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S.V.K.P. & Dr. K.S. RAJU ARTS & SCIENCE COLLEGE
(Autonomous)
Recognized by UGC as "College with Potential for Excellence"
Accredited by NAAC with "A" Grade
(Affiliated to ADIKAVI NANNAYA UNIVERSITY - Recognised by Govt. of Andhra Pradesh)
PENUGONDA-534 320, West Godavari District., (A.P.)

B.Sc. COMPUTER SCIENCE / I B.Com (Computer Applications)
Paper-1
I Semester Syllabus (w.e.f. 2019-20 Admitted Batch)

COMPUTER FUNDAMENTALS AND PHOTOSHOP

UNIT-I:

Introduction to computers: Characteristics and limitations of computer, Block diagram of computer, types of computers, uses of computers, computer generations.

Number systems: working with binary, octal, decimal and Hexa decimal numbering system.

UNIT-II:

Input and Output devices: Keyboard and mouse, inputting data in other ways, Pointing Devices, Handheld Devices, Optical Devices, Audio-Visual Input Devices, Output Devices: Monitors, Projectors, Speakers, Printers, Plotters.

Types of Software: system software, Application software, commercial, open source, domain and free ware software.

Memories: Primary, Secondary and cache memory. Secondary Storage Devices: Magnetic Tapes, Floppy Disks, Hard Disks.

Windows basics: Start menu, icons, MS-Windows-Desktop, My Computer, My Documents, Pictures, Music, Videos, Recycle Bin, and Task Bar - Control Panel.

Unit –III:

Introduction to Adobe Photoshop: Getting started with Photoshop, creating and saving a document in Photoshop, page layout and back ground, Photoshop program window-title bar, menu bar, option bar, image window, image title bar, status bar, ruler, palettes, tool box, screen modes, saving files, reverting files, closing files.

Unit –IV:

Images: working with images, image size and resolution, image editing, colour modes and adjustments, Zooming & Panning an Image, Rulers, Guides & Grids- Cropping & Straightening an Image, image backgrounds, making selections.

Working with tool box: working with pen tool, save and load selection-working with erasers-working with text and brushes-Colour manipulations: colour modes- Levels – Curves - Seeing

Colour accurately - Patch tool – Cropping-Reading your palettes - Dust and scratches- Advanced Retouching- smoothing skin.

Unit-V:

Layers: Working with layers- layer styles- opacity-adjustment layers

Filters: The filter menu, Working with filters- Editing your photo shoot, presentation –how to create ads, artistic filter, blur filter, brush store filter, distort filters, noice filters, pixelate filters, light effects, difference clouds, sharpen filters, printing.

Menus: purpose of menus – new file- open file- print file – copying data – cut data- paste data- saving custom shape- working with modes- define brushes.

Reference Books:

1. Fundamentals of Computers by Reema Thareja from Oxford University Press
2. Adobe Photoshop Class Room in a Book by Adobe Creative Team.
3. Photoshop: Beginner's Guide for Photoshop - Digital Photography, Photo Editing, Color Grading & Graphic...19 February 2016 by David Maxwell.

II SEMESTER (w.e.f. 2019-20 Admitted Batch)

B.Sc. COMPUTER SCIENCE

Paper-II: PROGRAMMING IN C

UNIT-I

Chapter 1:

INTRODUCTION TO ALGORITHMS AND PROGRAMMING LANGUAGES: Algorithm-Key features of Algorithms-Some more Algorithms- Flow Charts-Pseudo code-Programming Languages- Generation of Programming Languages-Structured Programming Language-Design and Implementation of Correct, Efficient and Maintainable Programs.

Chapter 2:

INTRODUCTION TO C: Introduction-Structure of C Program-Writing the first C Program-File used in C Program- Compiling and Executing C Programs-Using Comments- Keywords-Identifiers-Basic Data Types in C- Variables- Constants- I/O Statements in C-Operators in C-Programming Examples- Type Conversion and Type Casting.

UNIT-II

Chapter 3:

Decision Control and Looping Statements: Introduction to Decision Control Statements-Conditional Branching Statements- Iterative Statements- Nested Loops- Break and Continue Statement- goto Statement.

