Syllabus

of

Master of Computer Application

(Three Years Post Graduate Course)

Master of Computer Application (MCA)
Question Paper Scheme

Time: 3 Hours **Max. Marks: 80**

Q1 Either (From Unit 1)
a)
b)
Or
c)
d) 8 + 8 = 16

Q2 Either (From Unit 2)
a)
b)
Or
c)
d) 8 + 8 = 16

Q3 Either (From Unit 3)
a)
b)
Or
c)
d) 8 + 8 = 16

Q4 Either (From Unit 4)
a)
b)
Or
c)
d) 8 + 8 = 16

Q5 One compulsory question from each unit 4 * 4 = 16

Practical & Project Examination Scheme

1) **Time:** Minimum 2 Hours 30 Min. for conducting the practical examination subject to condition number of computers and printers available at the center.

    a. If there are less number of computer (50%) than total Enroll students for practical examination then additional 2 hours
    b. If there is less number of computer (25%) than total Enroll students for practical examination then additional 4 hours.

2) Practical Examination Evaluation Scheme

1) One question to Write and Execute for Taking Printout of Program	20 Marks
2) One question to Write Program	10 Marks
3) Record	10 Marks
4) Viva	10 Marks
	50 Marks

3) If Course consists of Project then Head/Co-ordinator of Computer Dept. must reject any title which is already carried out in any course in the college. It must maintain a Record that lists the projects along with other detail (like Guide, Session, and Number of students working on project) that was carried out so far and must be shown to external examiner at the time of examination.

Classification of Marks on Project

Report, Documentation and Project Execution	70 Marks
Viva voce	30 Marks
Total Marks	**100**

The marks of Project shall be notified as a whole out of 100 in Foil/C-Foil.

MCA-I
SEMESTER- I
PAPER -1: DISCRETE MATHEMATICS AND GRAPH THEORY (1MCA1)

Unit-I: Fundamental and Mathematics Logic

Fundamental- Sets and Subsets, Operations on Sets, Sequence, Division in the Integer, Matrices, Mathematics Structures. Logic-Proposition and Logical Operation Conditional Statements, Methods of Proof, Mathematical Induction

Mathematics Logic- Statements and Notation, Connectives, Normal Forms, Theory of Interface for the Statement Calculus, Inference Theory of the Predicate Calculus.

Unit-II: Counting, Relation and Diagraph, Function

Counting- Permutation, Combination, Pigeonhole Principle, Recurrence Relations. Relational and Digraphs- Product Sets and Partitions, Relations and Digraphs, Paths in Relations and Digraphs Properties of Relations, Equivalence Relations, Computer Representation of Relations and Digraph, Manipulation of Relations, Transitive Closure and Warshall's Algorithms. Functions-Definition and Introduction, Function for Computer Science, Permutation Functions, Growth of Functions.

Unit-III: Graph Theory, Boolean and Tree

Graph Theory: Basic Concept of Graph Theory, Euler Paths and Circuits, Hamiltonian Paths and Circuits. Other Relations and Structure- Partially Ordered Sets, Lattices Finite Boolean-Algebra, Functions of Boolean Algebra's, Boolean Function as Boolean Polynomials. Tree-Introduction, Undirected Tree, Minimal Spanning Trees.

Unit-IV: Semi group and Groups

Semigroups and Groups: Binary Operations Revisited Semigroups, Products and Quotations of Groups. Introduction to Computability- Languages Finite- State Machines, Semigroup, Machines and Language.

Books:

1) Bernard Kolman, Robert C. Busby, Sharon C. Ross, "Discrete Mathematical Structures", Prentice Hall Publication, "6th Edition", Year- 2008, ISBN No.– 0132297515.
2) Discrete Mathematical Structures with Application to computer science, Publication Tata McGraw –Hill, Year- 2003, ISBN-0-07-065142-6,
3) J.K.Sharma, "Discrete Mathematics", McMillan. Publication,Year-2009, ISBN No- 403-924759,

References:

1) Goodaire ,"Discrete Mathematics with Graph Theory ", PHI Publication, Year- 1997, ISBN No-0136020798.
2) J.K.Sharma , "Discrete Mathematics", McMillan Publication, Copyright Year- 2011, ISBN No- 9780230322301.
3) Rajendra Akerkar ,"Discrete Mathematics", Publication Pearson
4) Choudham, "A First Course in Graph Theory".
5) C. J. Liu "Combinational Mathematics".

