THE MADURA COLLEGE (Autonomous), MADURAI – 625 011
(AFFILIATED TO MADURAI KAMARAJ UNIVERSITY)
RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 2D**

COURSE TITLE : Cobol Programming **QN.NO : 4814**
TIME : 3 Hours **MAX.MARKS :75**

CODE	SUBJECT	T
2D	COBOL PROGRAMMING	6

Unit - I: Introduction to COBOL

Coding format for COBOL program - Structure of COBOL program - Character set - COBOL words – Data Names and identification - Literals - Figurative Constants- Continuation of lines - Language Description Notation.

Identification And Environment Division: Identification Division – Environment Division - Configuration Section- Input-Output Section.

First Look At Data Division: Introduction - Level structure-Data Description Entries - Picture Clause; Value Clause - File Section - Working Storage Section Editing - Edit Characters For Numeric Data - Editing Of Alphabetic And Alphanumeric Data - Examples Of Editing Special Names Paragraph- Classes And Categories Of Data

Unit - II: Procedure Division & Basic Verbs

Structure of the procedure division - data movement verb: move - arithmetic verbs - add , subract, multiply & divide - sequence control verbs - goto, stop - input and output verbs open, read, write, close, accept & display - conditional verbs - categories of cobol statements.

Writing complete programs: introduction to program writing - a sample program - how to run a cobol program - program testing - programming style.

More about data division: usage clause - qualification of data names - sign clause.

Unit - III: More About Data Movement Verb And Arithmetic Verbs

ROUNDED Option - ON SIZE ERROR Option - COMPUTE Verb.

Conditional And Sequence Control Verbs: Conditional -Relational condition - Sign condition - Class condition - Condition name condition - Negated simple condition - Compound condition – IF statement - Nested IF statement Coding style for IF sentences - GO TO with DEPENDING phrase - ALTER statement - PERFORM statement - EXIT statement - A sample validation program.

Unit - IV: Table handling

Occurs clause and subscripting - assigning values to table elements - multi-dimensional tables - perform verb and table handling - perform with times option - perform with until option perform with varying option - perform with the varying-after option - indexed tables and indexing - set verb - search verb - sorted tables and binary search - searching a multi-dimensional table sorting a table - index data item - use of indexes and index data items.

Unit - V: Sequential files

File characteristics - file- control entries records - block contains clause - record contains clause - label record clause- value of clause - data record clause - code-set clause nonstandard clause - examples of file-description entries - statements for sequential files -open statement - close statement -write statement - rewrite statement - examples of sequential file processing - sequential files with variable- length record - fd entry for variable length record - record description for variable length records - example of sequential file processing - i-o control paragraph.

Sorting and merging of files: the simple sort verb - file updation - variation of updations - updation without insertion and more than one transaction record for a master record - file matching - file merging - simple merge verb - same sort area clause - memory size clause.

Text Book:

M.K. Roy & Dastidar – "COBOL Programming".

Reference:

1. Stern & Stern – "COBOL Programming".
2. Philippalkies & Leonard Kazmier – "COBOL through Information Systems".

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RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 2SD(2008 on)**

COURSE TITLE : Office Packages **QN.NO : 4818**
TIME : 3 Hours **MAX.MARKS :75**

Skill Based Elective

Unit-1:

Word: Introduction to Word-Editing a Document-Move and Copy Text-Formatting Text and Paragraph-Finding and Replacing a Text and Spelling Checking-Using Tabs-Enhancing Document-Columns, Tables and Other Features-Using Mail Merge.

Unit-2:

Excel: Introduction to Work Sheet and Excel -Getting Started with Excel-Editing Cells and Using Commands and Functions-Moving and Copying, Inserting and Deleting Rows and Columns-Formatting a Worksheet-Printing the Worksheet-Creating Charts.

Unit-3:

Excel: Using Date and Time and Addressing Modes-Using Statistical, Math and Financial Functions-Database in a Worksheet-Additional Formatting Commands and Drawing Tool Bar – Miscellaneous Commands and Functions.

Text book:

1. Pc Software for Windows 98 Made Simple-R K Taxali-Tata McGraw Hill Publishing Company Limited,

Reference:

Teach Yourself Windows 98-Al Stevens-BPB Publications.