Chapter 4:

FUNCTIONS: Introduction- Using Functions- Function Declaration/Prototype-Function definition- Function Call- Return Statement- Passing Parameters- Scope of Variables-Storage Classes- Recursive Functions- Types of Recursion-Towers of Hanoi- Recursion Vs. Iteration.

UNIT-III

Chapter 5:

ARRAYS: Introduction- Declaration of Arrays- Accessing elements of the array- Storing values in Array- Calculating the length of the array- Operations that can be Performed on Array- One dimensional array for inter-function communication-Two dimensional Arrays-Operations on Two Dimensional Arrays- Two Dimensional Arrays for Inter function communication-Multi dimensional arrays- Sparse matrices.

Chapter 6:

STRINGS: Introduction- Suppressive Input- String Taxonomy- String Operations- Miscellaneous String and Character functions.

(P.T.O)

UNIT-IV

Chapter 7:POINTERS: Understanding Computer Memory- Introduction to Pointers- Declaring Pointer Variables- Pointer Expressions and Pointer Arithmetic- Null Pointers- Generic Pointers- Passing arguments to Functions using Pointer- Pointer and Arrays- Passing Array to Function-

Difference between Array Name and Pointer- Pointers and Strings- Array of Pointers- Dynamic Memory Allocation- Drawbacks of Pointers.

Chapter 8:

STRUCTURE, UNION, AND ENUMERATED DATA TYPES: Introduction- Nested Structures- Arrays of Structures- Structures and Functions- Self-referential Structures- Union- Arrays of Union Variables- Unions inside Structures- Enumerated Data types.

UNIT-V:

Chapter 9:

FILES: Introduction to Files- Using Files in C- Reading Data from Files- Writing Data from Files- Detecting the End-of-file- Error Handling during File Operations.

TEXT BOOK

1. Computer Fundamentals and Programming in C by REEMA THAREJA from OXFORD UNIVERSITY PRESS.

REFERENCE BOOKS

1. E.Balaguruswamy: COMPUTING FUNDAMENTALS & C PROGRAMMING—TMHl, Second Reprint 2008,

2. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson Edition Publ, 2002.

3. Henry Mullish & Huubert L.Cooper: The Spirit of C, Jaico Pub. House, 1996.

B.Sc. Second Year Computer Science
III Semester Syllabus (w.e.f. 2019-20 Admitted Batch)

Paper-3 : Object Oriented Programming Using Java

UNIT-I:

FUNDAMENTALS OF OBJECT – ORIENTED PROGRAMMING: Introduction, Object Oriented paradigm, Basic Concepts of OOP, Benefits of OOP, Applications of OOP, java features.

OVERVIEW OF JAVA LANGUAGE: Introduction, Simple Java program structure, differences between C, C++ and java, java and internet, Java tokens, Java Statements. Implementing a Java Program, Java Virtual Machine, Command line arguments.

CONSTANTS, VARIABLES & DATA TYPES: Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Value to Variables, Scope of variables, Symbolic Constants, Type casting, Getting Value of Variables, Standard Default values.

UNIT-II:

OPERATORS AND EXPRESSIONS : Arithmetic operators Relational operators, logical operators, Assignment operators, Increment and decrement operators, Conditional operators, Bitwise operators, Special operators, Arithmetic operators, Precedence of Arithmetic operators.

DECISION MAKING & BRANCHING: Introduction, Decision making with if statement, Simple if statement, if Else statement, Nesting of if else statements, the else if ladder, the switch statement, the conditional operator.

DECISION MAKING & LOOPING: Introduction, The While statement, the do-while statement, the for statement, Jumps in loops.

CLASSES, OBJECTS & METHODS: Introduction, Defining a class, Adding variables, Adding methods, Creating objects, Accessing class members, Constructors, Method overloading, Static members, Nesting of methods, visibility controls.

UNIT-III

INHERITANCE: inheritance and types of inheritances, Extending a class, Overloading methods, Final variables and methods, Final classes, Abstract methods and classes.