MCA- I
SEMESTER - I
PAPER- 2: OPERATING SYSTEM AND LINUX
(1MCA2)

Unit-I: Introduction to Operating System and CPU Scheduling

Introductory Concepts: Operating System Functions and Characteristics, Historical Evolution of Operating Systems, Real Time Systems, Distributed Systems, Methodologies for Implementation of O/S Service System Calls, System Programs, Interrupt Mechanisms. CPU Scheduling: Levels of Scheduling, Comparative Study of Scheduling Algorithms, Multiple Processor Scheduling.

Unit-II: Hardware Management and Protection

Hardware Management: Hardware Organization, Device Scheduling Policies. Deadlocks: Deadlock Characterization, Deadlock Prevention and Avoidance, Deadlock Detection and Recovery, Practical Considerations. Concurrent Processes: Critical Section Problem, Semaphores, Classical Process Co-Ordination Problems and their Solutions, Interprocess Communications. Protection: Goals of Protection, Mechanism and Policies Implementation Dynamic Protection Structures, Revocation Protection Schemes in UNIX / MULTICS.

UNIT - III: Linux

Structure of Linux Operating System, Exploring the directory structure, Naming files and directories
Shell: Bourne, Korn and C-Shells
File system Commands: ls, mkdir, rmdir, cd, cat, mv, cp, rm, ln, pwd, more
Text editing with vi editor

UNIT IV: Shell Scripts

Pipe and Filters: sort, grep, egrep Permission modes: chmod, chown, chgrp Process: ps, kill Communication, Shell Scripts: Variables, Arithmetic in Shell Script, Control flow statements, Shell Paramters

Books:

1) Peterson Richard, "The Complete References Linux", Tata McGraw Hill, "4th Edition", Year- 2000, ISBN No.- 978-0072129403
2) Cox K, "Red Hat Linux Administrator's Guide", PHI Publication, Year- 2001, ISBN 13: 9780761521570

References:

1) Tannenbaum, "Operating Systems", PHI Publication, "4th Edition", Year- 2000.
2) Tackett, Burnett, "Using Linux", PHI, Fifth Edition,2001, ISBN 81-203-1653

MCA- I
SEMESTER -I
PAPER- 3: DIGITAL ELECTRONICS AND MICROPROCESSOR (1MCA3)

Unit-I: Fundamental Concepts and Number System

Fundamental Concepts - Introduction, Digital Signal, Analog Signal, Basic Digital Circuits, AND, OR, NOT, NAND, NOR, Exclusive OR, Exclusive NOR Operation, Boolean Algebra, De-Morgan's and Duality Theorems, Timing Diagram.

Number System and Codes- Introduction Number System, Binary Number System, Signed Binary Numbers, Binary Arithmetic's, 1's Compliment, 2's Compliment.

Unit-II: Combinational Logic and Flip-Flops

Combinational Logic Design - Introduction, Standard Representation for Logic Functions, K-Map Representation, Simplification of Logical Function using K-Map, Minimization of Logical Function, Don't Care Condition, Half Adder, Full Adder, Half Subtractor, Full Subtractor. Multiplexer and their Use in Combinational Logic Design, De-Multiplexer and their Use in Combinational Logic Design, Digital Comparators. Flip- Flops- Introduction, Clocked R-S Flip Flop, J–K Flip Flop, D-Type Flip Flop, T-Type Flip Flop, Master-Slave Flip Flop, Edge Triggered Flip Flop, Applications of Flip Flops. Shift Registers and Counters, Ripple Counters, Synchronous Counters, Decoder and Encoder.

Unit-III: Introduction to Microprocessor

Introduction to Microprocessor: Evolution of Microprocessor, Internal Microprocessor (8086 To Pentium) Architecture of 8086; Programming Model, Real Mode Memory Addressing, Introduction to Protected Mode Memory Addressing Memory Paging. Addressing Modes: Data, Program, Stack, Memory-Addressing Modes.

Unit-IV: Microprocessor 8086/8087

Instruction Set of 8086, Assembly Language Programming For 8086 Microprocessor, Memory Segmentation. Co- Processor (8087) Architecture, Programming with 8087, Multi-Processor System, Introduction to MMX Technology.

