plays by Pavai Publications Rs.50/-

Gifts to Posterity by Anu Chithra Publishers (the collection which has got six short stories only) Rs. 32/-

Building Competency A Course in Reading and Writing English by Maruthi Publications. Rs. 50/-

Unit – I Six One-Act Plays

1. The Bishop's Candlesticks - Norman McKinnell
2. The Two Corporals - Val Gielgud
3. Wurzel-Flummery - A.A. Milne
4. Old Man River - Dorothy Deming
5. Hewers of Coal - Joe Corrie
6. Five at "The George" - Stuart Ready

Unit – II Short Stories

1. Comrades - Nadine Gardiner
2. Games at Twilight - Anita Desai
3. Gateman's Gift - R. K. Narayan
4. Open Window - Munro (Saki)
5. Some Words with a Mummy - Edgar Allan Poe
6. The Ant and the Grasshopper - Somerset Maugham

Unit – III Prose and Scenes from Shakespeare

Scenes from Shakespeare:

1. Merchant of Venice - Lines on Quality of Mercy
2. Julius Ceaser - Antony's Funeral Oration
- 3.* Macbeth - Line from Sleep Walking Sign

*Instead of Macbeth- line from Sleep Walking Sign the following Amendment occurs w.e.f. 2016-17(batch of candidates admitted to the course from the academic year 2015-16):-

3. Macbeth-Murder Scene in the same text Building Competency Prose:

1. Little Girls are Wiser than Men - Leo Tolstoy
2. The Last Clock - James Thurber
3. How far is the River - Ruskin Bond

Unit - IV

Writing Skill Exercises

Letter Writing (Formal & Informal)

Précis Writing

Paraphrasing

Comprehension

Report Writing.

Part II and Part IV from Spring Board can be used for Class room exercises to enhance the students' communicative and presentation skills.

SEMESTER IV

PART III

CORE PAPER IV -PROGRAMMING IN JAVA

Unit 1:

Introduction to Java-Features of Java-Basic Concepts of Object Oriented Programming-Java Tokens-Java Statements-Constants- Variables-Data Types- Type Casting-Operators- Expressions-Control Statements: Branching and Looping Statements.

Unit-2: Classes, Objects and Methods-Constructors-Methods Overloading-Inheritance-Overriding Methods-Finalizer and Abstract Methods-Visibility Control –Arrays, Strings and Vectors-String Buffer Class-Wrapper Classes.

Unit 3:

Interfaces-Packages-Creating Packages-Accessing a Package-Multithreaded Programming-Creating Threads-Stopping and Blocking a Thread-Life Cycle of a Thread-Using Thread Methods-Thread Priority-Synchronization-Implementing the Runnable Interface .

Unit-4:

Managing Errors and Exceptions-Syntax of Exception Handling Code-Using Finally Statement-Throwing Our Own Exceptions-Applet Programming-Applet Life Cycle- Graphics Programming-Managing Input/Output Files: Concept of Streams-Stream Classes- Byte Stream Classes-Character Stream Classes – Using Streams-Using the File Class- Creation of Files-Random Access Files-Other Stream Classes.

Unit-5: :

Network basics –socket programming – proxy servers – TCP/IP – Net Address – URL – Datagrams -Java Utility Classes-Introducing the AWT: Working with Windows, Graphics and Text- AWT Classes-Working with Frames-Working with Graphics-Working with Color- Working with Fonts-Using AWT Controls, Layout Managers and Menus.

RECOMMENDED TEXTS

- i. E. Balagurusamy, 2004, Programming with JAVA, 2nd Edition, Tata McGraw-Hill Publishing Co. Ltd.
- ii. Herbert Schildt, 2005, The Complete Reference Java™2, 5th Edition, Tata McGraw-Hill Publishing Co. Ltd.

Reference Books

- i. Y. Daniel Liang , 2003, An Introduction to JAVA Programming, Prentice-Hall of India Pvt. Ltd.

- ii. Cay S. Horstmann and Gary Cornell, 2005, Core Java™ 2 Volume I-Fundamentals, 7th Edition- Pearson Education.
- iii. Ken Arnold, James Gosling and David Holmes, 2003, The Java™ Programming Language, 3rd Edition, Pearson Education.

SEMESTER IV

PRACTICAL – IV: JAVA PROGRAMMING LAB

APPLICATIONS

1. Substring Removal from a String. Use String Buffer Class.
2. Determining the Perimeter and Area of a Triangle. Use Stream Class.
3. Determining the Order of Numbers Generated randomly using Random Class.
4. Usage of Calendar Class and Manipulation.
5. Implementation of Point Class for Image Manipulation.
6. String Manipulation Using Char Array.
7. Database Creation for Storing E-mail Addresses and Manipulation.
8. Usage of Vector Classes.
9. Interfaces and Packages
10. Implementing Thread based Applications and Exception Handling.
11. Application using Synchronization such as Thread based, Class based and Synchronized Statements.
12. Text fields (copy, display, counting characters, words and lines)
13. Data file creating and processing for electricity billing.
14. Data file creating and processing for telephone billing

APPLETS:

15. Working with Frames and Various Controls.
16. Working with Dialog Box and Menus.
17. Working with Colors and Fonts.
18. Drawing various shapes using Graphical statements.
19. Working with panel and all types of Layout.
20. Design a simple calculator with minimal of 10 operations
21. Usage of buttons, labels, text components in suitable application
22. Usage of Radio buttons, check box ,choice list in suitable application.