ARRAYS, STRINGS AND VECTORS: Arrays, One-dimensional arrays, Creating an array, Two – dimensional arrays, Strings, Vectors, Wrapper classes.

INTERFACES: MULTIPLE INHERITANCE: Introduction, Defining interfaces, Extending interfaces, Implementing interfaces, Assessing interface variables;

UNIT-IV

MULTI THREADED PROGRAMMING: Introduction, Creating Threads, Extending the Threads, Stopping and Blocking a Thread, Lifecycle of a Thread, Using Thread Methods, Thread Exceptions, Thread Priority, Synchronization, Implementing the 'Runnable' Interface.

MANAGING ERRORS AND EXCEPTIONS: Types of errors: Compile-time errors, Run-time errors, Exceptions, Exception handling, Multiple Catch Statements, Using finally statement.

UNIT-V

APPLET PROGRAMMING: Local and remote applets, differences between Applets and Applications, Building Applet code, Applet Life cycle: Initialization state, Running state, Idle or stopped state, Dead state, Display state. Designing web page, adding applet to HTML file, Running the Applet.

PACKAGES: Introduction, Java API Packages, Using System Packages, Naming conventions, Creating Packages, Accessing a Package, using a Package, Adding class to a package, Hiding classes, static Import.

Prescribed Book:

1. E .Balaguru swamy, Programming with JAVA, A primer, 3e, TATA McGraw-Hill Company.

Reference Books:

1. John R. Hubbard, Programming with Java, Second Edition, Schaum's outline Series, TMH.
2. Deitel &Deitel. Java TM: How to Program, PHI (2007)
3. Java Programming: From Problem Analysis to Program Design- D.S Mallik
4. Object Oriented Programming Through Java by P. Radha Krishna, Universities Press (2008)
5. Java complete reference

B.Sc. Second Year Computer Science
IV Semester (w.e.f. 2019-20 Admitted Batch)

Paper-4: Data Structures

UNIT-I:

Concept of Abstract Data Types (ADTs): Data Types, Data Structures, storage structures, and file structures, Primitive and Non-primitive Data Structures, Linear and Non-linear Data Structures.

Linear Lists – ADT, Array and Linked representations, Pointers.

Arrays – One Dimensional – Two Dimensional – Multi Dimensional – Operations-Sparse Matrices.

Linked Lists: Single Linked List, Double Linked List, Circular Linked List, applications.

UNIT-II:

Stacks: Definition, ADT, Array and Linked representations, Implementations and Applications

Queues: Definition, ADT, Array and Linked representations, Circular Queues, Dequeues, Priority Queues, Implementations and Applications.

UNIT-III:

Trees: Binary Tree, Definition, Tree Terminology, Traversing the Tree, finding Maximum and Minimum values Properties, ADT, Array and Linked representations, Implementations and Applications. Binary Search Trees (BST) – Definition, ADT, Operations and Implementations, BST Applications. Threaded Binary Trees, Heap trees.

UNIT-IV:

Graphs – Graph and its Representation, Graph Traversals, Connected Components, Basic Searching Techniques, Minimal Spanning Trees.

UNIT- V:

Sorting and Searching: Selection, Insertion, Bubble, Merge, Quick sort, Heap sort, Sequential and Binary Searching.

REFERENCE BOOKS:

1. D S Malik, Data Structures Using C++, Thomson, India Edition 2006.
2. Sahni S, Data Structures, Algorithms and Applications in C++, McGraw-Hill, 2002.
3. SamantaD, Classic Data Structures, Prentice-Hall of India, 2001.
4. Heilman G I,. Data Structures and Algorithms with Object-Oriented Programming, TMH.
5. Tremblay P and Sorenson P G, Introduction to Data structures and applications, TMH

B.Com (Computer Applications) Second Year
III Semester Syllabus (w.e.f. 2019-20 Admitted Batch)

Paper: Office Automation Tools

Unit- I:

MS-Excel: features of Ms-Excel, Parts of MS-Excel window, entering and editing data in worksheet, number formatting in excel, different cell references, how to enter and edit formula in excel, auto fill and custom fill, printing options.