Books:

1) A. P. Malvino, Jerald A. Brown, "Digital Computer Electronics", Tata McGraw-Hill Publishing, "3rd Edition", Year-1995, ISBN-13:978-0-07-462235-3
2) R.P. Jain, "Modern Digital Electronics", Tata McGraw-Hill Publishing, "3rd Edition", Year- 2003, ISBN 0-07-049492-4
3) V. K. Puri, "Digital Electronics: Circuits and Systems", Tata McGraw-Hill Publishing, 13th Reprint, Year- 2006, ISBN 0-07-463317-1

References:

1) Dougles V. Hall, "Microprocessor and Interfacing", Tata McGraw-Hill Publishing, "Revised 2nd Edition", Year- 2006, ISBN-13: 978-07-060167-3
2) Barry B. Brey, "The Intel Microprocessors: Architecture, Programming & Interfacing" Pearson Prentice Hall,Year- 2009, ISBN-13: 9780135026458.

MCA- I
SEMESTER - I
PAPER- 4: DATA STRUCTURES AND FILE SYSTEM
(1MCA4)

Unit-I: Introduction to Data Structures

Data Structure and Algorithms- Introduction, Data Structures, Fundamentals of DS, Operations on DS, Data, Information, Concept of Data Types, Abstract Data Types, Different Approaches for Deigning an Algorithm, Type of Algorithm, Algorithm of Analysis, Complexity of Algorithm, Big-O Notation, String- String Operation and Function. Arrays- Introduction, Types of Arrays, Memory/Storage Representation of One And Two Dimensional Array, Declaration of Array, Multidimensional Array Number of Elements in 2-D, Jagged Array, Sparse Matrix, Records and Pointers, Polynomial. Stacks- Introduction and Definition, Array Representation of Stack, Application of Stack, Hierarchy of Operation, Representation of Arithmetic Expression, Multiple Stack , Stack as An ADT.

Unit-II: Recursion, Queues and Link List

Recursion- Introduction, Recursion Properties, Applications of Recursion, Advantages and Disadvantages of Recursion, Tail Recursion, Linear and Binary Recursion ,Scanning Folders Recursively, Nested Recursion, Recursive Function as an Argument, Recursion and Array, Recursion and String, Tower of Hanoi, Concept of Simulation. Queues- Introduction, Applications of Queue, Various Representations of Queue, Type of Dequeue, Priority Queues, Application of Priority Queue, Queue as an ADT. Linked List- Introduction, Dynamic Memory Management, Definition of Linked List, Application of Linked List, Representation of Linked List, Memory Allocation, Garbage Collection, Free List, Various Representation of List.

Unit-III: Tree and Graphs

Trees- Introduction, Definition of Trees, Binary Tree, Type of Binary Tree, Operation on Binary Tree, Traversal of Binary Tree, Binary Search Tree (BST), Expression Trees, Memory Representation of Binary Tree, Threaded Binary Tree, AVL Tree, B-Tree. Graphs: Definition of Graph, Various Terminology Used in Graph, Sequential Representation of Graph, Path Matrix, Spanning Tree, Minimum Spanning Tree (Kruskal Algorithm, PRIM'S Algorithm), Traversing a Graph.

Unit-IV: Sorting and Searching, File Structure

Sorting- Definition of Sorting, Classification of Sorting ,Stability, Comparison of Sorting Method, Bubble Sort, Sequential Sort, Insertion Sort, Selection Sort, Merge Sort, Shell Sort, Radix Sort, Heap Sort, Quick Sort, Topological Sorting. Searching- Definition, Type of Searching, Soundex. File Structure- File Concept, Operation on File, File Type, File Structure, Basic File Terminology, File Organization, Factors Affecting, Type of File Organization, Hashing, Hash Function, Hash Function, Types of Hash Function, Method to Collision.

Books:

1) D. Samanta, "Classical Data Structure", Prentice Hall India, New Delhi.
2) Lipschutz Schaums, "Data Structure", Outline Series TMH Publication, Year-2003, ISBN-0-07-099032-8

Reference:

1) Tenenbaum, "Data Structures Using C and C++", Prentice Hall India Publication, "2nd Edition", Year-2006, ISBN-81-317-0328-2.
2) Deshpande and kakade, "C and Data Structure", Dreamtech Publication, Year-2007, ISBN-81-7722-424-7.