SEMESTER IV

ALLIED - PAPER IV - STATISTICAL METHODS AND THEIR APPLICATIONS II

UNIT - 1:

Concepts of random variable - Mathematical expectation - Moments of random variable (raw and central moments) - Moment generating function - Chebycheff's inequality - simple problems.

UNIT - 2:

Standard distributions - Binomial, Poisson and Normal distributions - Fitting of distributions.

UNIT - 3:

Concept of sampling distributions - standard error - Tests of significance based on t, Chi-square and F - distributions with respect to mean, variance and correlation coefficient. Theory of attributes and tests of independence in contingency table.

UNIT - 4:

Principle of scientific experiments - Randomization, replication, and local control Analysis of variance - One way and two way classification Analysis of CRD and RBD - Latin square designs. Concepts of factorial experiments (without confounding).

UNIT - 5:

Non parametric tests- Comparison between parametric and Non-parametric tests- Sign test- Runs test for one and two sample problems- Wilcoxon signed Rank test- Mann Whitney U test.

BOOKS FOR STUDY AND REFERENCES:

Mode, E.B.: Elements of Statistics - Prentice Hall

Wilks, S.S.: Elementary Statistical Analysis -Oxford and IBH

Snedecor, G.W., & Cochran, W.G.: Statistical Methods, Oxford and IBH

Simpson and Kafka: Basic Statistics

Burr, I.W.: Applied Statistical Methods, Academic Press.

Croxton, FE. and Cowden, D.J.: Applied General Statistics, Prentice Hall

Ostleo, B.: Statistics in Research, Oxford & IBH.

Sydney Siegel- Non-parametric Methods for Behavioural Sciences.

Daniel, W W- Biostatistics.

SEMESTER IV

ALLIED PAPER IV-PRACTICAL

(BASED ON STATISTICAL METHODS AND THEIR APPLICATIONS I AND II)

1. Construction of univariate and bivariate frequency distribution with samples of size not proceeding 200.
2. Diagrammatic and graphical representation of various statistical data and frequency distributions.
3. Cumulative frequency curve and Lorenz curves.
4. Computation of various measures of location, dispersion, moments, skewness and kurtosis.
5. Curve fitting by the method of least squares.
(i) $y = ax + b$; (ii) $y = ax^2 + bx + C$; (iii) $y = aebx$ (iv) $y = axb$
6. Computation of correlation coefficients - regression lines (raw data and grouped data) - correlation coefficients, Partial and Multiple Correlation coefficients.
7. Fitting of Binomial, Poisson and Normal distributions and testing goodness of fit.
8. Large sample test - tests for proportions.
9. Exact test based on t, Chi-square, and F distributions with regard to mean, variance and correlation coefficients.
10. Estimation of mean and r total and their standard errors in simple, stratified and systematic random sampling procedure.
11. Analysis of variance - one-way and two-way classifications.
12. Analysis of CRD, RBD and Latin square designs. Non-parametric tests.

SEMESTER IV

PART IV- SOFT SKILLS

Essentials of Spoken and Presentation Skills – Level – II

Unit – I

Body Language – Kinesics, Proxemics, Para linguistic, Chronemics, Nuances of Speech Delivery. Personality Development: Building self esteem.

Unit – II

Team work and participating in group discussions – Team building and Team work, Team briefing, Role of Team leader, Conflict resolution, Methodology of Group discussions, Role Functions in Group Discussion, Types of Non – functional Behavior, Improving group performance. Participating in Mock group discussions.

Unit – III

Interviews – Types of Interviews, preparing for interviews, facing interviews, reviewing performance, participating in mock interviews.

Unit – IV

Business Presentations – Preparing successful presentations, thinking about audience, making effective use of visual aid, Delivering presentation, using prompts, dealing with questions and interruptions, Mock presentations.

Recommended Texts:

Peter, Francis. Soft Skills and Professional Communication. New Delhi: Tata McGraw Hill. 2012. Print.

Singh, Prakash and Raman, Meenakshi. Business Communication. New Delhi: Oxford UP. 2006. Print.

Bailey, Edward P. Writing and Speaking at Work: A Practical Guide for Business Communication. Pennsylvania: Prentice Hall. 2007. Print.

Pease, Allan and Peas, Barbara. The Definitive Book of Body Language. New York: Random House. 2006. Print.

De Bono, Edward. 1993. Serious Creativity. Re print. Harper Business.

SEMESTER V

CORE PAPER –V- OPERATING SYSTEMS

Unit 1:

Introduction: Views –Goals –Types of system – OS Structure – Components – Services - System Structures – Layered Approach -Virtual Machines - System Design and Implementation. Process Management: Process - Process Scheduling – Cooperating Process –Threads - Interprocess Communication. CPU Scheduling : CPU Schedulers Scheduling criteria – Scheduling Algorithms.