Unit-II:

Formatting options: Different formatting options, change row height, formulae and functions, excel names. Functions: Meaning and advantages of functions, different types of functions available in Excel, financial functions, date and time, engineering, statistical, math and trig, logical, text, information, look up and reference functions, operators in excel, Database functions.

Unit-Ill:

Charts: Different types of charts, Parts of chart, chart creation using wizard, chart operations, data maps, graphs, data sorting, filtering. Excel sub totals, scenarios, what-if analysis Macro; Meaning and advantages of Macros, creation, editing and deletion of macros Creating a macro, how to run, how to delete a macro.

Unit-IV:

MS Access: Creating a Simple Database and Tables: Features of Ms-Access, Creating a Database, Parts of Access, Data Types and properties, adding, deleting fields, renaming the fields in a table. Tables: table creation using design view, table wizard, data sheet view, import table, link table. Forms: The Form Wizard, design view, columnar, tabular, data sheet, chart wizard.

Unit- V:

Finding, Sorting and Displaying Data: Queries and Dynasts, Creating and using select queries, Returning to the Query Design, Multilevel sorts, Finding incomplete matches, showing All records after a Query, saving queries Crosstab Queries. **Printing Reports:** Simple table. Form and Database Printing, Defining advanced Reports, Manual Reporting, Properties in Reports, Saving Reports. **Relational Databases:** Flat Versus Relational, Types of Relationships, Viewing Relationships, Defining and Redefining Relationships, Creating and Deleting Relationships.

Reference Books:

1. Ron Mansfield, Workirfg in Microsoft Office, Tlala McGraw Htll(200S)
2. Ed Bott, Woody Leonhard, Using Microsoft Office 2007, Pearson Education(2007)
3. Sanjay Saxsena, Microsoft Office, 4.Microsoft Office, BPB Publications

B.Com (Computer Applications) Second Year
IV Semester (w.e.f. 2019-20 Admitted Batch)

Paper: PROGRAMMING IN C

Unit- I:Introduction to Algorithms and Programming Languages: Algorithm – Key features of Algorithms – Some more Algorithms – Flow Charts. **Introduction to C:** Structure of C Program – Writing the first C Program – File used in C Program – Compiling and Executing C Programs – Using Comments – Keywords – Identifiers – Basic Data Types in C – Variables – Constants – I/O Statements in C- Operators in C- Programming Examples – Type Conversion and Type Casting

Unit-II: Decision Control and Looping Statements: Introduction to Decision Control Statements – Conditional Branching Statements – Iterative Statements – Nested Loops – Break and Continue Statement – Go to Statement

Unit- III:Functions: Introduction – using functions – Function declaration/ prototype – Function definition – function call – return statement – Passing parameters – Scope of variables – Storage Classes – Recursive function

Unit- IV: Arrays: Introduction – Declaration of Arrays – Accessing elements of the Array – Storing Values in Array – Calculating the length of the Array – Operations on Array – one dimensional array for inter-function communication – Two dimensional Arrays – Operations on Two Dimensional Arrays, **Strings:** Introduction String and Character functions

Unit-V: Pointers: Understanding Computer Memory – Introduction to Pointers – declaring Pointer Variables – - Passing Arguments to Functions using Pointer – Pointer and Arrays – Passing Array to Function. **Structure, Union, and Enumerated Data Types:** Introduction – Nested Structures – Arrays of Structures – Structures and Functions - Unions – Enumerated Data Types.

Reference Books:

1. Reema Thareja, Introduction to C programming, Oxford University Press.

2. E Balagurusamy, Computing Fundamentals & C Programming – Tata McGraw-Hill, 2008.

3. Ashok N Kamthane, Programming with ANSI and Turbo C, Pearson Publisher, 2002.

4. Henry Mulish & Hubert L.Coo Reema Thareja: The Spirit of C: An Introduction to Modern

Programming, Jaico Publishing House,1996.

III B.Sc. Computer Science (19CS5A)

FIFTH SEMESTER SYLLABUS

Database Management System

(W.e.f. 2019-20 Admitted Batch)

UNIT I: Over view of Database Management System: Introduction, file –based system, Drawbacks of file-Based system, Data and information, Database, Database management System, Objectives of DBMS, Evaluation of Database management System, Classification of Database Management system, DBMS Approach, advantages of DBMS, data models, components and Interfaces of Database Management System, Database Architecture, Situations where DBMS is not Necessary.