MCA- I
SEMESTER - I
PAPER- 5: JAVA CONCEPTS
(1MCA5)

UNIT – I: Introduction to Java
History of Java, Features of Java, JDK Environment, The Java Virtual Machine, Garbage Collection
Programming Concepts of Basic Java: Identifiers and Keywords, Data Types in Java, Java coding Conventions, Expressions in Java, Control structures, decision making statements, Arrays and its methods

UNIT – II: Objects and Classes
Object Fundamentals, Pass by value, 'this' reference, Data Hiding and Encapsulation, Overloading, Overriding Constructors, Finalization, Subclasses (Inheritance), Relationship between super class object and subclass object, implicit subclass object to super class object Conversion, Dynamic method dispatch.
Language Features: Scope rules, Static data, Static methods, Static blocks, Modifiers of Class, Method, Data Members and Variable, Abstract Classes, Interfaces, Packages, Importing Packages and Classes, User define packages.

UNIT – III: Exception Handling & Multithreading
Types of Exceptions try, catch, finally, throws keywords, creating your own exception, exceptions and Inheritance
Multithreading: Multithreading Concept, Thread Life Cycle, Creating multithreading Application, Thread Priorities, Thread synchronization.

UNIT – IV: Abstract Window Toolkit & Streams and File I/O
Abstract Window Toolkit: Components and Graphics, Containers, Frames and Panels, Layout Managers-Border Layout, Flow Layout, Grid Layout, Card Layout, AWT all Components, Event Delegation Model, Event Source and Handlers, Event Categories, Listeners, Adapters-Anonymous Classes, Applets-Applet Life Cycle, Applet Context, Inter applet communication.
Streams and File IO: Files and Stream, Stream classes, Reader Writer classes, File class Tests and Utilities, Serialization and de serialization.

Books:

1) Cay S Horstmann Gary Cornell, "Core JAVA 2 Vol -1, 2", The Sun Micro Systems Press, New Delhi, ISBN-13: 978-0470105559
2) Peter Van der Liden, "Just Java", The Sun Micro Systems Press, New Delhi, ISBN, 0130897930
3) E. Balguruswamy, "Programming with Java - A Primer", The Sun Micro Systems Press, New Delhi, ISBN 81-265-0931-7

References:

1) Deitel and Deitel, "Java How to Program", Prentice Hall Upper Saddle River, New Jersy 07458 (US). ISBN 0-13-034151-7
2) Jerry R Jackson Alan L, "Java by Example 1.2", McClellan Publication

MCA- I
SEMESTER - II
PAPER 1: SYSTEM MANAGEMENT
(2MCA1)

Unit-I: Management Planning and Control

History of Managements Thought, Classical Principles of Management, Modern Managements Principles, Management Movement, General Management, Scientific Management, Engineering Managements, Manufacturing Management, System Management, Time Management, Managerial Process of Planning, Management Functions, Management Control, Skills of Managers, Responsibilities of Management, Hidden Practices of Management, Managerial Effectiveness, Self-Evaluation of Managerial Approaches, Checklist of Competent Manager. Organization Planning, Design and Development- Introduction, Organization planning, Organization Design, Organization Development Social Responsibility and Ethics of Management and Society- Operating in a pluralistic Society, Social responsibility of Managers, Ethics in Managing.

Unit-II: Human Resource Planning and Management

Human Resource Planning, Job Analysis, Acquisition of Human Resources, Training and Development, Human Resources Motivation, Organization Development and Change, Group Behavior, Working Life and its Quality, Communication, Leadership, Workers Participation in Management, Promotion Policy, Job Evaluation, Collective Decision- Making, Trade Unions, Collective Bargaining, Industrial Disputes, Industrial Safety, Health and Safety at Work.

Unit-III: Total Quality Management

Introduction, Total Quality Management, ISO 9000, Quality Audit. Product Design and Development- Introduction, Design of the Product, New Product Development. Maintenance and System Reliability- Introduction, Objective of Maintenance, Failure Analysis, Maintenance System, Types of Maintenance, Performance Criterion for Maintenance System, Maintenance Management, Impact of Terotechnology on Maintenance Management, Maintenance Costing and Budgeting, Maintenance Performance Indices.