Unit-2:–

Process Synchronization: Critical-Section problem Synchronization Hardware – Semaphores – Classic Problems of Synchronization – Critical Region – Monitors. Deadlock : Characterization – Methods for handling Deadlocks – Prevention, Avoidance, and Detection of Deadlock - Recovery from deadlock.

Unit 3:

Memory Management : Address Binding – Dynamic Loading and Linking – Overlays – Logical and Physical Address Space - Contiguous Allocation – Internal & External Fragmentation . Non Contiguous Allocation: Paging and Segmentation schemes Implementation – Hardware Protection – Sharing - Fragmentation.

Unit-4:

Virtual Memory :: Demand Paging – Page Replacement – Page Replacement Algorithms – Thrashing. – File System: Concepts – Access methods – Directory Structure –Protection Consistency Semantics – File System Structures – Allocation methods – Free Space Management.

Unit-5 :

I/O Systems: Overview - I/O Hardware – Application I/O Interface – Kernel I/O subsystem – Transforming I/O Requests to Hardware Operations – Performance. Secondary Storage Structures : Protection – Goals- Domain Access matrix – The security problem – Authentication – Threats – Threat Monitoring – Encryption.

RECOMMENDED TEXTS

Silberschatz A., Galvin P.B., Gange., 2002 , Operating System Principles ,Sixth Edition, John Wiley & Sons.

REFERENCE BOOKS

H.M. Deitel ,1990, An Introduction to Operating System,- Second Edition,Addison Wesley

SEMESTER V

CORE PAPER VI -DATABASE MANAGEMENT SYSTEMS

Unit 1: Advantages and Components of a Database Management outline Systems – Feasibility Study – Class Diagrams – Data Types – Events –Normal Forms – Integrity – Converting Class Diagrams to Normalized Tables – Data Dictionary.

Unit-2:

Query Basics – Computation Using Queries – Subtotals and GROUP BY Command – Queries with Multiple Tables – Subqueries –Joins – DDL & DML – Testing Queries

Unit 3:

Effective Design of Forms and Reports – Form Layout –Creating Forms – Graphical Objects – Reports – Procedural Languages –Data on Forms – Programs to Retrieve and Save Data – Error Handling.

Unit-4:

Power of Application Structure – User Interface Features –Transaction – Forms Events – Custom Reports – Distributing Application – Table Operations – Data Storage Methods – Storing Data Columns – Data Clustering and Partitioning.

Unit-5 :

Database Administration – Development Stages – Application Types – Backup and Recovery – Security and Privacy – Distributed Databases – Client/Server Databases – Web as a Client/Server System – Objects – Object Oriented Databases – Integrated Applications.

RECOMMENDED TEXTS

1. G. V. Post – Database Management Systems Designing and Building Business Application – McGraw Hill International edition – 1999.

REFERENCE BOOKS

1.RaghuRamakrishnan – Database Management Systems – WCB/McGraw Hill – 1998.
2.C.J. Date – An Introduction to Database Systems – 7th Edition – Addison Wesley- 2000.

SEMESTER V

CORE PAPER VII - COMPUTER ARCHITECTURE AND ORGANIZATION

Unit 1:

Computer Evolution: Pentium and Power PC Evolution. Computer System: Components – Function – Interconnection Structures – Bus Interconnection – Basics of PCI Bus. Memory: Characteristics – Hierarchy – Cache Memory – Principles – Cache Design – Locality of Reference.

Unit-2:

Main Memory: Static RAM – Dynamic RAM – Types of ROM – Memory Chip Organization – Types of DRAM. External Memory: Magnetic Disk – Basics of RAID – Optical Memory – Magnetic Tapes

Unit 3:

Input/Output: External Devices – I/O Module – Programmed I/O – Interrupt Driven I/O – DMA – I/O Channels & Processors. Computer Arithmetic: ALU – Integer Representation and Arithmetic – Floating Point Representation and Arithmetic. Instruction Set: Characteristics – Operand Types – Operation Types – Addressing Modes – Instruction Formats – Pentium and Power PC Operands, Operations, Addressing Modes (Simple Examples).

Unit-4:

CPU: Organization of Processors and Registers – Instruction Cycle – Instruction Pipelining – Pentium Processor. RISC: Characteristics – Large Register File – Register Optimization – Architecture – RISC Vs CISC Characteristics – Pipelining.

Unit-5:

Control Unit: Micro-Operations – Control of Processors – Hardwired Implementation - Micro Programmed Control Concepts – Microinstruction Sequencing – General Microinstruction Execution.

RECOMMENDED TEXTS

W. Stallings ,2003,Computer Organization and Architecture, 6th Edition- PHI,New Delhi.

REFERENCE BOOKS

i..C. Hamacher, Z. Vranesic, S.Zaky, 2002, Computer Organization,5thEdition,Mcgraw Hill.

SEMESTER V

PRACTICAL – V: RDBMS LAB

Create database and performing the operations given below using a Menu Driven program:
Insertion, (b)Deletion, (c)Modification, (d)Generating a reports (Simple) for the following
Systems using any RDBMS package :

Payroll

Mark sheet Processing

Savings bank account for banking

Inventory System

Invoice system

Library information system

Student information system

Income tax processing system

Electricity bill preparation system

Telephone directory maintenance.

