

BCA

MAHARISHI MAHESH YOGI VEDIC VISHWAVIDYALAYA
Bachelor of Computer Application (B.C.A.)

This is a three year Programme (six semester) leading to the degree of Bachelor of Computer Applications

SEMESTER - I

S.No.	S.Code	Subject Name	Marks
1	1 BCA 1	Maharishi Vedic Science-I	100
2	1 BCA 2	Foundation of Computer & Networking	100
3	1 BCA 3	Programming in C	100
4	1 BCA 4	Mathematics	100
5	1 BCA 5	Communication English	100
6	1 BCA 6	PC-Package for Media	100
7	1 BCA 7	Practical(C Language & PC-Package)	100
8	1 BCA 8	Internal Assessments	100

SEMESTER - II

S.No.	S.Code	Subject Name	Marks
9	1 BCA 9	Maharishi Vedic Science-II	100
10	1 BCA 10	Data Structure with C Programming	100
11	1 BCA 11	Numerical Analysis design & Statistical Methods	100
12	1 BCA 12	Intro DBMS & Computer Organization	100
13	1 BCA 13	Programming in C++	100
14	1 BCA 14	Principle of Management	100
15	1 BCA 15	Practical(C++, FoxPro)	100
16	1 BCA 16	Internal Assessments	100

SEMESTER - III

S.No.	S.Code	Subject Name	Marks
17	1 BCA 17	Maharishi Vedic Science-III	100
18	1 BCA 18	Introduction to Internet Programming	100
19	1 BCA 19	(JAVA/Actives) Engineering	100
20	1 BCA 20	Digital Organization	100
21	1 BCA 21	Calculus & Matrices	100
22	1 BCA 22	Operating System	100
23	1 BCA 23	Visual C++	100
24	1 BCA 24	Practical (Linux, Visual C++, Java Oracle)	100
25	1 BCA 25	Internal Assessments	100

MAHARISHI MAHESH YOGI VEDIC VISHWAVIDYALAYA**SEMESTER - IV**

S.No.	S.Code	Subject Name	Marks
26	1 BCA 26	GUI Programming with Visual Basic	100
27	1 BCA 27	Internet Administration	100
28	1 BCA 28	Com, Dcom & Computer Network	100
29	1 BCA 29	ASP & Web Page Designing	100
30	1 BCA 30	Software Engineering	100
31	1 BCA 31	Multimedia	100
32	1 BCA 33	Practical (HTML, DHTML, VB) & Minor Project	100
33	1 BCA 25	Internal Assessments	100

SEMESTER - V

S.No.	S.Code	Subject Name	Marks
34	1 BCA 34.	Net Technology	100
35	1 BCA 35	Information Technology Trends	100
36	1 BCA 36	Window Programming	100
37	1 BCA 37	Computer Graphics	100
38	1 BCA 38	Bio-informatics - I	100
39	1 BCA 39	Computer Architecture	100
40	1 BCA 40	Practical (VB Script, DHTML)	100
41	1 BCA 41	Internal Assessments	100

SEMESTER - VI

S.No.	S.Code	Subject Name	Marks
42	1 BCA 42	Major Project Report	500
43	1 BCA 43	Internal Assessments	200

MAHARISHI MAHESH YOGI VEDIC VISHWAVIDYALAYA**BCA Ist SEMESTER****1st Paper- Maharishi Vedic Science I****Unit - I****Introduction of Vedic Science**

- Meaning & Importance of Guru Pujan.
- Meaning of Meditation, Mann, Intelligence, Chitta, Ego, Thought, erstraint.

Unit - II

- Name of forty areas of Vedic Science and their expression in Human Physiology and characteristics of consciousness.
- Consciousness and types of consciousness, common characteristics of higher stages of consciousness.

Unit - III

- Maharishi's Yoga
- Transcendental Meditation - A general Introduction.
- Type of Speech.
- TM- Siddhi Programme.
- Principal Yoga Asanas and their concept.
- Video Tapes.

Unit -IV

- Introduction of Maharishi's Vedic Management.
- Fundamental elements of Vedic Management - totality.
- Management - Science and Art.

Unit - V

- Vedic Management and leadership
- The ideal leadership is based upon the totality of employee's life style.

Suggested Readings:

- Chetna-His Holiness Maharishi Yogijee.
- Maharishi Sandesh- 1 and 2, II-His Holiness Maharishi Mahesh Yogijee.
- Scientific Yog Ashanas- Dr. Satpal
- Maharishi University of Management.

MAHARISHI MAHESH YOGI VEDIC VISHWAVIDYALAYA

2nd Paper- Foundation of Computer Networking

UNIT I

Brief history of development of computers. Computer system concepts. Computer system characteristics. Capabilities and limitations. Types Of Computers. Analog, Digital, Hybrid, General, Special Purpose, Micro, Mini, Mainframe, Super Generations of Computers Personal Computer (PC's), IBM PCs, characteristics Pt, PCXI, PCAT-Configurations. Pentium and Newer PCs specifications and main characteristic. Types of PCs- = Desktop, Laptop, Notebook and other types of memory.

UNIT II

Basic components of computer system- Control unit, ALU, Input-Output functions and characteristics. Keyboard, Mouse, Trackball, Joystick, Digitizing tablet, Scanners, Digital Camera, MICRO OCR, Bar-code Reader, Voice Recognition, Light Pen, Touch Screen, Monitors-characteristics and types of monitor-Digital, Analog, Size, Resolution, Refresh Rate, Interfaced, Non-Interface. Dot Pitch, Video Standard-VGA, SVGA, XGA etc. Printers- Disk wheel, Dot Matrix, Inkjet, Laser Line Printer, Plotter, Sound Card and Speakers, Storage fundamentals, Primary Vs Secondary Data Storage and Retrieval methods. Sequential Direct and Index Sequential, Various Storage Devices- Magnetic Tape, Magnetic Disks, Cartridge Tape, Hard Disk Drives, Floppy Disks (Winchester Disk) Optical Disks CD, VCD, CD-R, CDRW, Zip Drive.

UNIT III

Needs Types of Software-System software, Application software, System Software-Operating System, Utility Program, Programming languages, Assemblers, Compilers and Interpreter, Operating System. Function types-Batch Single, Multiprogramming, Multiprocessing, Programming languages-Machine, Assembly, High level, 4 GL their merits and demerits. Application Management Software characteristic, Uses and examples and area.

