M.SC. INFORMATION TECHNOLOGY AND MANAGEMENT

S. No.	Subject	Maximum Marks	Exam Hours
1	Management Principles	100	3
2	Data structures and algorithm using	100	3
3	Study of Novel	100	3
4	Literacy Criticism	100	3
5	Aspects of Language	100	3

Second Year

S. No.	Subject	Maximum Marks	Exam Hours
6	Shakespeare	100	3
7	Fiction	100	3
8	Comparative Literature and Translation	100	3
9	Indian English Literature	100	3
10	American Novel	100	3

MANAGEMENT PRINCIPLES

UNIT I

Basics of Management:

Definition of Management - Evolution of Management thought – Early & Modern Approaches - Management Vs. Administration – Management Science or Art.- Managers vs. Entrepreneurs-Managers vs. Leaders.

UNIT II

Planning:

Nature and Importance- steps in planning- types of plans- Planning premises – Objective-Characteristics and Hierarchy of objectives- Management by objectives- Management by Exception.

UNIT III

Organizing:

Nature of organizing- formal and informal organization-structure and process of organizing- authority and responsibility- Delegation of authority- Departmentation and its basis - Decision making-Styles of Decision Making.

UNIT IV

Staffing and Directing:

Staffing- purpose of staffing- recruitment and selection- training and development-performance appraisal- principles of direction- elements of direction- span of supervision-Motivation- Leadership – Communication.

UNIT V

Controlling:

Concept of Managerial Control - Nature of control - Needs for control - Significance and limitations of control - Types of control - Control process – Control techniques: Traditional and Modern Techniques.

Text Books:

1. Tripathi and Reedy " Principles of Management" TMH Edition II, 1994.

2. Hereld Koontz and Heinz weihrich "Essentials of Management" McGraw Hill Publishing House, Singapore International Edition, 1990

Reference:

1. L.M. Prasad, "Principles and Practice of Management" Sultan chand and sons Publishers

2. Joseph. L. Massie "Essentials of Management" Prentice Hall, 1985.

3. Stephen P Robbins and David A Decenzo "Fundamentals of Management" , Pearson Education, Third Edition, 2000.

4. C.B.Gupta - Management: Theory and Practice, Sultan chand and sons Publishers

Paper - 2
DATA STRUCTURES AND ALGORITHMS USING C AND C++

UNIT I
INTRODUCTION

Introduction - Linear Data Structure - Arrays - Lists - Stacks - Queues - Linked Lists – Implementation - Applications.

UNIT II
TREES

Trees - General and binary trees – Representation - Traversals – Threaded Binary Trees - Search trees - Balanced trees.

UNIT III
SORTING

Sorting - Insertion sort - Quick sort - Merge sort – Iterative Merge Sort – Recursive Merge Sort - Simple Merge Sort - Heap sort - Sorting on several keys - External sorting.

UNIT IV
GRAPHS

Graphs Representation - Traversal - Topological tables and files - Sorting - Applications - Representation - Marking techniques - Files - Sequential - Index sequential - Random access organization - Implementation.

UNIT V
ALGORITHM ANALYSIS AND DESIGN

Algorithms - Time and Space complexity - Sorting - Design techniques - Knapsack - Traveling salesman – Dynamic Programming – Greedy Algorithm – String Matching Algorithm.

Text Book

1. Jean Paul Tremblay, Paul G.Sorenson, "An Introduction to data structures with

Application", Tata McGraw Hill, 1995.

2. "Computer Algorithms and Introduction to Design and Analysis", - Sara Base, Allen ran Gelda 2000 Pearson

References

1. Kruse R.L., Leung BP.Tondo C.L, "Data structures and program design in C", PHI, 1995.

2. Ellis Horowitz, Sahni & Dinesh Mehta, "Fundamental of data structures in C++", Galgotia, 1999.

3. Tanenbaum A.S, Langram Y., Augestein M.J,"Data structures using C", PHI, 1992

4. Horowitz, Sahni, S.Rajasekaran, "Computer Algorithms", Galgotia, 2000.

SOFTWARE ENGINEERING

UNIT I
FORMAL SPECIFICATIONS

Models - Specification languages - Abstraction levels - Domain specification language.