SEMESTER V

ELECTIVE – I - VISUAL PROGRAMMING

Unit 1:

Customizing a Form - Writing Simple Programs - Toolbox - Creating Controls - Name Property - Command Button - Access Keys - Image Controls - Text Boxes - Labels - Message Boxes - Grid - Editing Tools - Variables - Data Types - String - Numbers.

Unit-2:

Displaying Information - Determinate Loops - Indeterminate Loops - Conditionals - Built-in Functions - Functions and Procedures.

Unit 3:

Lists - Arrays - Sorting and Searching - Records - Control Arrays - Combo Boxes - Grid Control - Projects with Multiple forms – Do Events and Sub Main - Error Trapping.

Unit-4:

VB Objects - Dialog Boxes - Common Controls - Menus - MDI Forms - Testing, Debugging and Optimization - Working with Graphics.

Unit-5 :

Monitoring Mouse activity - File Handling - File System Controls - File System Objects - COM/OLE - automation - DLL Servers - OLE Drag and Drop.

RECOMMENDED TEXTS

Gary Cornell - Visual Basic 6 from the Ground up - Tata McGraw Hill - 1999.

Noel Jerke - Visual Basic 6 (The Complete Reference) - Tata McGraw Hill – 1999

SEMESTER V

ELECTIVE I - RDBMS AND ORACLE

Unit I

Database Concepts: A Relational approach: Database – Relationships – DBMS – Relational Data Model – Integrity Rules – Theoretical Relational Languages. Database Design: Data Modeling and Normalization: Data Modeling – Dependency – Database Design – Normal forms – Dependency Diagrams - Denormalization – Another Example of Normalization.

Unit-II

Oracle9i: Overview: Personal Databases – Client/Server Databases – Oracle9i an introduction – SQL *Plus Environment – SQL – Logging into SQL *Plus - SQL *Plus Commands – Errors & Help – Alternate Text Editors - SQL *Plus Worksheet - iSQL *Plus. Oracle Tables: DDL: Naming Rules and conventions – Data Types – Constraints – Creating Oracle Table – Displaying Table Information – Altering an Existing Table – Dropping, Renaming, Truncating Table – Table Types – Spooling – Error codes.

Unit III

Working with Table: Data Management and Retrieval: DML – adding a new Row/Record – Customized Prompts – Updating and Deleting an Existing Rows/Records – retrieving Data from Table – Arithmetic Operations – restricting Data with WHERE clause – Sorting – Revisiting Substitution Variables – DEFINE command – CASE structure. Functions and Grouping: Built-in functions –Grouping Data. Multiple Tables: Joins and Set operations: Join – Set operations.

Unit-IV:

PL/SQL: A Programming Language: History – Fundamentals – Block Structure – Comments – Data Types – Other Data Types – Declaration – Assignment operation – Bind variables – Substitution Variables – Printing – Arithmetic Operators. Control Structures and Embedded SQL: Control Structures – Nested Blocks – SQL in PL/SQL – Data Manipulation – Transaction Control statements. PL/SQL Cursors and Exceptions: Cursors – Implicit & Explicit Cursors and Attributes – Cursor FOR loops – SELECT...FOR UPDATE – WHERE CURRENT OF clause – Cursor with Parameters – Cursor Variables – Exceptions – Types of Exceptions.

Unit-V

: PL/SQL Composite Data Types: Records – Tables – Varrays. Named Blocks: Procedures – Functions – Packages –Triggers –Data Dictionary Views.

RECOMMENDED TEXTS

DATABASE SYSTEMS USING ORACLE – Nilesh Shah, 2nd edition, PHI.

REFERENCE BOOKS

1. DATABASE MANAGEMNET SYSTEMS – ArunMajumdar & Pritimoy Bhattacharya, 2007, TMH.
2. DATABASE MANAGEMENT SYSTEMS – Gerald V. Post, 3rd edition, TMH.

SEMESTER V

ELECTIVE I - UNIX PROGRAMMING

Unit 1:

INTRODUCTION: File and common commands - Shell - More about files - Directories- Unix system - Basics of file Directories and filenames - Permissions - modes - Directory hierarchy - Devices - the grep family - Other filters - the stream editor sed - the awk pattern scanning and processing language - files and good filters.

Unit-2:

CONCEPTS OF SHELL:

Command line structure - Metacharacters - Creating new commands - Command arguments and parameters - program output as arguments - Shell variables - More on I/O redirection - loop in shell programs - Bundle - Setting shell attributes, Shift command line parameters - Exiting a command or the shell, evaluating arguments - Executing command without invoking a new process - Trapping exit codes -- Conditional expressions.

Unit 3:

SHELL PROGRAMMING: Customizing the cal command, Functions of command, While and Until loops - Traps - Catching interrupts - Replacing a file - Overwrite - Zap - Pick command - News command - Get and Put tracking file changes.