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THE MADURA COLLEGE (Autonomous), MADURAI – 625 011
(AFFILIATED TO MADURAI KAMARAJ UNIVERSITY)
RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 2AD1(2008 on)**
COURSE TITLE : Graph Theory **QN.NO : 4820**

TIME : 3 Hours **MAX.MARKS :75**

UNIT:I

Introduction To Graph - Definition Of A Graph - Finite And Infinite Graphs - Incidency And Degree Isolated Vertex - Pendent Vertex -Null Graph. Isomorphism –Sub graphs Walks, Paths And Circuits –Connected Graphs, DisConnected Graphs And Components- Euler Graphs-Operation On Graphs-More On Euler Graphs-Hamiltonian Paths And Circuits.The Traveling Sales Man Problem.

UNIT: II

Trees:Trees-Properties Of Trees-Pendent Vertices In A Tree.Rooted Tree-On Counting Trees-Spanning Trees Fundamental Circuits.

UNIT :III

Cut Sets And Cut Vertices Cutsets-Some properties Of Cut Set-All Cut Sets In A Graph-Fundamantal Circuits And Cutsets-Connectivity And Separability.

UNIT:IV

Planarity Combinatorial Vs Geometric Graphs-Planar Graphs-Kuratowski's Two Graphs-Different Representation Of A Planar Graph.

UNIT:V

Coloring, Covering And Partitioning Chromatic Number Chromatic Partioning-Chromatic Polynomial-Matching Coverings –Four-Color Problem.

TextBook:

Graph Theory-With Applications To Engineering And Computer Science-
By Narsingh Deo

Chap-I:1.1,1.3,1.4,1.5 Chap-II:2.1-2.10
Chap-III:3.1-3.8 Chap-IV:4.1-4.5
Chap V:5.1-5.4

Reference Books:

1.Scham's Outlines Graph Theory-V.K.BalaKrishnan
2.Applied Discrete Structures For Computer Science
-Alan Doerr
-Levassure

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UPTO 2016

THE MADURA COLLEGE (AUTONOMOUS) MADURAI – 11

B.Sc., III SEMESTER Qn. No. 4826

CODE	SUBJECT :	T	P	C
	Data Structures and Algorithms	5	0	5

UNIT I 3D1 (up to 2016)

Stacks and Queues: Fundamentals – A Mazing Problem – Evaluation of Expressions–Multiple Stacks and Queues. **Linked Lists:** Singly Linked Lists – Linked Stacks and Queues – Polynomial Addition – More on Linked Lists – Doubly Linked Lists and Dynamic Storage Management.

UNIT II

Trees: Basic Terminology – Binary Trees - Binary Tree Representations - Binary Tree Traversal – More on Binary Trees – Threaded Binary Trees.

UNIT III

Graphs: Terminology and Representations – Traversals, Connected Components and Spanning Trees – Shortest Path and Transitive Closure – Activity Networks, Topological Sort and Critical Path.

UNIT IV

Divide and Conquer: The General Method – Binary Search – Finding the Maximum and Minimum – Merge Sort – Quick Sort – Selection Sort.

UNIT V

The Greedy Method: The General Method – Knapsack problem-job sequencing with deadlines- Minimum cost spanning trees-optimal storage on tapes-optimal merge patterns-single source shortest path.

Text Books:

For Units I – III:

1. Fundamentals of Data structures
   Ellis Horowitz And Sartaj Sahni

For Units IV – V:

2. Fundamentals Of Computer Algorithms
   Ellis Horowitz And Sartaj Sahni – 2006 – Galgotia Publications.

Reference Books:

1. Data structures using C -Yedidyah langsam, Moshe J.Augenstein and Aaron M.Tenenbaum, 2000 PHI, New Delhi.
2. An Introduction to Data structure with applications
   Jean Paul Tremblay and Paul G Sorenson - THM, II Edition – 1991.
3. Data Structures and Algorithm Analysis in C
   MARK ALLEN WEISS - Second edition – Addison Wesley Publishing Company 1997.