UNIT II : Entity-Relationship Model: Introduction, the building blocks of an entity relationship diagram, classification of entity sets, attribute classification, relationship degree, relationship classification, reducing ER diagram to tables, enhanced entity-relationship model (EER model), generalization and specialization, IS A relationship and attribute inheritance, multiple inheritance, constraints on specialization and generalization, aggregation and composition, entity clusters, connection types, advantages of ER modeling.

UNIT III: Relational Model: Introduction, CODD rules, relational data model, concept of key, relational integrity, relational algebra, relational algebra operations, advantages of relational algebra, limitations of relational algebra, relational calculus, tuple relational calculus domain relational calculus (DRC, QBE.

UNIT IV: Structured Query Language: Introduction, History of SQL standard, Commands in SQL, Data Types in SQL, Data Definition Language, Selection Operation, Projection Operation, Aggregate functions, Data Manipulation Language, Table Modification Commands, Table Truncation, Imposition of Constraints, Join Operation, Set Operation, view, Sub Query, Embedded SQL.

UNIT V: PL/SQL : Introduction, Shortcoming in SQL, Structure of PL/SQL, PL/SQL language Elements, Data Types, Operators precedence, Control Structure, steps to Create a PL/SQL program, Iterative Control, Cursors, steps to create a cursors, Procedure, Function, Packages, Exceptions Handling, Database triggers, Types of Triggers.

Prescibed Text Book:

1. Fundamentals of Relational Database management systems by S.Sumathi, S.Esakkirajan, Springerpublications

Reference Books

1. "Database System Concepts" by Abraham Silberschatz, Henry Korth, and S.Sudarshan,McGrawhill, 2010, 9780073523323
2. " Database management systems" by RaghuramakrishnanMcGrawhill, 2002
3. "A Introductions to Data base systems" by Bipin C Desai.
4. "Principles of Data base systems" by J.D.Ullman.
5. "Fundamentals of Data base systems" by R.Elmansri and Navathe.

III B.Sc. Computer Science (19CS5B)

FIFTH SEMESTER SYLLABUS

SOFTWARE ENGINEERING

(W.e.f. 2019-20 Admitted Batch)

UNIT-I : INTRODUCTION: Software-Types of Software-Software Characteristics- What is Software Engineering-Software Development Life Cycle-Layers in Software Engineering-Software Engineering Process Paradigms-The Waterfall Model, The Spiral Model, The Iterative Model.

UNIT-II: REQUIREMENT ANALYSIS: Requirement Engineering Processes-Feasibility Study-Problem of Requirements-Types of Requirements-Software Requirements Specification-Software Requirement Analysis-Analysis Concepts and Principles-Analysis Process.

UNIT-III: SOFTWARE DESIGN: Software Design Process- Abstraction-Modularity-Software Architecture- Effective Modular Design-Cohesion and Coupling-Architectural design and Procedural design- Data flow oriented design. User Interface Analysis and Design-Interface Analysis-Interface Design Steps-Human Factors-Human Computer interaction-Computer Interface design-Interface Standards.

UNIT-IV: SOFTWARE QUALITY AND TESTING:

Software Quality Assurance: Elements of Software Quality Assurance- Quality metrics-SoftwareReliability. Software testing-Path testing-Control Structures testing-Black Box testing-Integration, Validation and System testing. Software Maintenance: Reverse Engineering and Re-Engineering.

UNIT-V: PROJECT MANAGEMENT:

The Management Spectrum-People, Product, Process, Project. Software Project Estimation: Resources-Empirical estimation Models- the COCOMO II Model- Planning. UML: Introduction to UML, Modeling Concepts, Features of UML, and Types of UML diagrams withexamples, Characteristics of UML, Advantages and Disadvantages of UML.