Unit-4:

FEATURES IN UNIX: Standard input and output - Program arguments - file access - A screen at a time printer - On bugs and debugging - Examples - Zap - pick - Interactive file comparison program - Accessing the environment - Unix system calls - Low level I/O, File system Directories and modes, Processors, Signal and Interrupts

Unit-5 :

PROGRAM DEVELOPMENT AND DOCUMENT PREPARATION:

Program development - Four function calculator - Variables and error recovery - Arbitrary variable names, Built in functions, Compilation into a machine, Control flow and relational operators, Functions and procedures - Performance evaluation - Ms macro package - Troff level - Tbl and eqn preprocessors - Manual page - Other document preparation.

RECOMMENDED TEXTS

Brian W. Kernighan, Rob Pike - The UNIX Programming Environment - Prentice Hall of India(1984).

REFERENCE BOOKS

I. Steven Earhart - The UNIX System for MSDOS Users - Galgotia book source P. Ltd. (1990).

2. Stefan Prata - Advanced UNIX - A Programmer Guide.

SEMESTER V

PART- IV - VALUE EDUCATION -

Unit I:

Value education-its purpose and significance in the present world – Value system – The role of culture and civilization-Holistic living – Balancing the outer and inner – Body, Mind and Intellectual level- Duties and responsibilities.

Unit II : Salient values for life- Truth, commitment, honesty and integrity, forgiveness and love, empathy and ability to sacrifice, care, unity , and inclusiveness, Self esteem and self confidence, punctuality – Time, task and resource management – Problem solving and decision making skills- Interpersonal and Intra personal relationship – Team work – Positive and creative thinking

Unit III

: Human Rights – Universal Declaration of Human Rights – Human Rights violations – National Integration – Peace and non-violence – Dr. A P J Kalam’s ten points for enlightened citizenship – Social Values and Welfare of the citizen – The role of media in value building.

Unit IV

Environment and Ecological balance – interdependence of all beings – living and non-living. The binding of man and nature – Environment conservation and enrichment.

Unit V : Social Evils – Corruption, Cyber crime, Terrorism – Alcoholism, Drug addiction – Dowry – Domestic violence – untouchability – female infanticide – atrocities against women- How to tackle them

BOOKS FOR REFERENCE:

- 1.M.G.Chitakra: Education and Human Values, A.P.H.Publishing Corporation, New Delhi, 2003
2. Chakravarthy, S.K. : Values and ethics for Organizations: Theory and Practice, Oxford University Press, New Delhi , 1999.
3. Satchidananda, M.K.: Ethics, Education, Indian Unity and Culture, Ajantha Publications, Delhi, 1991
4. Das, M.S. & Gupta, V.K. : Social Values among Young adults: A changing Scenario, M.D. Publications, New Delhi, 1995
5. Bandiste, D.D.: Humanist Values: A Source Book, B.R. Publishing Corporation, Delhi, 1999
6. Ruhela, S.P. : Human Values and education, Sterling Publications, New Delhi, 1986

7. Kaul, G.N.: Values and Education in Independent Indian, Associated Publishers, Mumbai, 1975
8. NCERT, Education in Values, New Delhi, 1992
9. Swami Budhananda (1983) How to Build Character A Primer : Ramakrishna Mission, New Delhi
10. A Cultural Heritage of India (4 Vols.), Bharatiya Vidya Bhavan, Bombay. (Selected Chapters only)
11. For Life, For the future : Reserves and Remains – UNESCO Publication
12. Values, A Vedanta Kesari Presentation, Sri Ramakrishna Math, Chennai, 1996
13. Swami Vivekananda, Youth and Modern India, Ramakrishna Mission, Chennai
14. Swami Vivekananda, Call to the Youth for Nation Building, Advaita Ashrama, Calcutta
15. Awakening Indians to India, Chinmayananda Mission, 2003

SEMESTER VI

CORE PAPER VIII - DATA COMMUNICATION AND NETWORKING

Unit I

Introduction to Data Communication, Network, Protocols & standards and standards organizations - Line Configuration - Topology - Transmission mode - Classification of Network - OSI Model - Layers of OSI Model.

Unit -:II

Parallel and Serial Transmission - DTE/DCE/such as EIA-449, EIA-530, EIA-202 and x.21 interface - Interface standards - Modems - Guided Media - Unguided Media - Performance - Types of Error - Error Detection - Error Corrections.

Unit III

Multiplexing - Types of Multiplexing - Multiplexing Application - Telephone system - Project 802 - Ethernet - Token Bus - Token Ring - FDDI - IEEE 802.6 - SMDS - Circuit Switching - Packet Switching - Message switching - Connection Oriented and Connectionless services.

Unit-IV

History of Analog and Digital Network - Access to ISDN - ISDN Layers - Broadband ISDN - X.25 Layers - Packet Layer Protocol - ATM - ATM Topology - ATM Protocol.

Unit-V

Repeaters - Bridges - Routers - Gateway - Routing algorithms - TCP/IP Network, Transport and Application Layers of TCP/IP - World Wide Web.

RECOMMENDED TEXTS

Behrouz and Forouzan,2001, Introduction to Data Communication and Networking, 2nd Edition, TMH.