UNIT IV

Analog and Digital Signals Modulators-Amplitude Modulation (AM), Frequency Modulation (PM), Communication Process, Direction of Transmission Flow- Simplex, Half Duplex, Full Duplex, Communication Software, Communication Protocols, Communication Channels- Twisted Coaxial Fiber, Optic Serial and Parallel Communication Modern- Working and characteristics. Types of Connections-Dialup, Leased Lines, ISDN, Bridges, HUB Routers, Repeater and Gateways, Use of Communication in daily life.

UNIT V

Introduction, History & versions of DOS, Basics- Physical structure of disk names. FAT file & directory structure and filing names, booting Process, DOS system files, DOS commands, Internal-md, cd, rd, copy, ren, date, vol, time, cls, path, type etc. External -tree, move, attrib, help, Sys, fdisk, diskcopy, label, append, diskcomp, sort, format, etc. Executable and non-executable files in dos.

TEXT & REFERENCE BOOKS

S.K. Basandra, "Computer Today"- Galgotia Publications.
Anurag Seetha. "Introduction to Computers and Information Technology" Ram Prasad & Sons Bhopal.

MAHARISHI MAHESH YOGI VEDIC VISHWAVIDYALAYA

3rd Paper- PROGRAMMING IN C

UNIT I

Introduction & features of C Program Concept Characteristics of Programming, Various stage in Program, Development Programming aids Algorithms, Flow charts- Symbols, Rules for making Flow chart, Types of flow chart. Advantage & Disadvantage, Pseudocodes (Decision Table, Programming techniques & tools Programming Technique- Top down, Bottom up, Modular Structured-Features, Merits & Demerits, Comparative study Programming Logic-Simple Branching, Looping, Recursion, Cohesion & Coupling) Programming Testing, Debugging & their Tools.

UNIT II

Structure of C program, Variables, Expressions, Identifiers, Keywords, Data Types, Constants, Operator and Expression, Operator Arithmetic, Logical Relational Conditional and Bit wide Operators, Precedence and Associativity of Operators, Basic Input/output and library, functions, Single character input/output i.e., getch, getchar (), putchar (), Formatted input out i.e. printf () and scanf () Library functions-concepts, Mathematical & Character functions, Type conversion in expression.

UNIT III

If statement If.....Else statement, Nesting of If Else Statement else if ladder. The ? Operator, goto statement, ARRAYS, Single and Multi Dimensional arrays, Array declaration and initialization of arrays.

UNIT IV

The need and form of C functions, User defined and library function, Function arguments, Return values and nesting of function, Recursion, Calling of functions, Array as function argument, Scope and life of variables-local and global variables.

UNIT V

Storage class specified auto extern static, register, String declaration, initialization structure members, Nested Structures, Array of Structure assignment, Structure as function argument, Function that return structure Union.
Text & Reference Books
E Balaguruswamy. "Programming with C" TMH Publications
S.K. Basandra "Computers Today", Galgotia Publications.

4th Paper-(MATHEMATICS)

UNIT-1

Ordinary Differential Equation: Definition 10 page and formation Equation of first degree Equation of first order and not of first Degree.

UNIT-2

Linear equation with constant coefficient. Homogeneous linear equation with variable coefficient. Extract differential equation and Equations of particular form.

UNIT-3

Linear equation of second order method of variation of parameter. Simultaneous differential equation. Total differential equations

UNIT-4

Series Solution: - Methods of problemus, simple equations, O.D.E. with constant coefficient-Homogeneous and non-homogeneous, C.F. And particular integrals.

UNIT-5

Partial differential Equations: - Definition and formation, P.D.F. of first order language method standard forms. Transformation of variables.

SUGGESTED READING:

A text Book of Differential Equations: By M.M. Kapoor.

A text Book of Applied Mathematics: By P.N. Wartikar and J.N. Wartikar.

Ordinary Differential Equations: By Gangadhar Paria.

Partial Differential Equation and Complex variables.

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5th Paper- COMMUNICATION ENGLISH

UNIT- I

- Sentences, Simple, Compound, Complex, Assertive, Interrogative, Imperative, Exclamators.
- Clauses Co-ordinate, Subordinate, Relative, Adverb.
- Comparative

(Adverb+Adjective)

- Articles Usage of 'A' 'AN' 'THE'
- Preposition, Position of Preposition, Place Relation Time.
- Relation and other relations.
- Classification and condition of material Report on material handling.
- Overview of Computerized accounting software.

UNIT-II

- Functional Grammar.
- Tense, Simple, Present, Progressive Perfect, Present Perfect Progressive along-with Past Tense and indications of o Futurity Reported Speech.
- Modal Will Shall Should Would and other.
- Voice Active and Passive.

UNIT-III

- Reading.
- Comprehension Written.
- Listening.
- Note taking/Note making.

UNIT IV

- Vocabulary
- Words Commonly Misspelt.

UNIT V

- Literature Lessons and Poems from M.P. Universities I" year.
- Foundation Course book and Written Communication by Sarah Freeman.

TEXT BOOKS

- "English language and Indian Culture". M.P. Universities I" Foundation Course published by M.P. Hindi Granth Academy. Bhopal { Complete}
- " Written Communication in English" by Sarah Freeman Published by Orient Longman {Unit I and II only}
- Word formation by prefix suffix.

Reference Books

A Practical English Grammar by Thomson and Martinet.
English Grammar by W.S. Allen.

6 PC- Package for media

6th Paper- PC -Package for Media

UNIT-I

Introduction & history M.S. Windows, Features of Windows version of Windows & its use. Working with Windows. My Computer & Recyclebin

Desktop, Icons and Windows Explorer, Screen description & working styles of Windows; Dialog Boxes and Toolbars. Working with Files & Folder,

Shortcuts & Autostart; Accessories and Windows Settings using Control Panel; Start button & Program lists: Installing new Hardware.

UNIT II

Introduction to MS Office; Introduction to MS Word;

Feature & area of use, Working with MS Word; Menus & Commands; Toolbars & Buttons; Shortcuts; Menus, Wizards & Templates.