REFERENCE BOOKS:

1. Roger Pressman S., “Software Engineering: A Practitioner's Approach”, 7th Edition, McGrawHill, 2010.

2. Software Engineering Principles and Practice by Deepak Jain Oxford University Press
3. Sommerville, “Software Engineering”, Eighth Edition, Pearson Education, 2007
4. Pfleeger, “Software Engineering: Theory & Practice”, 3rd Edition, Pearson Education, 2009
5. Carlo Ghazi, Mehdi Jazayari, Dino Mandrioli, “Fundamentals of Software Engineering”, Pearson Education, 2003

III B.Com (Computer Applications) (19BCV56)

FIFTH SEMESTER SYLLABUS

Database Management System
(W.e.f. 2019-20 Admitted Batch)

Unit-I: Overview of Database Management System: Introduction, Data and Information, Database, Database Management System, Objectives of DBMS, Evolution of Database Management Systems, Classification of Database Management System.

Unit-II: File-Based System, Drawbacks of File-Based System, DBMS Approach, Advantages of DBMS, Data Models, Components of Database System, Database Architecture.

Unit-III: Entity–Relationship Model: Introduction, The Building Blocks of an Entity–Relationship, Classification of Entity Sets , Attribute Classification, Relationship Degree, Relationship Classification, Generalization and Specialization, aggregation and composition, CODD'S Rules, Relational Data Model , Concept of ,Relational Integrity.

Unit-IV: Structured Query Language: Introduction, History of SQL Standard, Commands in SQL, Data types in SQL, Data Definition Language (DDL), Selection Operation Projection Operation, Aggregate Functions, Data Manipulation Language, Table Modification, Table Truncation, Imposition of Constraints, Set Operations.

Unit -V: PL/SQL: Introduction, Structure of PL/SQL, PL/SQL Language Elements ,Data Types, Control Structure,, Steps to Create a PL/SQL Program, Iterative Control ,Cursors , Steps to Create a Cursor , Procedure, Function ,Packages ,Exceptions Handling, Database Triggers, Types of Triggers.

Prescribed Text Book:

1. S. Sumathi, S. Esakkirajan, Fundamentals of Relational Database Management Systems

Reference Books:

1. Paneerselvam: Database Management Systems, PHI.
2. David Kruglinski, Osborne, Data Management System McGraw Hill Publication.
3. Shgirley Neal and Kenneth LC Trunik Database Management Systems in Business – PHI.
4. Godeon C. EVEREST, Database Management – McGraw Hill Book Company.

5. MARTIN, Database Management – Prentice Hall of India, New Delhi.
6. Bipin C. Desai, “An Introduction to Database Systems”, Galgotia Publications.
7. Korth, Database Management systems.
8. Navathe, Database Management systems.

III B.Com (Computer Applications) (19BCV57)

FIFTH SEMESTER SYLLABUS

Web Technology
(W.e.f. 2019-20 Admitted Batch)

Unit-I: Introduction: HTML, XML, and WWW, Topologies, Bus, Star, Ring, Hybrid, Tree, LAN, WAN, MAN. **HTML**: Basic HTML, Document body, Text, Hyperlinks, Adding more formatting, Lists, Tables using colors and images. **More HTML**: Multimedia objects, Frames, Forms towards interactive, HTML document heading.

Unit-II: Cascading Style Sheets: Introduction, using Styles, simple examples, your own styles, properties and values in styles, style sheet, formatting blocks of information, layers.

Unit-III: Introduction to JavaScript: What is DHTML, JavaScript, basics, variables, string manipulations, mathematical functions, statements, operators, arrays, functions.

Unit-IV: Objects in JavaScript: Data and objects in JavaScript, regular expressions, exception handling, built-in objects, and events.

Unit-V: DHTML with JavaScript: Data validation, opening a new window, messages and confirmations, the status bar, different frames, rollover buttons, moving images, multiple pages in single download, text only menu system.

References:

1. Uttam Kumar Roy, Web Technologies, Oxford University Press.
2. Black Book HTML 5.0
3. Complete reference HTML 5.0
4. Web Technology, PHI Publications.