REFERENCE BOOKS

- i. JeanWalrand 1998,Communication Networks (A first Course),Second Edition, WCB/McGraw Hill.
- ii. Behrouz and Forouzan,2006,Data Communication and Networking,3rd Edition ,TMH.

SEMESTER VI

CORE PAPER IX - WEB TECHNOLOGY

Unit I

:Introduction to` VBScript - Adding VBScript Code to an HTML Page - VB Script Basics - VBScript Data Types - VBScript Variables - VBScript Constants - VBScript Operators – mathematical- comparison-logical - Using Conditional Statements - Looping Through Code - VBScript Procedures – type casting variables - math functions –date functions – string functions –other functions - VBScript Coding Conventions - Dictionary Object in VBScript - Err Object

Unit-II

Introduction to Javascript – Advantages of Javascript – Javascript syntax - Data type – Variable - Array – Operator & Expression – Looping – control structures - Constructor Function – user defined function Dialog Box .

Unit III

Javascript document object model – Introduction – Object in HTML – Event Handling – Window object – Document object – Browser object – Form object – Navigator object – Screen object – Build in object – User defined object – Cookies.

Unit-IV

ASP.NET Language Structure – Page Structure – Page event , Properties & Compiler Directives . HTML server controls – Anchor, Tables, Forms, Files . Basic Web server Controls – Lable, Text box, Button, Image Links, Check & radio Button, Hyperlink, Data List Web Server Controls – Check box list. Radio button list, Drop down list, List box, Data grid, Repeater.

Unit-V

Request and Response Objects, Cookies, Working with Data – OLEDB connection class, command class, transaction class, data adaptor class, data set class. Advanced issues – email, Application issues, working with IIS and page Directives, error handling. Security – Authentication, IP Address, Secure by SSL & Client Certificates

RECOMMENDED TEXTS

- i. Bayross, 2000, Web Enable Commercial Application Development Using HTML, DHTML, Javascript, Perl CGI, BPB Publications.
- ii. A. Russell Jones, Mastering Active Server Pages 3, BPB Publications.

REFERENCE BOOKS

- i. HathleenKalata, Internet Programming with VBScript and JavaScript, Thomson Learning
- ii. Mike McGrath, XML Harness the Power of XML in easy steps, Dreamtech Publications
- iii. T.A. Powell, 2002, Complete Reference HTML , TMH.
- iv. J.Jaworski, 1999, Mastering Javascript, BPB Publications.
- v. Powell, Thomas; Schneider, Fritz, JavaScript: The Complete Reference, 2nd edition2004, TMH

SEMESTER VI

PRACTICAL-VI - -WEB APPLICATIONS LAB

VB SCRIPT & JAVASCRIPT

1. Write a program outputs the squares, roots, cubes and complements of integers between 1 and 100.
2. Create a calculator.
3. Write a script to Sort numbers and strings
4. Create a program to generate a hit counter
5. Create a program to verify whether email address provided by user is valid or invalid.
6. Write a program to scroll the text on status bar.
7. The form consists of two multiple choice list and one single choice list
 - a. the first multiple choice list display the major dishes available.
 - b. the second Multiple choice list display the stocks available.
 - c. The single choice list display the miscellaneous (Milkshakes, soft drinks, softy available)
8. Write a script to create a digital clock.
9. Create a web page using two image file which switch black and white one another as the mouse pointer moves over the image. Use the On Mouse over and On Mouse event, onDbclick handler
10. Build a WWW page with an image and 3 buttons., Pick three favorite graphics, Label the buttons and make each one swap in the graphic you have chosen
11. Create a frameset that has two frames, side by side.
 1. Make the left-hand frame contain a form with 3 radio buttons
 2. The buttons should be for three search engines:
 - a. Yahoo (<http://www.yahoo.com>)
 - b. Altavista (<http://www.altavista.com>)
 - c. Infoseek (<http://www.infoseek.com>)
 3. When the user clicks on of the option buttons, the frame on the right hand side should be loaded with the right search engine.
12. Write a program to implement Employee database with all validation

ASP

1. Create a login form, to expire, if the user does not type the password within 100 seconds
2. Create an employee database and manipulate the records using command object in ASP
3. Develop an application to illustrate the usage of Request and Response Objects in ASP.

4. Write an ASP program using Request Object to give the exact list of headers sent by the browser to the Web server.
5. Create an Active Server Page to display the records one by one from a student database. The student database should contain roll no, name, marks & total.
7. Design an ASP application that describes books in the Online Bookshop.(Use AD Rotator Component, Content Rotator Component, Content Linking Component)
8. Create a document and add a link to it. When the user moves the mouse over the link it should load the linked document on its own (User is not required to click on the link).
9. Create a document, which opens a new window without a toolbar, address bar, or a status bar that unloads itself after one minute.
10. Create a document that accepts the user's name in a text field form and displays the same the next time when the user visits the site informing him that he has accessed the site for the second time, and so on.