Unit-IV: Privatisation, Liberalisation and Globalisation

Introduction, Reasons for Privatisation, Determinants and Constraints of Privatisation, Global Experience, Necessary Precautions in Privatisation, Some Impacts of Privatisation in the Global Context, Methods of Privatisation, Disinvestments Techniques, Privatisation from Within, Fringe or Cold Privatization, Regulatory Mechanism Consequent upon Privatization, Liberalisation, Liberalisation in Practice, Globalisation, Globalisation and Indian Corporate, Implications and Impact, Introduction to Privatization Policy and Practice in India. International Management and the Future- International Management in Selected Countries, Japanese Management and Theory Z, International Management and Multinational Corporations, Managerial Functions in International Business, Toward a Unified, Global Theory of Management.

Books:

1) Gupta and Sharma, "Management of Systems ",McMillan Publication
2) Koontz & Weihrich, "Essential of Management", TMH,ISBN-0-07-062030-X
3) Sheikh- S.Chand, "Human Resource Development and Management".

References:

1) K.Mohan & Banerjee, "Developing Communication Skills", MacMillan Publication
2) Bhatia & Sheikh, "Profession Communication Skills", S Chand , ISBN-8121920922

MCA-I
SEMESTER - II
PAPER 2: DATA WAREHOUSING AND SQL
(2MCA2)

Unit-I: Data Warehouse and OLAP

Introduction to Data Warehousing: Characteristics of a Data Warehouse, Data Warehouse Architectural Strategies, Design Considerations, Data Content, Building a Data Warehouse, Metadata, Tools for Data Warehousing, Performance Considerations, Crucial Decisions in Designing a Data Warehouse. Various Technological Considerations: OLTP and OLAP Systems, Data Modeling, Categories of OLAP Tools, Managed Query Environment (MQE), OLAP Tools and Internet.

Unit-II: Data Mart and Data Mining Tools

Data Mart: Data Mart, Type of Data Mart, Loading a Data Mart, Metadata for a Data Mart, Data Model for a Data Mart, Software Component for a Data Mart, Tables in Data Mart, Security in Data Mart. Data Mining and Tools: Introduction, From Data Warehouse To Data Mining, Steps of Data Mining, Data Mining Algorithm, Database Segmentation, Predictive Modeling, Link Analysis, Tools for Data Mining.

Unit-III: SQL Basic, Create, Modify and Retrieve Database Objects

SQL Basic Concept and Principles: SQL Language, Role of SQL, SQL Feature and Benefits, Relational Database and SQL, Fundamental SQL Concepts and Principle, SQL Data Types, Constants, Operators, Expressions, SQL Functions and Data Integrity. Creating, Modifying and Retrieving Database Objects: Data Definition Language, Data Manipulation Language, Table, Index, Views, Aliases, Synonyms, Schemas and Sequences, Data Queries – Select Statement, Query Result, Single Table, Multiple Table Queries, Types of Clause, Types of Joins, Sub Queries and Queries Expression.

Unit-IV: Transaction Processing, Database Security and PL/SQL

Transaction Processing and Database Security: Transaction Control Language, Commit, Rollback, Save Point, Managing Security and Privileges, Grant, Revoke, Using Views for Security, Using Views, Stored Procedure and Triggers for Security, Locking Levels, Shared and Exclusive Locks, Deadlock, Avoidance, Locking Techniques.

Programming With SQL:

Programmatic SQL Techniques, Simple Embedded SQL Statement, Data Retrieval in Embedded SQL, Cursor Based Delete and Update, Trigger, After and INSTEAD OF Trigger, Database Level and Server Level Triggers.