III B.Sc. Computer Science (19CS7)

SIXTH SEMESTER SYLLABUS

Web Technologies

(W.e.f. 2019-20 Admitted Batch)

UNIT – I: HTML:

Basic HTML, Document body, Text, Hyperlinks, adding more formatting, Lists, Tables using images. More HTML: Multimedia objects, Frames, Forms towards interactive, HTML document heading detail

UNIT – II:

Cascading Style Sheets: Introduction, using Styles, simple examples, your own styles, properties and values in styles, style sheet, formatting blocks of information, layers.

UNIT – III:

Introduction to JavaScript: What is DHTML, JavaScript, basics, variables, string manipulations,mathematical functions, statements, operators, arrays, functions. Objects in JavaScript: Data andobjects in JavaScript, regular expressions, exception handling

UNIT – IV:

DHTML with JavaScript: Data validation, opening a new window, messages and confirmations,the status bar, different frames, rollover buttons, moving images.

UNIT – V:

XML: defining data for web applications, basic XML, document type definition, presenting XML, document object model. Web Services

References:

1. Harvey M. Deitel and Paul J. Deitel,"Internet & World Wide Web How to Program", 4/e,Pearson Education.
2. Uttam Kumar Roy, Web Technologies from Oxford University Press
3. Jason Cranford Teague "Visual Quick Start Guide CSS, DHTML & AJAX", 4e, "Pearson Education.
4. TomNerinoDoli smith "JavaScript & AJAX for the web"Pearson Education 2007. JoshuaElchorn "Understanding AJAX"Prentice Hall 2006.
5. Hal Fulton "The Ruby Way", 2e,Pearson Education 2007.7.David A. Black "Ruby for rails" Dreamtech Press 2006. Faces" Wiely India 2006.

III B.Sc. Computer Science (19CS8)

SIXTH SEMESTER SYLLABUS

DISTRIBUTED SYSTEMS

(W.e.f. 2019-20 Admitted Batch)

UNIT I: Introduction to Distributed Computing Systems, System Models, and Issues in Designing aDistributed Operating System, Examples of distributed systems.

UNIT II: Features of Message Passing System, Synchronization and Buffering, Introduction to RPC and its models, Transparency of RPC, Implementation Mechanism, Stub Generation and RPC Messages, Server Management, Call Semantics, Communication Protocols and Client ServerBinding.

UNIT III: Introduction, Design and implementation of DSM system, Granularity and Consistency Model, Advantages of DSM, Clock Synchronization, Event Ordering, Mutual exclusion,Deadlock, Election Algorithms.

UNIT IV: Task Assignment Approach, Load Balancing Approach, Load Sharing Approach, ProcessMigration and Threads.

UNIT V: File Models, File Accessing Models, File Sharing Semantics, File Caching Schemes, File Replication, Atomic Transactions, Cryptography, Authentication, Access control and DigitalSignatures.

Reference Books

1. Pradeep. K. Sinha: " Distributed Operating Systems: Concepts and Design ", PHI, 2007.
2. George Coulouris, Jean Dollimore, Tim Kindberg: " Distributed Systems" , Concept andDesign, 3rd Edition, Pearson Education, 2005.

III B.Sc. Computer Science (19CS9)

SIXTH SEMESTER SYLLABUS

CLOUD COMPUTING

(W.e.f. 2019-20 Admitted Batch)

Unit I: Cloud Computing Overview–Origins of Cloud computing –Cloud components -Essential characteristics –On-demand self-service, Broad network access, Location independent resource pooling , Rapid elasticity, Measured service .

Unit II: Cloud scenarios –Benefits: scalability, simplicity, vendors, security. Limitations –Sensitive information - Application development –Security concerns -privacy concern with a third party -security level of third party -security benefits Regularity issues: Government policies

Unit III: Cloud architecture: Cloud delivery model –SPI framework, SPI evolution, SPI vs. Traditional IT Model Software as a Service (SaaS): SaaS service providers –Google App Engine, Salesforce.com and google platform –Benefits –Operational benefits - Economic benefits –Evaluating SaaS Platform as a Service (PaaS): PaaS service providers –Right Scale –Salesforce.com –Racks pace –Force.com –Services and Benefits.