SEMESTER VI

ELECTIVE II- DATA MINING

Unit I

Introduction: Data mining – Functionalities – Classification – Introduction to Data Warehousing – Data Preprocessing : Preprocessing the Data – Data cleaning – Data Integration and Transformation – Data reduction

Unit II

:Data Mining, Primitives, Languages and System Architecture: Data Mining – Primitives – Data Mining Query Language, Architectures of Data mining Systems. Concept Description, Characterization and Comparison: Concept Description, Data Generalization and summarization, Mining Class Comparison

Unit III

Mining Association Rules: Basics Concepts – Single Dimensional Boolean Association Rules From Transaction Databases, Multilevel Association Rules from transaction databases – Multi dimension Association Rules from Relational Database and Data Warehouses.

Unit-IV

Classification and Prediction: Introduction – Issues – Decision Tree Induction – Bayesian Classification. Classification based on Concepts from Association Rule Mining – Other Methods. Prediction – Introduction – Classifier Accuracy.

Unit-V

Cluster Analysis: Introduction – Types of Data in Cluster Analysis, Partitioning Methods – Hierarchical Methods Density Based Methods – GRID Based Method – Model based Clustering Method.

RECOMMENDED TEXT

.J.Han and M. Kamber,2001,Data Mining Concepts and Techniques,HarcourtIndia Pvt. Ltd - New Delhi.

REFERENCE BOOKS

1. K.P. Soman , ShyamDiwakar, V.Ajay ,2006, Insight into Data Mining Theory and Practice, Prentice Hall of India Pvt. Ltd - New Delhi.

WEBSITE, E-LEARNING RESOURCES

i [http:// www.academicpress.com](http://www.academicpress.com)

ii. <http://www.mkp.com>

SEMESTER VI

ELECTIVE II - SOFTWARE TESTING

Unit I

Introduction: Purpose – Productivity and Quality in Software – Testing Vs Debugging – Model for Testing – Bugs – Types of Bugs – Testing and Design Style.

Unit-II

Flow/Graphs and Path Testing – Achievable paths – Path instrumentation – Application – Transaction Flow Testing Techniques

Unit III

Data Flow Testing Strategies - Domain Testing: Domains and Paths – Domains and Interface Testing .

Unit-IV

Linguistic –Metrics – Structural Metric – Path Products and Path Expressions. Syntax Testing – Formats – Test Cases .

Unit-V

Logic Based Testing – Decision Tables – Transition Testing – States, State Graph, State Testing.

RECOMMENDED TEXTS

1. B. Beizer , 2003, Software Testing Techniques, II Edn., DreamTechIndia, New Delhi.
2. K.V.KK. Prasad , 2005, Software Testing Tools, DreamTech. India, New Delhi.

REFERENCE BOOKS

1. I. Burnstein, 2003, Practical Software Testing, Springer International Edn.
2. E. Kit, 1995, Software Testing in the Real World: Improving the Process, Pearson Education, Delhi.
3. R.Rajani, and P.P.Oak, 2004, Software Testing, Tata Mcgraw Hill, New Delhi.

SEMESTER VI

ELECTIVE II - OBJECT ORIENTED ANALYSIS AND DESIGN

Unit I

System Development - Object Basics - Development Life Cycle - Methodologies - Patterns - Frameworks - Unified Approach - UML.

Unit-II

Use-Case Models - Object Analysis - Object relations - Attributes - Methods - Class and Object responsibilities - Case Studies.

Unit III

Design Processes - Design Axioms - Class Design - Object Storage - Object Interoperability - Case Studies.

Unit-IV

User Interface Design - View layer Classes - Micro-Level Processes - View Layer Interface - Case Studies.

Unit-V

Quality Assurance Tests - Testing Strategies - Object orientation on testing - Test Cases - test Plans - Continuous testing - Debugging Principles - System Usability - Measuring User Satisfaction - Case Studies.

RECOMMENDED TEXTS

1. Ali Bahrami - Object Oriented Systems Development - McGraw Hill International Edition - 1999.
2. Grady Booch- Object Oriented Analysis and design –Addison Wesley.

SEMESTER VI

ELECTIVE III - CLIENT / SERVER COMPUTING

Unit I

Introduction to Client/Server Computing – What is Client/Server Computing – Benefits of Client/Server Computing – Evolution of C/S Computing – Hardware Trends – Software Trends-Evolution of Operating Systems – N/w Trends – Business Considerations.

Unit II

Overview of C/S Applications: Components of C/S Applications – Classes of C/S Applications – Categories of C/S Applications . Understanding C/S Computing : Dispelling the Myths – Obstacles – Upfront & Hidden – Open Systems & Standards – Standards – Setting Organizations – Factors of Success.

Unit III

The Client Hardware & Software : Client Component – Client Operating Systems – What is GUI – Database Access – Client Software Products : GUI Environments – Converting 3270/5250 Screens – Database Tools – Client Requirements : GUI Design Standards – Open GUI Standards – Interface Independence – Testing Interfaces .

Unit-IV

The Server : Categories of Servers – Features of Server Machines – Classes of Server Machines – Server Environment : N/W Management Environment – N/W Computing Environment – Extensions – Network Operating System – Loadable Module.

Unit-V

Server Operating System : OS/2 2.0 – Windows New Technology – Unix Based OS – Server Requirements : Platform Independence – Transaction Processing – Connectivity – Intelligent Database – Stored Procedure – Triggers – Load Leveling – Optimizer – Testing and Diagnostic Tools – Backup & Recovery Mechanisms.