Creating a New Document, Different Page Views and layouts; Applying various Text Attributes; Paragraph and Formatting Text Editing

Using Various features: Bullets, Numbering, Autoformatting, Printing & various print options.

UNIT III

Advanced Features of MS-Word; Spell Check, Thesaurus, Find & Replace, Header & Footers; Inserting Page Numbers, Pictures, Files, AutoText, Symbols etc;

Working with Columns, Tabs & Indents, Creating & Working with Tables including conversion to and from text Margins & Space management in Document; Adding Reference and Graphics; Mail merge, Envelops & Mailing Labels.

UNIT IV

Introduction of MS Excel; area of use; Working with MS Excel concepts of Workbook & Worksheets; using Wizards; Various Data Types Using

Different features with Data Cells and Texts Inserting Removing & resizing of Columns & Rows; Working with Data & Ranges; Different Views of

Worksheets; Column Freezing, Labels, Hiding, Splitting etc; Using different features with Data and Text, Use of Formulas, Calculation & Functions. Cell Formatting.

UNIT V

MS Power Point; Introduction & area of use; Working with MS PowerPoint; Creating a New Presentation; Working with Presentation Using

Wizards; Slides & its different views; Inserting, Deleting and copying of Slides; Working with Notes, Handouts, Columns & List; Adding

Graphics, Sound and Movies to a Slides; Working with Power Point Objects; Designing & Presentation of Slide Show; Printing Presentations

Notes Handouts with print options.

Text & Reference Books

Microsoft Office 2000, 8 in 1 by Joe Habraken Prentice Hall of India.

MAHARISHI MAHESH YOGI VEDIC VISHWAVIDYALAYA

BCA IInd SEMESTER

1st Paper-MAHARISHI VEDIC SCIENCE II

UNIT I

- Classical and Scientific introduction of forty areas of Vedic Science.
- First and Last Verse of forty areas.

UNIT II

- Third Law of Thermodynamics.
- Meener's effect
- Maharishi's Effect- Society, Environment, Behaviour and effect on Moral Value.

UNIT III

- Pradhavansasbhav, atantabhav, Annyonabhav, Pragbhav
- Meaning of "Yogastha Kuru Karmani"
- Meaning of "Gyanam Chetanayam Nihitam"

UNIT IV

- Theory of Karma-Prarabadha, Kriyamana, Sanchieta
- Theory of Invincibility.

UNIT V

- Theory of Ayurved;
- Theory of Dincharya & Ritucharya.

Suggested Readings :

- Maharishi Sandesh Part- I, II.
- Chetna Vigyan- His Holines Maharishi Mahesh Yogijee.

2nd Paper-Data Structure with C Programming

UNIT-I

The concept of data structure, Abstract data structure, Analysis of Algorithm. The concept of List Introduction to stack & Primitive Operation on stack, Stack as an abstract data type, Multiple Stack, Stack application: Infix, Post fix and Recursion, Introduction to Queues, Primitive Operations on the Queues, Queues as an abstract datatype, Circular queue, Dequeue, Priority queue, Applications of Queue.

UNIT-II

Introduction to the Linked List of Stacks, Basic operation on linked list, Stacks and queue as a circular linked list, Header nodes, Doubly Linked List, Circular Linked List, Stacks & Queues as a Circular Linked List, Applications of Linked List.

UNIT-III

TREES- Basic Terminology, Binary Trees, Tree Representations as Array & Linked List, Basic operation on Binary tree, Traversal of Binary trees:- In order, Preorder & Post order, Application of Binary tree, Threaded binary tree, B-tree & Height balanced tree, B+ & B* Trees, 2-3 trees, Binary tree representation of trees, Counting binary trees.

UNIT-IV

Sequential Searching, Binary search, Insertion sort, Selection Sort, Quick sort, Bubble sort, Heap sort, Comparison of sorting methods.

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UNIT-V

Hash Table, Collision resolution Techniques, Introduction to graphics, Defining terminology, Direct, Undirected & Weighted graph, Representation of graphs, Graphs Traversal-Depth first & Breadth first search, Spanning Trees, Minimum spanning Tree, Shortest path algorithm

TEXT & REFERENCE BOOKS

- FUNDAMENTAL OF DATA STRUCTURE, By . Sawhney & E. Horowitz.
- DATA STRUCTURE: By Trembley & Sorrenson.
- DATA STRUCTURE: By Lipschuits (Schaum's Outline Series McGraw Hill Publication)
- FUNDAMENTALS OF COMPUTER ALGORITHM: By Ellis Horowitz and Sartaz Sawhney

3rd Paper- NUMERICAL ANALYSIS design & Statistical method.

Objective: This paper introduces the numerical logics used in computer

UNIT I

Introduction

Numbers and their Accuracy, Representation of Number, Error- Data Errors, Transaction Errors, Round-Off Errors,

Computational Errors, Measure of Accuracy- Absolute, Relative, Percentage and Random Errors, Relation Between Relative Error and Significant Digits, Error Propagation.

UNIT II

Solution of Simultaneous Linear Equations:

Solutions of Non- Homogeneous of Linear Equations, Gauss Elimination Method, Gauss Jordan Method, Crout's Method, Jacobi Method and Gauss-Sedel Method.

Solution of Non- Linear Equations:

Bisection Method, Method of False Position and Newton Raphson Method

UNIT-III

Interpolation:

Difference-Forward Differences, Backward Differences, Divided Differences, Difference Table, Backward Differences

Table, Divided Differences Table, Newton's Lagranges and Gauss's Interpolation Method.

UNIT-IV

Variables and Graphs:

Statistics, Population and sample, Discrete and Continuous variables, graphs, equations, inequalities, logarithms. Frequency distributions: Frequency distributions, histograms, frequency polygons, frequency curves, cumulative frequency distributions, curves Measures of Central Tendency: The arithmetic mean, weighted arithmetic mean, quartiles, deciles and percentiles. **Measures of Dispersion:** The range, mean deviation, semi-inter-quartile range for deviation, absolute and relative dispersion, Coefficient of variation.

UNIT-V

Elementary Probability theory:

Sample space event, classical definition of probability, relative frequency definition of probability, theorems of total and compound

Probability, independent & dependent events, mutually exclusive events, mathematical expectation.