Books:

1) C.S.R. Prabhu, "Data Warehousing", PHI Publication, "3rd Edition", Year- 2010, ISBN No- 9788120336278
2) Pang-Ning Tan, Michael Steinbach and Vipin Kumar, "Introduction to Data Mining", Pearson Addison Wesley Publication " 1st Edition", Year- 2005, ISBN No- 0321321367
3) Alan Beaulieu," Learning SQL", O'Reilly Publication," 2nd Edition", Year- 2009, ISBN No- 0596520832
4) Alex Kriegel and Boris M. Trukhnov, "SQL Bible", Wiley publication, "2nd Edition", Year- 2008, ISBN No- 0470229063

References:

1) Amitesh Sinha, "Data Warehousing", Thomson publication, "1st Edition ", Year- 2001, ISBN No- 0790612496
2) Larry Rockoff, " The language of SQL", Course Technology PTR publication, " 1st Edition", Year- 2010, ISBN No- 143545751X
3) James Groff & Paul Weinberg, "The Complete Reference: SQL ", Tata Mcgraw Hill publication, "3nd Edition", Year- 2009, ISBN No- 0071592555

MCA- I
SEMESTER - II
PAPER 3: SYSTEM ANALYSIS WITH PROJECT MANAGEMENT (2MCA3)

UNIT – I: System Concepts

Systems Concepts: Systems approach, characteristics, Types of Systems; Elements – Input, Output, Environment, Boundary Interface, Feedback & Control; MIS, Types of MIS: TPS, OAS DSS. KWS, Data and Information, Value of Information, Information Life Cycle, Data Vs Information,

UNIT – II: System Analysis

System Analysis: System Development Life Cycle (SDLC), Information Gathering (Sources, Methods, Interviews, Questionnaires, Observation, Document Analysis etc.), Feasibility study, Analysis (PARIS model), Design, Implementation, Planning and Control for System success. Tools of Structure Analysis (Data Flow Diagram, Data Dictionary, Decision Tree, Decision Table, CASE tools)

UNIT – III: System Design & Implementation

System Design: System Design Principle, Input Design, Output Design, Form Design

Implementation: Testing, Level of Testing, Nature of Test Data, Conversion, User Training, Hardware and Software Selection

Documentation, Types of Documentations, Quality Assurance, Privacy, Disaster Recovery Plan, Maintenance Review

UNIT – IV: Project Management

Introduction, Management Spectrum, Project Manager, Project Estimation, Project Scheduling

Quality Management: Quality Concept, Software Quality, Software Reliability, ISO 9000 Quality standards

Introduction to MS-Project

Books:

1) S. Sadagopan,"Management Information System", PHI, ISBN, 8120311809
2) Goyal,"Management Information System", ISBN 0333 933885
3) Jawdejar, " Management Information System",TMH, ISBN 0-07-044575-3
4) Elias Award, "System Analysis & Design", Golgotha Publication, 2nd Edition, ISBN: 81751568-X
5) Maylor,"Project Management", 3rd Edition, Pearson Publication, ISBN-9788177580365.

References:

1) Rogern Pressman,"Software Engineering Practition Approach", ISBN 007-124083-7
2) Rajib Mall, "Fundamental of Software Engineering", PHI, 2nd Edition, ISBN-978-81-203-2445-9
3) Newton," Project Management Step By Step ",Pearson Publication,ISBN-9788131719152

MCA- I
SEMESTER - II
PAPER- 4: E-COMMERCE AND WEB DESIGN
(2MCA4)

UNIT-I: E-Commerce and Introduction to Internet

E-Commerce- Introduction, Application, Definition, Benefits of E-Commerce, Impediments of E-Commerce, Difference between Traditional and Electronic Commerce, E-Commerce Service,

Electronic Data Interchange (EDI): Introduction, Benefits, Value Added Services (VAS), On-line Payment Services, Trade Cycle.

Introduction- Internet, Basic Internet Terms**,** Internet Addressing, Protocols, Internet Protocols, Services of Internet, Search Engine**.**

UNIT-II: Basic of HTML and Tag

Introduction to HTML - Introduction, Features of HTML, Advantages & Disadvantages of HTML, HTML Editors, Step to Create and View HTML Document, Basic Structure of HTML Program

Tags & Attributes- Nesting of Tags, Classification of HTML Tags, Block Formatting Tags.

List - Introduction to Lists, Unordered List, Ordered List, Definition List, Nested List, Difference Between Ordered and Unordered List.

Linking - Introduction, Type of Hyperlink Creation, Working with Links, Pathname and Types, Types of Linking or Anchors.

UNIT-III: Advanced HTML

Graphics in Web Page - Image Tag, Align Images, Embedding Inline Images and External Images,

Tables - Basic table tags and their related attribute

Frames- Frames, <Frame> and <Frameset> tags,

Form designs, Form Controls, Text controls, password fields, radio buttons, and check boxes. Reset and submit buttons, form control selection, option processing and text area.