UNIT II
SOFTWARE MEASUREMENT

Frame work - Process attributes - Effort, time and cost measurement - Cost estimation - Product attributes - Size - Control flow structure - Modularity - Complexity measures - Technical metrics.

UNIT III
SOFTWARE REUSABILITY

Reuse dimensions - Reuse of intermediate products - Reuse and the Software Life cycle - Reuse tools and techniques.

UNIT IV
TOOLS

Computer aided software Engineering - Project management tools - Analysis and design tools - Programming tools - Integration and testing tools.

UNIT V
SOFTWARE ENGINEERING STANDARDS

ISO - SET - Specification - Design - Programming -Testing

References:

1. Hans van Vilet, software Engineering Principles and Practice, John Wiley and Sons Ltd, 2000.

2. Roger Pressman, Software Engineering - A Practitioner Approach, 5th Edition, McGraw Hill, 2000.

3. Normal. E. Fenton, Software Metrics, Chapman and Hall, 1991.

4. J.B.Wordworth, Software Development with Hall, 1991.

5. J.B.Wordworth, Software Development with Z, Addison Wesley, 1992.

Paper – 4

ARTIFICIAL INTELLIGENCE AND NEURAL NETWORK

UNIT – I

Introduction – Problems, problem spaces and search – Heuristic search Techniques. Knowledge representation issues – Representing Knowledge using Rules – Symbolic Reasoning under uncertainty.

UNIT – II

Statistical Reasoning – Weak and Strong Slot – Filler structures – Game playing – Planning. Understanding – Natural Language Processing – Parallel and Distributed AL.

UNIT – III

Introduction – background – Knowledge based information processing – neural – neural information Processing – Hybrid intelligence – basic neuron model – network properties – node properties – system dynamics – inference and learning – classification model – association model – optimization model – self organizing models.

UNIT – IV

Learning – definition – supervised & unsupervised learning – statistical learning – neural network learning – back propagation – generalization – radial basis function – reinforcement learning – temporal difference – ART – Genetic algorithms – complex domains – expert systems heuristics – Hierarchical model – hybrid model – differentiation model – control networks.

UNIT – V

Knowledge based neural networks – rule based neural networks – network training – network revision – examples of theory revision – decision tree based neural networks – constrained based neural networks. Incremental learning – Fundamental principle – neural network approaches – probabilistic neural networks – Polynomial adalines – cascade correlation learning – Incremental RBCN.

Text Books

1. Elaine Rich and Kevin Knight, 'Aritificial Intelligence', TMH, 1998. (Unit I & II)
2. Limin fu, 'Neural networks in Computer Intelligence', Mc Graw Hill, 1994, International Edition. (Unit III, IV and V)

Reference:

1. Dan. W. Patterson, 'Introduction to Artificial Intelligence and Expert Systems', PHL, 1998.

Paper – 5

MANAGEMENT INFORMATION SYSTEM

UNIT I

Introduction:

Understanding Information Systems – The Changing face of Business Environment – Emerging trends in Information Technology – Managing   E-Transformation – Evolution of Business process, organizational structure, and IT Architecture.

UNIT II

Information Systems For Decision Making:

Information systems – Types of Information systems – Transaction processing Systems – Management Information Systems – Intelligent support systems – Office Automation Systems – Categories of MIS – MIS and organization structure – characteristics of MIS – Classification of MIS – MIS and Levels of Management – Implementation of MIS.

UNIT III

Functional Management Systems:

Marketing Information systems – Finance Information systems – Accounting Information system – Personnel Information Systems – Production Information Systems – Inter relationship of functional management Information Systems.

UNIT IV

Enterprise Information Systems:

Introduction – Evolution of Enterprise Information Systems – ERP- The Enterprise solutions – ERP market – Introduction to E-business , E-CRM Systems – Sales force Automation – Customer service and support Automation – Enterprise marketing automation (EMA) – Comparative Analysis of E-CRM software vendors and products – Evaluating an E-CRM product.

UNIT V

Information System for Business effectiveness:

      The Role of CIO-Challenges of a CIO – The Impact of Information Systems on organizational performance – Importance of Evaluating the Impact of Information Systems on Business effectiveness – Business Effectiveness as a Function of cost, value, performance, and competitive positioning- valuation process of Information systems Applications.