Suggested Readings:

- Spiegel, M.R.: Statostocs Schaum's outlines series.
 - Kapoor & Saxena: Mathematical Statistics.
 - Numerical Methods-E. Balagurusamy.
 - Numerical Methods-B.D. Gupta.
- MAHARISHI MAHESH YOGI VEDIC VISHWAVIDYALAYA

4th Paper-Intro to DBMS and computer organization

Objective : This paper introduce Data Base Management System and Computer Organisation.

UNIT-I

Basic Computer Organisation:

Simple Model of a Computer to Explain. How dose it Execute

UNIT-II

Memory:

Boolean Algebra, Gates, Flip Flops, Registers and Counters

UNIT-III

Basic Building Blocks: Primary and Secondary Memory

Data Base System Architecture:

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Components of DBMS, Advantage and Disadvantages. Data Models, Data Association, Data Model Classification, Entity Relationship Model.

UNIT-IV

Relational Model:

Attributes and Domains, Tuples, Relation and Schema, Integrity Rules.

UNIT-V

Models & Forms:

Comparative Study of Relational, Hierarchical and Network Model Normal Forms-Normal Forms-I to V Normal Forms

Suggested Readings:

- Computer System Architecture, M.M. Mano.
- Data Base Management System, Korth.
- Data Base System-C.J. Date.
- Fundamental of Database system(s.e)-R. Elmasri, S. Navathe.
- Benjamin aummings.

5th Paper-Programming in C++**UNIT - I**

Overview of C++: Object oriented programming, Introducing C++ classes, Concept of object oriented Programming.

Classes & Objects : Classes, Structure & Classes, Union & Classes, Friend function, Friend Classes, Inline function, Scope resolution operator, Static class members: Static data member, Static member function Passing Objects to function, returning objects, Object assignment.

UNIT-II

Array, Pointers references & Dynamic Allocation operators: Array of objects, Pointers to object, Type checking C++ pointers,

The, This pointer, Pointer to derived types, Pointer to class members, References: Reference parameter, Passing reference to objects,

Returning reference, Independent reference, C++'s dynamic Allocation operators, Initializing allocated memory, Allocating Array, Allocating objects. Constructor & Destructor: Introduction, Constructor, Parameterized constructor, Multiple constructors in a class, Constructor with default Argument, Copy constructor, Default Argument, Constructing two-dimensional Array, Destructor.

UNIT-III

Function & Operator overloading: Function overloading, Overloading & destructor function is executed, Passing parameters to base

Class constructors, Granting access, Virtual base classes, Virtual functions & Polymorphism: Virtual function, Pure Virtual functions, Early

Vs. late binding.

UNIT-V

The C++ I/O system basis: C++ streams, The basic stream classes: C++ predefined streams, Formatted I/O: Formatting using the ios

Members, Setting the format flag, Clearing format flags, An Overloaded form of self (), Examining the formatted flags, Setting all flags, Using width() precision() and fill(), Using manipulators to format I/O, Creating your own manipulators.

TEXT & REFERENCE BOOKS:

Herbert Schildt, "C++ The complete reference"- TMH publication.

R. Subburaj, "Object Oriented Programming with C++". Vikas

MAHARISHI MAHESH YOGI VEDIC VISHWAVIDYALAYA

Publishing House, New Delhi.

E. Balagurusamy, "C++" TMH Publications.

R. Lafore, "Object Oriented Programming C++"

6th Paper-Principal of management

UNIT-I

Principles of management Evolution, development and modern philosophy of management, Principles of Management, Nature and

Functions of management, Planning, Organizing, Directing, Communicating, Controlling and Coordinating, Motivation and Leadership.

UNIT-II

Reporting-Capabilities, Principle, Type of Reports, Presentation on Modes, Function reporting system, Information and its uses.

Characteristics of information, Flow of information Management information system: Introduction, Characteristics, Need, Different views of MIS, Designing, Placement of MIS, Pitfalls in Designing an MIS, Computer based MIS-Advantages & Disadvantages.

UNIT-III

Introduction & types of Decision, Levels of Decision making

Decision support system: Concepts, Types, Software, Components, Needs, Building, Problems, Examples, Impact.

UNIT-IV

Human Resources management: Concepts & functions, Job analysis and role description, Organisation Design, and structure,

Centralisation and Decentralisation, Brief introduction to project management and its tools/techniques-Gantt chart, PERT/CPM.

UNIT-V

Computer Applications in Business-Need and Scope, Computer Applications in Project Management, Computer in Personnel

Administration, Information System for Accounting-Cost and Budgetary Control, Marketing and Manufacturing, Computer Application in

Materials Management, Insurance and Stock-broking, Production planning and Control, Purchasing, Banking, Credit and Collection, Warehousing.

TEXT & REFERENCE BOOKS:

S.K. Basandra, "Computers Today", Galgotia Publications
Koontz H, "Essentials of Management", TMH Publications.
BCA IIIrd SEMESTER

1st Paper-MAHARISHI VEDIC SCIENCE-III**UNIT-I**

- Introduction of Maharishi's Vedic Swasthya Vidhan.
- Introduction of Maharishi's Jyotish.

UNIT-II

- Introduction of Maharishi's Gandharva Veda.
- Introduction of Maharishi's Sthapatya Veda.

UNIT-III

- Maharishi's Absolute theory of Defence.
MAHARISHI MAHESH YOGI VEDIC VISHWAVIDYALAYA

UNIT-IV

- Maharishi's Absolute theory of Development.

UNIT -V

- Maharishi's Absolute theory of Information.

Suggested Readings:

- Maharishi's Absolute Theory of Government- His Holiness Maharishi Mahesh Yogijee.
- Maharishi's Absolute Theory of Defence- His Holines Maharishi Mahesh Yogijee.
Introduction of :
- Maharishi's Froum of Natural Law and Natural Law for Doctors-His Holiness Maharish Mahesh Yogijee.

2nd Paper-Introduction to internet programming**UNIT- I**

Internet:Evolution, Protocols, Interface Concepts, Internet Vs Intranet, Growth of Internet, ISP, Connectivity-Dial-up, Leased line, VSAT etc.,

URLs, Domain names, Portals, Application, E-Mail Concepts, Pop and WEB Based E-Mail, merits, address, Basics of Sending & Receiving,

E-mail Protocols, Mailing List, Free E-Mail Services.