UNIT -IV: CSS and XML

CSS: Defining style sheets features, adding style to document, Unlink to a single sheet. Embedding style sheet, Using inline style and its properties,

XML: Introduction. XML and SGML, Design goals of XML, Application of XML; XML Software, XML tags, Structure of XML documents, Element markup, Attribute markup,

Namespaces: Qualified name and Unqualified names, Namespace scope, default name space, working with formatting

Working with DTD: Introduction, HTML and DTD, Benefits of the DTD, Structure. of DTD, and Declarations of variable in DTD Element name, Occurrence indicators, Connectors,

Books:

1) Greenstein and Feinman," Electronic Commerce", TMH,2000, TMH, ISBN-0-07-042141-2,.
2) C.Xavier, "Web Technology and Design",TMH, ISBN-978-81-224-1450-9

References:

1) Complete HTML , BPB,2010, ISBN- 978-0-07-070194-6.
2) Bhushan Dewan,"E-Commerce by ", S.Chand, ISBN - 81-219-2083-3

MCA- I
SEMESTER - II
PROJECT
(2MCA5)

Instruction:

Towards the end of the second semester of study, a student will be examined in the course "Project Work".

a. Project Work may be done individually or in groups (Maximum 2 students) in case of bigger projects. However if project is done in groups, each student must be given a responsibility for a distinct module and care should be taken to monitor the progress of individual student.
b. The Project Work should be done using the tools covered in Master of Computer Application
c. The Project Work should be of such a nature that it could prove useful or be relevant from the System-oriented/Application/commercial / management angle.
d. The project work will carry 100 marks.
e. The external viva-voce examination for Project Work would be held as per the Examination Time Table of the second year of study, by a panel of one external and one Internal examiner.
f. Head/Co-ordinator of Computer Dept. must reject any project title which was already carried out in any computer course in the college. It must maintain a Record that lists the projects along with other detail (like Guide, Session, and Number of students working on project etc) that was carried out so far and must be shown to external examiner at the time of examination.

Types of Project

As majority of the students are expected to work out a project in some industry/research and development laboratories/educational institutions/software export companies, it is suggested that the project is to be chosen which should have some direct relevance in day-today activities of the candidates in his/her institution. The Applications Areas of project - Financial/Marketing/Database Management System/ Relational Database Management System/E-Commerce /Internet/ Manufacturing/ web Designing/Hardware and Software interaction based etc.

Project Proposal (Synopsis)

The project proposal should be prepared in consultation with the guide. The project guide must be a person having minimum Qualification MCA/M.Sc.(Computer)/ M.Sc. (Maths/Electronics/Statistics/Physics + Post B.Sc. Dip. In Comp. Sc. & Appl.) The project proposal should clearly state the objectives and environment of the proposed project to be undertaken. It should have full details in the following form:

1. Title of the project
2. Objectives and Hypothesis of the Project
3. Project Category (DBMS/RDBMS/OOPS/Web Designing/Internet etc.)
4. Tools/Platform, Languages to be used
5. A complete Structure of the program:
    i. Analysis.

ii. Numbers of Modules.
iii. Data Structures or Tables
iv. Process Logic.
v. Types of Report Generation.

6. Scope of future Application.

Project Report Formulation.

1. Title Page.
2. Certificate Page.
3. Declaration Page.
4. Acknowledgment Page.
5. Index or Content Page.
6. Documentation.
   i. Introduction/Objectives.
   ii. Preliminary System Analysis.
      - Identification of Need.
      - Preliminary Investigation.
      - Feasibility Study.
      - Need of New System.
      - Flaws in Present System.
   iii. Project Category.
   iv. Software Requirement Specification.
   v. Detailed System Analysis.
      - Data Flow Diagram.
      - Numbers of Modules and Process Logic.
      - Data Structures and Tables.
      - Entity-Relationship Diagram.
   vi. System Design.
      - Source Code.
      - Input screen & Output Screen.
   vii Validation Checks.
   viii Implementation, Evaluation and Maintenance.
   ix Security Measures taken.
   x Future Scope of the project.
   xi Bibliography

Appendix

- Survey Questionnaire