Text Book:

1. Mahadeo Jaiswal, Monika Mital, Management Information systems – Oxford University Press, New Delhi.
2. Kenneth C.Laudon and Jane Price Laudon, Management Information Systems-Managing the Digital firm, Pearson Education, Asia-2002.
3. James AO'Brein. Management Information Systems. Tata Mc Graw Hill, New Delhi-1999.

Reference:

1. Gordon B.Davis, Management Information System: Conceptual Foundations, Structure and Development, McGraw Hill, 1974.
2. Joyce J Elam, Case series for Management Information Systems, Simon and Schuster Custom Publishing-1996.
3. Steven Alter Information Systems-A Management Perspective-Addison-Wesley 1999.
4. Turban, Mc.Lean and Wether be. Information Technology for Management-Making connections for strategic

Paper – 1 INTERNET AND JAVA PROGRAMMING

UNIT I :

Internet connection concepts – Intranets : Connecting LANs to the internet – E-Mail concepts – E-Mail security : Reasons to secure the messages, Public key cryptography, Using cryptography with E-Mail – Online Chatting and Conferencing Concepts – WWW concepts.

UNIT II:

Fundamentals of Object Oriented Programming – Java evolution – Overview of JAVA Language – constants, variables and Data types- Operators and Expressions – Decision making: Branching and Looping.

UNIT III:

Classes, Objects and Methods – Arrays, Strings and Vectors – Multiple inheritance.

UNIT IV:

Packages – Multithreaded Programming – Managing Errors and Exceptions.

UNIT V:

Applet programming – Graphics Programming – Managing Input / Output files.

Reference Books

1. D.Norton and H.Schildt, Java2 : the complete reference, TMH 2000.

2. Internet & World wide Web How to program, Deitel & Deitel, Prentice Hall 2000.

3. Java How to program,Deitel & Deitel, Prentice Hall 1999.

4. Core Java Vol.1 and Vol. 2, Gary Cornell and Cay S.Horstmann, Sun Microsystems Press 1999.

5. Active X source Book, Ted Coombs, Jason Coombs and Don Brewer, John Wiley &sons 1996.

Paper - 2

MANAGEMENT ACCOUNTING

UNIT I

Basic Accounting Model:

Accounting - Definition, concepts, conventions, and classification of Accounting financial accounting- distinction between capital and revenue items – basic records – construction of financial statement – depreciation accounting.

UNIT II

Cost Accounting:

Cost Accounting – elements of cost, preparation of cost sheet – Job costing – process costing – pricing of material issues – FIFO, LIFO, Simple average, weighted average – Basic stock with FIFO and LIFO.

UNIT III

Cost volume profit analysis :

Marginal costing – Application of Marginal costing – advantages and disadvantages, Relevant cost in decision making, cost volume profit analysis and break even analysis.

UNIT IV

Management Accounting and Budgets & Budgetary Control:

Management Accounting – Definition -Budgets, flexible budgets, control of programme expenses profit Budgeting and analysis, Zero base budgeting.

UNIT V

Standard costing and Variance Analysis:

Historical and combination cost systems, differential cost and Direct costing, variance analysis and evaluation of divisional performance

Text Books:

1. S.N.Mageshwari, "Principles of Management Accounting and Analysis" Sultan & Chands, New Delhi.Ed.2003.

References:

1. R.S.N.Pillai and Bagavathi-Management Accounting.S.Chand & Co.Ltd., New Delhi(2002 edition)

2. R.Narayanaswamy-Financial Accounting-A Managerial Perspective-1997.Prentice Hall India Pvt.Ltd., New Delhi.

3. Bhattacharya S/K.John Dearden Accounting for Management Text and cases (2000 edition)-Vikas publishing House. New Delhi.

4. Charles T.Horngren Introduction to Management accounting (2001 edition) Prentice Hall. New Delhi.

5. M.Y.Khan & P.K.Jain-Management Accounting Tata Mc Graw Hill Publishing Company Ltd.

6. M.A.Sahaf-Management Accounting (Principles&Practice): 2000 edition Vikas Publishing House Pvt.Ltd., New Delhi.

Paper – 3 PRINCIPLES OF COMPILER DESIGN

UNIT – I

Introduction to Compilers: Simple one-pass compiler – Lexical Analysis.