UNIT-II

Data Transmission Protocols, Client/Server Architecture & its Characteristics, FTP & its usages, Telnet Concept, Remote Logging, Protocols,

Terminal Emulation, Message Board, Internet chatting-Voice chat, Text chat.

UNIT-III

WORLD WIDE WEB(WWW): History, Working, Web Browsers, its functions, Concept of Search Engines, Searching the Web, HTTP, URLs, Web Server, Web Protocols, Web publishing Concepts, Domain name Registration, Space on Host Server for Web site, HTML, Design tools,

HTML editors, Image editors, Issue in Web sit creations & Maintaince, FTP Software for upload website.

UNIT-IV

Concepts of Hypertext, Versions of HTML, Elements of HTML syntax, Head & Body Sections, Building HTML documents, Inserting texts,

Images, Hyperlinks, Backgrounds and Colour controls, Different HTML tags, Table layout and presentation, Use of font size & Attributes,

List types and tags. Use of Frame and Forms in web pages.

UNIT-V

E-Commerce An introductions, Concept, Technology in E-Commerce, Internet & E-Business, Advantage of E-Commerce, Applications,

Feasibility & Various constrains.

TEXT & REFERENCE BOOKS:

V.K. Jain, "OLEVAL Module-M1.2- Internet & Web page designing", BPB Publications.

Alexis Leon and Mathews Leon, "Internet for Everyone", Vikas.

Publishing House Pvt. Ltd., New Delhi.

MAHARISHI MAHESH YOGI VEDIC VISHWAVIDYALAYA**3rd Paper-(JAVA/Actives)ENGINEERING****UNIT-I**

Primitive data type-integer, Short, long, byte, float, double, Univode Character set, Boolean, their ranges, defaults initial values, wrapping

Of integer arithmetic, casting comments, identifiers and reserved words, local variables, operators precedence, Examples and Exercises.

UNIT-II

Statements simples and compound, Uses of control do, for, while, switch, break, case of continue, label, class type Data : String, Arrays,

Example and Exercises.

UNIT-III

Definitions and Naming Conventions for the member of the Java classes, Instances fields and methods, Initialization by Constructors,

Creation of objects, access methods, Example and Exercises.

UNIT-IV

Inheritance, Super class, Subclass, Method overloading, Interface, Thread, Multithreading example, Synchronized, Exception(try-catch-

Final blocks examples) . Examples and Excercises.

UNIT-V

Java Virtual Machine concept, Java platform overview, Programming Examples to clarify use of objects, threads exceptions and

Packages for I/O, file and string handling. Examples and Exercises.

TEXT & REFERENCE BOOKS:

Herbert Schildt, The Complete Reference Java 2, Tata Mcgraw Hill, New Delhi, 4 edition-2001.

Joseph O'Neil, Teach yourself Java, Tata Macgraw Hill New Delhi, 2001.

E. Balagurusamy, Programming with Java, Tata Macgraw Hill New Delhi, 2nd edition 2002.

JavaScript: Don Gosselin, Thomson Learning (Vikas Publication).

4th Paper-DIGITAL ORGANIZATION

UNIT-I

Data types and Number systems, Binary number system, Octal & Hexa-decimal number system, 1's & 2's complement, Binary Fixed-Point

Representation, Arithmetic Operation on Binary numbers, Overflow & underflow, Floating Point Representation, Codes, ASCII, EBCDIC CODE,

Gray code, Excess-3 & BCD, Error detection & correcting codes.

UNIT-II

Logic Gates, AND, OR, NOT Gates and their Truth tables, NOR, NAND & XOR gates, Boolean Algebra, Basic Boolean Law's,

Demorgan's theorem, MAP Simplification, Minimization techniques, K-Map, Sum of Product & Product Sum.

UNIT-III

Combinational & Sequential circuits, Half Adder & Full Adder, Full subtractor, Flip-flop-RS, D, JK, & T Flip-flops, Shift Registers.

RAM and ROM, Multiplexer, Demultiplexer, Encoder, Decoder.

UNIT-IV

I/O Interface, Properties of simple I/O devices and their controller, Isolated Versus memory-mapped I/O, Modes of Data transfer,

Synchronous & Asynchronous Data transfer, Handshaking.

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UNIT-V

Auxiliary memory, Magnetic Drum, Disk & Tape, Semi-conductor memories, Memory Hierarchy, Associative Memory, Virtual Memory,

Address space & memory Space, Address Mapping, Page table, Page Replacement, Cache Memory, Hit Ratio.

TEXT & REFERENCE BOOKS:

BARTEE, "DIGITAL COMPUTER FUNDAMENTALS"

MALVINO, "DIGITAL COMPUTER ELECTRONICS"

MORRIS MANO, "COMPUTER SYSTEM ARCHITECTURE"

5th Paper-CALCULUS & MATRICES

UNIT-I

Curve: Tracing of curves with equations in Cartesian & Polar forms Improper Integrals, Convergence of Improper Integrals.

Evaluation of convergent improper integrals.

UNIT-II

Gamma & Beta function and their properties, some important intrinsic equations. Rectification: Area under plane curves, length of curves, Intrinsic equation.

UNIT-III

Multiple integrals: Integration of functions of two & three variables, Double & Triple integrals, Dirichlet integral, change of order of integration. Use of Double & Triple integrals in finding areas and volumes, Review of Vector **Algebra**: Scalar and vector functions, limits and continuity of vector functions, Differentiation of vector functions w.r.t. Scalars. Derivation of scalar product and triple products.

UNIT-IV

Gradient. Directional derivative, Divergence and Curl: vector function of several scalar variables and their partial derivatives, the Total differential, level surface, Directional derivatives, gradient in Cartesian and polar co-ordinates. Divergence of vector and curl of a vector. Vector **Integration** - Indefinite and definite integrals. Line surface and Volume integrals. Gauss's and Stokes's theorems and some applications.

UNIT-V

Matrices : Definition types of matrices, special matrices, elementary transformations of matrix, Inverse of a matrix, normal form of matrix, Consistency and solution of linear transformation of a matrix. Characteristics equation, orthogonal matrices.

SUGGESTED READINGS:

A Text book of Higher calculus for B. Sc. II by H.S. Sharma.