RECOMMENDED TEXTS

- 1.Patrick Smith & Steve Guengerich, “Client/Server Computing”. PHI
2. Dawna Travis Devire, “Client/Server Computing”. TMH

SEMESTER VI

ELECTIVE III -COMPUTER GRAPHICS

Unit I

INTRODUCTION TO COMPUTER GRAPHICS : Brief Survey of Computer Graphics – Graphics Systems: Video Display Devices – Types – Raster-Scan Systems and Random-Scan Systems – Input Devices – Hard-Copy Devices – Graphics Software.

Unit-II

OUTPUT PRIMITIVES AND THEIR ATTRIBUTES Line-Drawing (DDA and Bresenham's) Algorithms – Circle-Generating (Midpoint) Algorithm – Ellipse-Generating (Midpoint) Algorithms- Area-Filling (Boundary-Fill and Flood-Fill) Algorithms - Line Attributes - Color and Grayscale Levels – Character Attributes – Inquiry Functions.

Unit III:

TWO-DIMENSIONAL TRANSFORMATIONS AND VIEWING : Basic Transformations - Matrix Representations and Homogeneous Coordinates – Composite Transformations - Other Transformations – Window-to- Viewport Coordinate Transformation – Clipping Algorithms: Cohen-Sutherland Line Clipping and Sutherland- Hodgeman Polygon Clipping – Basic Modeling Concepts - Interactive Input Methods: Logical Classification of Input Devices – Interactive Picture-Construction Techniques.

Unit-IV:

THREE-DIMENSIONAL CONCEPTS: Three-Dimensional Display Methods: Parallel and Perspective Projections – Depth Cueing - Visible Line and Surface Identification – Polygon Surfaces: Polygon Tables, Plane Equations and Polygon Meshes - Three-Dimensional Transformations: Basic, Other and Composite Transformations.

Unit-V

THREE-DIMENSIONAL VIEWING : Viewing Pipeline and Coordinates – Transformation from World to Viewing Coordinates – Projection Transformations - Matrices - View Volumes - Hidden Surface and Hidden Line Elimination Methods: Back-Face Detection , Depth-Buffer and A-Buffer Methods –Wireframe Methods- Light Sources – RGB,CMY and HLS Color Models – Computer Animation: Design of its Sequences and Languages.

RECOMMENDED TEXTS

i. D. Hearn and M.P. Baker,2005,Computer Graphics, 2nd Edition, Pearson Education, Prentice Hall, 19th Reprint.

REFERENCE BOOKS

- i. S. Harrington,1987, Computer Graphics , 2nd Edition , McGraw-Hill Book Co.
- ii. W.M. Newman and R.F. Sproull ,1997, Principles of Interactive Computer Graphics, 2ndEdition,Tata McGraw-Hill Publishing Co. Ltd.
 - iii. D.P. Mukherjee ,1999,Fundamentals of Computer Graphics and Multimedia , 1st Edition, Prentice-Hall of India Pvt. Ltd.
 - iv. N. Krishnamurthy ,2002, Introduction to Computer Graphics, 1st Edition, Tata McGraw-Hill Publishing Co. Ltd.
 - v. D.F.Rogers ,2001,Procedural Elements for Computer Graphics, 2nd Edition, Tata McGraw-Hill Publishing Co. Ltd.
 - vi. Z. Xiang and R.A. Plastock,2002, Computer Graphics, Schaum's Outline Series, Tata McGraw-Hill Publishing Co.

SEMESTER VI

ELECTIVE III - SOFTWARE ENGINEERING

Unit 1

Introduction to Software Engineering Some definition – Some size factors – Quality and productivity factors – Managerial issue. Planning a Software Project: Defining the problem – Developing a solution strategy – planning the development process – planning an organization structure – other planning activities.

Unit-II

Software Cost Estimation: Software – Cost factors – Software cost estimation techniques – specification techniques – level estimation – estimating software maintenance costs. The software requirements specification – formal specification techniques - languages and processors for requirements specification.

Unit III

Software Design: Fundamental Design concepts – Modules and modularizing Criteria – Design Notations – Design Techniques – Detailed Design Consideration – Real time and distributed system design – Test plan – Mile stones walk through and inspection.

Unit-IV:

Implementation issues : Structured Coding techniques – coding style – standards and guidelines – documentation guidelines – type checking – scoping rules – concurrency mechanisms.

Unit-V

Quality assurance – walk through and inspection - Static analysis – symbolic exception – Unit testing and Debugging – System testing – Formal verification: Enhancing maintainability during development – Managerial aspects of software maintenance – Configuration management – source code metrics – other maintenance tools and techniques.

RECOMMENDED TEXTS

i. Richard E.Fairly - Software Engineering Concepts - Tata McGraw-Hill book Company.

REFERENCE BOOKS

- i. R.S.Pressman, 1997, Software Engineering – 1997 - Fourth Ed., McGraw Hill.
- ii. Rajib Mall ,2004,Fundamentals of Software Engineering,2nd Edition, PHI.