Unit IV: Infrastructure as a Service (IaaS): IaaS service providers –Amazon EC2, Go Grid –Microsoft softimplementation and support –Amazon EC service level agreement –Recent developments –Benefits Cloud deployment model: Public clouds –Private clouds –Community clouds -Hybrid clouds - Advantages of Cloud computing.

Unit V: Virtualization: Virtualization and cloud computing -Need of virtualization – cost, administration, fast deployment, reduce infrastructure cost –limitations.
Types of hardware virtualization: Full virtualization - partial virtualization - para virtualization. Desktop virtualization: Software virtualization –Memory virtualization - Storage virtualization –Datavirtualization –Network virtualization.

Reference Books

1. Cloud computing a practical approach -Anthony T.Velte , Toby J. Velte Robert Elsenpeter TATA McGraw-Hill , New Delhi -2010
2. Cloud Computing: Web-Based Applications That Change the Way You Work and
3. Collaborate Online -Michael Miller -Que 2008

4. Cloud Computing, Theory and Practice, Dan C Marinescu, MK Elsevier.
5. Cloud Computing, A Hands on approach, Arshadeep Bahga, Vijay Madisetti, University PressMastering Cloud Computing, Foundations and Application Programming, Raj Kumar
6. Buyya, Christenvecctiola, S Tammaraiselvi, TMH

III B.Com (Computer Applications) (19EC7)

SIXTH SEMESTER SYLLABUS

E-Commerce

(W.e.f. 2019-20 Admitted Batch)

Unit-I: Introduction to E-Commerce: Scope, Definition, e-Commerce and the Trade Cycle, Electronic Markets, Electronic Data Interchange, Internet Commerce. Business Strategy in an Electronic Age: Supply Chains, Porter's Value Chain Model, Inter Organizational Value Chains, Competitive Strategy, First Mover Advantage - Sustainable Competitive Advantage, Competitive Advantage using E-Commerce - Business Strategy.

Unit-II: Business-to-Business Electronic Commerce: Characteristics of B2B EC, Models of B2B EC, Procurement Management by using the Buyer's Internal Market place, Just in Time Delivery, Other B2B Models, Auctions and Services from traditional to Internet Based EDI, Integration with Back-end Information System, Role of Software Agents for B2B EC, Electronic marketing in B2B, Solutions of B2B EC, Managerial Issues, Electronic Data Interchange (EDI), EDI: Nuts and Bolts, EDI and Business.

Unit-III: Internet and Extranet : Automotive Network Exchange, Largest Extranet, Architecture of the Internet, Intranet and Extranet, Intranet software, Applications of Intranets, Intranet Application Case Studies, Considerations in Intranet Deployment, Extranets, Structures of Extranets, Extranet products and services, Applications of Extranets, Business Models of Extranet Applications, Managerial Issues. Electronic Payment Systems: Issues and Challenges.

Unit-IV: Public Policy: From Legal Issues to Privacy : Legal Incidents, Ethical and Other Public Policy Issues, Protecting Privacy, Protecting Intellectual Property, Free speech, Internet Indecency and Censorship, Taxation and Encryption Policies, Other Legal Issues: Contracts, Gambling and More, Consumer and Seller Protection in EC.

Unit-V: Infrastructure For EC : Network of Networks, Internet Protocols, Web- Based client/Server, Internet Security, Selling on the Web, Chatting on the Web, Multimedia

delivery, Analyzing Web Visits, Managerial Issues, Equipment required for establishing EC Sites – Problems in Operation – Future of EC.

Reference Books

1. David Whiteley, "E-Commerce", Tata McGraw Hill, 2000.
2. E Business by Parag Kulakarni and Sunitha Jahirabadkar from Oxford University Press.
3. E Business by Jonathan Reynolds from Oxford University Press.
4. Eframi Turban, Jae Lee, David King, K. Michael Chung, "Electronic Commerce", Pearson Education, 2000.
5. R. Kalakota and A. B. Whinston, Frontiers of Electronic Commerce, Addison Wesley.
6. David Kosiur, Understanding Electronic Commerce, Microsoft Press.

   Soka, From EDI to Electronic Commerce, McGraw Hill.