A Text book of Vector Calculus and geometry by D.C. Agrawal & H. Pathak.

A text book of Vector by G. Paria.

Vector Analysis by M.L. Khanna;

Mathematics for Engineers by Chandrika Prasad.

A Text book of Matrix and Tensor by G. Paria.

MAHARISHI MAHESH YOGI VEDIC VISHWAVIDYALAYA

6th Paper-Operating system.

UNIT-I

Definitions, functions and types of operating system, System components, Operating system Services, System Calls, System programs, System structure.

UNIT-II

Process Concepts, process state & process control block, Process Scheduling, Scheduling, Criteria, Scheduling Algorithms, Multiple Processor Scheduling Real-Time Scheduling, Critical Section Problem.

UNIT-III

Semaphores, Classical Problem of Synchronization, Monitors, Atomic Transactions, System Model, Deadlock Characterizations, Method For Handling Deadlocks, Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection, Recovery from Deadlock, Combined approach to Deadlock.

UNIT-IV

Logical versus physical address space, Swapping, Contiguous Allocating, Paging, Segmentation, Segmentation with Paging, Virtual Memory, Demand Paging, Performance of Demand Paging, Page Replacement, Page Replacement Algorithms.

UNIT-V

Allocation of Frames, Thrashing, Other Consideration, Demand of Segmentation. I/O System- Overview, I/O Hardware, Application I/O Interface, Kernel I/O subsystem, Performance, Disk Structure, Disk Scheduling, Disk Management, Swap Space Management, Disk reliability, Stable Storage Implementation.

TEXT & REFERENCE BOOKS: -

OPERATING SYSTEM CONCEPT By Siiberschatz & Galvin, Addison Wesley Publication
OPERATING SYSTEM CONCEPT & DESIGN By Milan Milenkovic, TMH Publication

6th Paper-Visual C++

UNIT - I

Elements of GUI & Visual design, Designing and Creating a Visual C++ Program, Project work spaces, Debug and Release Targets, Cleaning up, various features of the Visual C++ IDE.

UNIT-II

Basic of Window Architecture, Simple WIN 32 SDK executables.

UNIT- III

Basic of MFC & MFC- Based executables.

UNIT-IV

GRAPHICS

Device contexts, Working with images, Bitmap and icons, Creating Bitmap buttons, Creating and using Pens, Brushes and Fonts.

UNIT-V

MESSAGES AND EVENTS

Understanding message maps and message loops, Events and Event Handling, Mouse Events, Keyboard events, Dynamic data exchange

Anti verification, creating Menus, Modeless dialog boxes.

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Text & Reference BOOKS: -

- CHARLES PETZOLD, PROGRAMMING WINDOW, 5TH EDITION, MICROSOFT PRESS, 1999.
- IVOR HORTON, PROGRAMMING VISUAL C++ STANDARD EDITION, WROX PRESS, 1999.
- JON BATES AND TIM TOMPKINS, PRACTICAL VISUAL C++6, 2ND EDITION.
- CHUK SPHAR, LEARN VISUAL C++ NOW, MICROSOFT PRESS/PHI, 1999.
- DAVID KRUGLINSKI, GEORGE SHEPHERD & SCOT WINGO, PROGRAMMING VISUAL C++ MICROSOFT PRESS, INDIAN REPRINT, 2000
- MIKE BLASZCAK, PROFESSIONAL MFC WITH VISUAL C++, WOX PRESS, 1999, INDIAN REPRINT, 2000.
- SHROFF PUBLISHER AND DISTRIBUTORS.

BCA IVth SEMESTER

1st Paper-GUI Programming with Visual Basic

UNIT-I

Integrated Development Environment of VB, User Interface Designing, Basics of Event driven programming. Form-Designing, Showing & Hiding VB language -Data Types, Variables & Constant, Arrays, Dynamic Arrays, Array as function, Collection, Procedures, Argument Passing, Function, Returning Values. Control flow Statements: if-then, if-then, if-then-else, Select case, looping statement: Do-loop, For-Next, While-Wend, Nested Control Structure, Exit statement.

UNIT-II

Basic Active X Control, Properties & Methods- Text box, List box, combo box, Scroll bar, Slider & Fire Controls. Advance Active X Control- Comrtion Dialog controls, Color, font, File open, file save, print help, tree View & list View Controls. Graphics controls- ImageBox & PictureBox, Coordinate System, Graphics methods- Text Drawing, Lines & Shape, Filling Shapes, Grid methods Menu editor: Pull-down, Pop-up and Dynamic menus

UNIT-III

Multiple Document Interface- Parent & Child Forms & Methods.
OLE-Basics, OLE control Properties & Methods, Developing applications with OLE control, OLE at Runtime.
Error handling in VB- Types of Errors, Error handling methods and functions

UNIT-IV

Database Programming with VB-Database Models, Visual data manager, DATA Control-methods, Properties, Connectivity with database,
RDO Data control, & using database with object model.
ADO data control, creating & using database with object model, Attaching Quaries with database.DATA Report Designer

UNIT-V

Visual Basic & Internet programming_HTML pages Basic, Server Client Interactions, DHTML Basic, Accessing Internet in VB using Web browser control and Internet Explorer Object. Introduction to VB SCRIPT

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TEXTS & REFERENCE BOOK:

SPECIAL EDITION USING VISUAL BASIC 6.0 BY BRIAN SILER PRENTICE HALL(2000)
MASTERING VISUAL BASIC 6 BY EVANGELOS BPB PUBLICATIONS
BEGINNER'S GUIDE TO VISUAL BASIC 6 BY REETA SAHOO & G.B.SAHOO,KHANNA PUBLISHING HOUSE
PETER NORTON'S GUIDE TO VISUAL BASIC 6 BY PETER NORTON
BEGINNING VISUAL BASIC 6 BY PETER WRIGHT, SHROFF PUBLISHERS
PROGRAMMING IN VISUAL BASIC 6.0 BY MOHAMMED AZAM VIKAS PUBLISHING HOUSE
VISUAL BASIC 6 SUPER BIBLE BY DAVID JUNG, BOUTAIN, PARDUM

2nd Paper-INTERNET ADMINISTRATION**UNIT-I****Introduction :**

Introduction to Internet Customer Support Internet Site, Downloading Files
Internet Networking concept
Internet Networking Protocol

UNIT-II

The Orgin of TCP/IP, Protocol-The Rules Communication, TCP & UDP- The Transport Layer, TCP Connection Oriented Protocol, UDP-Connection less Protocol, Domain Name Service (DNS), File Transport Protocol (FTP), Hypertext Transfer Address Resolution Protocol (ARP), Internet Control Message Protocol (ICMP), Interior and Exterior Protocol like RIP, RIP II, BGP,EGP

UNIT-III**Internet Services**

The Client Server Model, SQL,The HTTP Protocal, The Structurer of a web Request, Hypertext and Links. E-Mail Working
The Format of E-Mail Massage, E-Mail Massage. POP 3, and IMAP, FTP Commands.
Building Internet Infrastructure
Element of TCP/IP network, IP address scheme, Routers and Servers, Issues.