UNIT – II

Symbol tables: Incorporating a symbol table – symbol tables – entries – list data structures for symbol table – Hash tables – scope information – syntax analysis – parsing.

UNIT – III

Syntax – directed translation – Type checking type systems – specifications of simple type checker.

UNIT – IV

Runtime organization: Source language issues Organizations – Storage allocation strategies – parameter passing. Intermediate code generation: Intermediate languages – declarations – assignment statements – Boolean expressions – case statements.

UNIT – V

Code generation: Issues in design of code generator – target machine – run-time storage management – basic blocks and flow graphs – a simple code generator. Code optimization: Introduction – principle sources of optimization of basic blocks – loop in flow graphs.

TEXT BOOKS:

1. A.S. Aho. R. Sethi and J.D. Ullman, compilers – Principles, Techniques and tools, Addition Wesley Publishing Company, 1986.

Reference:

1. Allen L. Holub, 'Compiler Design in C', Prentice Hall of India, 1993.

Paper – 4 BUSINESS ORGANIZATION AND COMMUNICATION

UNIT – I

Introduction – Meaning and Definition of Business – Characteristics of Business – Scope of Business – Business Systems – Objectives of Modern Business – Meaning of Definition of Organization – Essentials of a Successful Business – Qualities of a Successful Businessman – Development of Growth of Various Forms of Business Organization – Business Ethics.

UNIT – II

Non-corporate Enterprises – Sole Proprietorship Concern – Partnership Firms – Joint Hindu Family firm. Forms of Corporate Enterprises – Joint Stock Companies – Co-operative Institutions.

UNIT – III

Introduction – Meaning of the Terms Plant, Firm and Industry – Measures of Size – Large-scale Units – Reasons for the Survival of Small-scale Undertakings. Introduction – Location and Site – Ideal Location – Circumstances under which the Problems of Plant Location may arise – Factors Influencing Location – Localization of Industries – Decentralization of Industries. Factors Influencing the Selection of Site – Classification of Sites – Conclusion.

UNIT – IV

Introduction – General Objectives of Communication – Definition of Communication – Communication – Importance of Communication – Types of Communication employed by Business Organizations. Importance of effective communication – Miscommunication – Barriers to Communication – Physical/Environment Barriers.

UNIT – V

Enquiry – What is an enquiry letter – Different kinds of enquiry letters – Unsolicited enquiry – Solicited enquiry – Enquiries asking for a favor – Important features of an enquiry letter – Illustration of different kinds of Enquiry letters? – Offer – Meaning – Similarities and Dissimilarities between an offer and quotation – Kinds of offer – Essential Features of an offer – Method of drafting an offer letter.

Reference:

1. Business Organization and Communication – By C.P. Gupta.

Paper – 5 COMMUNICATION NETWORKS

1. INTRODUCTION

Communication model - Data communications networking - Data transmission concepts and terminology - Transmission media - Data encoding -Data link control.

2. NETWORK FUNDAMENTALS

Protocol architecture - Protocols - OSI - TCP/IP utilities – Error detection and correction -LAN architecture - Topologies - MAC - Ethernet, Fast Ethernet, Token ring, FDDI, Wireless LANS - Bridges.

3. NETWORK LAYER

Network layer - Switching concepts - Circuit switching networks - Packet switching - Routing - Congestion control - X.25 - Internetworking concepts and X.25 architectural models - IP - Unreliable connectionless delivery - Datagram - Routing IP datagram's - ICMP.

4. TRANSPORT LAYER

Transport layer - Reliable delivery service - Congestion control - connection establishment - Flow control - Transmission control protocol - User datagram protocol.

5. ADVANCED NETWORK ARCHITECTURE

IP Forwarding Architecture-Overlay Models- MPLS – RVSP – Differentiated Service – Security protocol – Security and Cryptographic Algorithm- Security protocols Cryptography Algorithms.

Text Book

William Stallings, Data and Computer Communications, 5th edition, PHI,1997.

References:

1. Larry L.Peterson & Bruce S.Davie, Computer Networks - A systems Approach, 2nd edition, Harcourt Asia/Morgan Kaufmann, 2000.
2. Communication Network – Fundamental concepts and key Architecture by Leon Garcia and Widjaja.