UNIT-IV

Javascript Overview, Javascript and the www.Javascript vs. VB Script, Javascriptvs. Javascript versions,Script element, Inline Javascript, Including Javascript.Function, function Introduction, Calling function.
Javascript Comments: Comments overview, When to comment, Types of comments.
Variables: Variables overview, declaring variables, Type of variables. Casting variables. Alert box.

UNIT-V

Expressions: arithmetic operators, Assignment operators, logical operators Expressionsand precedence.
Statement: If statement, for statement, While statement, Break /Continue.

TEXT & REFERENCE BOOKS:

V.K.Jalh, "O level Moudle - M1.2-Internet & web page designing" BPB Publication.
MAHARISHI MAHESH YOGI VEDIC VISHWAVIDYALAYA
Alexis Leon and Mathews Leon, "Internet for Everyone", Vikas Publishing House PvtLtd., New Delhi.

3rd Paper-COM DCOM AND COMPUTER NETWORK**UNIT-I**

Analog & digital signal, Electromagnetic spectrum,Asynchronous & Synchronous Transmission. Ideal channel, Band rate,Base band broad band channel, Multiplexxer FDM, TDM, STDM, Carrier, Modulation, AM, FM,PCM,PWM,SWM,Encoding, Schemes, The needs and importance of networking, type of network, server based, peer based, hybrid,xayered Architecture,LAN Topology. Network adopted card, logical topology Modam

UNIT-II

Switching technique, message switching, circuit switching, packet switching, virtual circuit, transmission media, OSI reference model, IEEE standards, 802.3,802.4,802.5 AALOHA, SLOTTED ALOHA, CSMA, CSMA/CD Birmap CCITTX.25, CCITT x.11 Token ring, Token bus.

UNIT-III

Fast Ethernet, FDDI Token ring, wireless LAN, ATM Network, Principles of Internetworking Internetworking devices, Bridge, Routers Gateways, repeater , rooting algorithms, distance vector routing, shortest path routing, Broadcast routing, Multicast routing, ICP/IP Protocol, IPV6 addressing, congestion control, Traffic Shapping

UNIT-IV

TELNET, FTP, SMTP, MINE, SNMP, UDP, URL (Uniform Resource Locater) THTTP Source routing Bridge, Transport Bridge, ISDN Channel, ISDN Service, base band ISDN, broadband ISDN Diffreent switches, PBX network, network securing application of cryptography to security, Data Encryption Transpositioncipher, substitution cipher, PSAAlgorithms, EDI layout Architecture, Function of Network operating system. Cilent OS, Server OS, idea about PSNT.

UNIT-V

Introduction to Windows NT, Various Features, Differences with other Windows Environment and other O,S., Windows NT workstation Versus Server. Kernel and its Subsystems: Kernel/User Mode, Win32 Subsystem.

Security Models: System level restriction, Server application security, Domain group access, Right and privilege verification, application Support-Windows and Non Windows application.

NT Administration : User manager for domain, Disk administration, Backup, Syatem policy editor, Remote access administration, Network clients administration.

Networking with TCP/IP: TCP/IP services in NT, Advantages of using TCP.IP in NT, TCP/IP installation and configuring DCHP and WINE services.

Installation: Requirement Analysis, Basic Hardware required, Workgroup and Domin concepts:PDC BDC.

TEXT & REFERENCE BOOKS:

COMPUTER NETWORKING BY ANDREWS TANANBAUM

UNDERSTANDING DATA NETWORK BY LEWIS MACHENZIE

DATA COMMUNICATION BY PRAKASH GUPTA

DATAAND COMPUTER COMMUNICATION : BY WILLIAM STALLINGS

The complete reference: Windows NT- Griffith Wm. Kadnier- Tata McGraw Hill. ISBN-0-07-463222-1

MAHARISHI MAHESH YOGI VEDIC VISHWAVIDYALAYA**4th Paper-ASP & WEB PAGE DESIGNING****UNIT-I**

Client Server computing Concepts, Distributed computing on the Internet, Introduction to web pages and HTML, HTML elements and tags, formatting text and pages, including pictures in a page, creating tables and lists, splitting pages into frames.

UNIT-II

Site design and Navigation: The Home page Navigational tools, Formatting the body section using block level, using text level, using font, style, using phrase elements.

UNIT-III

Multimedia with Web : Creation files, Streaming audio streaming animations , Java Script fundamentals- Browser, Java Script and server, Embedding Java Script and HTML, Java Script fundamentals- variables, value store house, statements, loops, condition and functions, objects properties and methods, event handlers and non- script tag.

UNIT-IV

Comparison of HTML, DHML and XML web casting. Domain name selection, web server selection, Web hosting, uploading and downloading of web, incremental uploading of data, introduction to SQL-Server, Introduction to User management in SQL-Server.

UNIT-V

Introduction to ASP, database handling with ASP. Connection object record set object, request object response object, cookies, creating tables and insert query through connection.

TEXT & REFERENCE BOOKS:-

Mastering ASP Programming -BPB Publication.

Java Script, HTML,DHTM,-Ivan Bayrous.

Java Script -Don Gosselin, Thomson Learning (Vikas Publication)

Principals of Web Design Joel Sklar, Thomson Learning (Vikas Publication)

5th Paper-SOFTWARE ENGINEERING**UNIT-I**

SOFTWARE: Software Characteristics, Components & Application, Software Engineering - A Layered Technology. **Software Process Models** - Lineal Sequential Model, Prototype & Rad Model, Evolutionary Software Process **Model**- Incremental Model and Spiral Model. **SOFTWARE PROJECT MANAGEMENT** : Project Management Concepts- People Problem and Process

SW PROCESS AND PROJECT METRICS : Metrics in the Process and Project Domains.
Software Measurement - Size Oriented, Function, Oriented Metrics, Extended Function

UNIT II

SOFTWARE PROJECT PLANNING : Objectives, Scope, Project Estimation, Decomposition Techniques, Empirical Estimation Models. **ANALYSIS CONCEPT AND PRINCIPLES**: Requirement Analysis, Communication Techniques, Analysis Principles, Software

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Prototyping, Specifications.

ANALYSIS MODELING: Elements of the Analysis Modeling, Data Modeling, Functional Modeling and Information Flow, Behavioral Modeling, Data Dictionary.

UNIT III

DESIGN CONCEPTS AND PRINCIPLES: Design Process, Design Concepts, Design Principles, Effective Modular Design

Design Methods: Architectural Design Process, Transform Mapping and Transaction Mapping, Interface Design,

Internal and External Design, Human computer Interface Design, Interface Design Guidelines, Procedural Design.

UNIT IV

S/W Quality Assurance: Quality Concepts, Matrix for Software Quality, Quality Movement, S/WQA, S/W Review, Formal Technical

Reviews, Formal Approaches to Squ, S/W Reliability, ISO 9000 quality Standards.

S/W TESTING MODELS: S/W Testing Fundamentals, Test Case Design, White and Black Box Testing, Basic Path Testing, Control Structure

S/W TESTING STRATEGIES: Strategic Approach To S/W Testing, Unit Testing, Integration Testing, Validation Testing, System Testing, Debugging

UNIT V

S/W REUSE: Reuse Process, Building Reuse Components, Classified And Retrieving Components, Economics of S/W Reuse

COMPUTER AIDED S/W ENGINEERING: Introducing of Case, Building Block For Case, Taxonomy of Case Tools, Integrating Case

Environment, Integrating Architecture, Case Repository

TEXT & REFERENCE BOOKS:

- Software Engineering By R.S. Presman
 - An Integrated Approach To Software Engineering By Pankaj Jalote
- ELECTIVES (CHOOSE ANY ONE)**

6th Paper-Multimedia

UNIT I

MULTIMEDIA: INTRODUCTION, TEXT, IMAGES & TOOLS

Need and Area to Use and Develop Multimedia Software? Multimedia Development Team and Skills, MAC V/S Windows Platform, Basic

Tools for Development Multimedia Application Multimedia Building Blocks, Making Simple Multimedia with Popular Applications. Stages of

Multimedia Design: Planning, Content Analysis, Instructional Design, Preparation of Media Elements, Integration of Media Elements

Authoring, Evolution, Text-Plain Text and Formatted Text, Hyper Text, Text Markup Language(HTML), Conversion of Text Formats, Object

Linking and Embedding Concept and Text Preparation Tools. Fonts Editing and Design Tools, Text Effects, Image-Types of Graphics-Vector

And Raster, Attributes of Image-Resolution, Images, Pixel Depth, Color, Color palates, Compression of Images and its Affects to Quality and

Storage Size, Various Files Formats- BMP,DIB,EPS,CIF,PIX,TGA and TIF Formats. The Windows Meta Files Formats, File Formats

Conversion, Compression Techniques-REL Compression, LZW Compression, JPEG Fractal Compression and Wavelet Compression

Processing Tools-Techniques of Capturing Image and Converting Image, Software Tools for Processing Images Techniques of Special Text

Effects Using Various Software.

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UNIT II

Digital Sound - Its Capturing And Editing Tools

Sound and it Attributes-Sound and its Effects in Multimedia, Sampling of Sound, Frequency, Sound Depth, Channels in Sound and Third

Effects on Quality and Storage Size Estimation of Space of A Sound File, Sound Card Standard-Fm Synthesis Cards, Wave Table Cards, Midi

And Mp3 Files and Devices, 3d Sounds, Capturing and Editing Sound Wave for Indo.

UNIT III

Computer Animation - Its Techniques And Development Tools

Animation and its Basic- Principals of Animation and its Use in Multimedia Computer System Configuration and Peripherals

Requirements, Software for Animation, Effects of Resolution Pixel Depth, Image Size on Quality and Storage Size

Types of Animation, step for Creating and Generic Animation.

Animation Techniques- Concept of Key Frame, Tracing and Path, 2D Animation Techniques: Tweaking, Morphing,

Color Cycling, Walk Cycle Wrap, Rotation, 3D Animation Techniques: Lofting, Lighting Revolving Inverse Kinematics Morphing Key

Framing Various Tools for Creating Animation Like Animation Pro 3D Studio Paint Shop Pro Animation.

UNIT IV

Digital Video And Video Making Tools

Basic of Video- Analog and Digital Video Types of Video Computer System Configuration and Peripheral Required Digitization of Analog Video Type of Video Problems Due to Interlacing or Non Interlacing, Video Standard- NTSC, Pal, Secma, HDTV, Video Capturing Media /Instruments Videodisk Camcorder Compression Techniques, File Formats AVI, MJPG, MPEG, Move Real Video, Video Editing and Movie Making Tools Quick Time Video for Window Adobe Premier.

UNIT V

Multimedia, Authoring And Virtual Reality

Selecting and Using Authoring Tool Factor for Selecting And Authoring Tool Multimedia and Internet Tools Pro Web Multimedia Various Plug Ins for Web. HTML and Multimedia Designing Tips, Text and Image Pro Web Planning and Distribution of A Multimedia Project, Virtual Reality Terminology Head Mounts Display (HMD), Boom, Cave, Input Devices and Sensual Technology, Characteristics of Immersive Virtual Environments, Non Immersive V, VRML, VR- Related Technology Application

TEXT & REFERENCE BOOKS:

- MULTIMEDIA MAKING IT WORK (4th EDITION)- BY VAUGHAN TATA MEGRAW HILL
- MULTIMEDIA IN ACTION BY JAMES E SHUMAN, VIKAS PUBLISHING
- MULTIMEDIA ON THE PC BY - NORMAN DESMARASIS TATA MEGRAW HILL