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THE MADURA COLLEGE (AUTONOMOUS), MADURAI-11

DEPARTMENT OF COMPUTER SCIENCE

BLUE-PRINT

COURSE: B.Sc (COMPUTER SCIENCE) SEMESTER : III

PAPER : DATA STRUCTURES & ALGORITHMS MAX MARKS: 75

CODE : ~~3D3(2007)~~ 3D1(2008) / 3D3(2009) / 2D2(2010)

	PART-A	PART-B	PART-C
UNIT-I	1	2	1
UNIT-II	1	2	---
UNIT-III	1	2	---
UNIT-IV	1	1	1
UNIT-V	1	1	1
TOTAL	5	8	3

PART-A : ANSWER ALL QUESTIONS 5 * 3 = 15 MARKS

PART-B : ANSWER ANY 5 QUESTIONS (OUT OF 8) 5 * 6= 30 MARKS

PART-C : ANSWER ALL QUESTIONS (EITHER OR TYPE) 3 * 10 = 30 MARKS

75 MARKS

THE MADURA COLLEGE (AUTONOMOUS-EVENING), MADURAI-11
DEPARTMENT OF COMPUTER SCIENCE

MODEL QUESTION PAPER

CLASS: B.Sc COMPUTER SCIENCE
TITLE: DATA STRUCTURES & ALGORITHMS
TIME : 3 HOURS

CODE : ~~3D3(2007)~~ 3D1
MAX.MARKS: 75 3D3
2D2

PART-A

ANSWER ALL QUESTIONS: (5X 3 = 15)

1. List out the differences between stack and queue.
2. How do you represent the binary tree?
3. What is meant by AOV network?
4. Draw the binary decision tree for binary search with n=12.
5. Define minimum spanning tree.

PART –B

ANSWER ANY FIVE QUESTIONS: (5 X 6 = 30)

6. Write the procedure to evaluate the postfix expression.
7. Explain the process of adding polynomials using linked list.
8. Describe the various tree traversal methods with an example.
9. Discuss the threaded binary tree in detail.
10. Write short note on Topological sort
11. Compare Depth first search and breadth first search.
12. Write the procedure for binary search.
13. Explain the Kruskal's algorithm with example

PART –C

ANSWER ANY THREE QUESTIONS: (3 X 10 = 30)

14. a). Explain the procedure for adding and deleting an item in a queue.
(OR)
b). Write the procedure to convert infix expression into postfix expression.

15. a). Describe the merge sort algorithm in detail.
(OR)
b). Give and explain the algorithm to find shortest path in the directed graph.

16. a). Write the procedure for quick sort.
(OR)
b). Give the procedure to solve knapsack problem.

THE MADURA COLLEGE (AUTONOMOUS) MADURAI

UPTO 2016

III SEMESTER On. No. 4828

CODE	SUBJECT:	T	P	C
	Object Oriented Programming With C++	4	0	5

3D2(up to 16)

Unit - I: Fundamentals of C++

Principles of Object Oriented Programming: Introduction – Object oriented programming paradigm – Basic concepts – Benefits of OOPs – Object Oriented Languages – Applications of OOP - **Beginning with C++:** Introduction – Applications of C++ - A Simple program – More C++ statements – An Example with Class – Structure of C++ Programs – Creating the source file – Compiling and Linking - **Tokens, Expressions and Control Structures:** Introduction – Tokens – Keywords – Identifiers – Basic Data types – User defined Data types – Derived data types –Symbolic constants – Type compatibility – Variables – Operators – Manipulators – Expressions and implicit conversions – Operator Precedence – Control structures.

Unit - II: Functions

Functions in C++: The main function – Function prototyping –Call by reference – Return by reference – Inline functions –Default Arguments – const arguments – Function overloading – Friend and virtual functions - **Classes and Objects:** C Structures – Specifying a class – Defining member functions – Making an outside function inline – Nesting of member functions – Private Member functions – Arrays within a class – Memory allocation for objects – Static Data members – Static member functions – Arrays of objects – Objects as Function Arguments – Friendly functions – Returning objects – const member functions – Pointers to members - **Constructors and Destructors:** Constructors – Parameterized constructor – Multiple constructor in a class – Constructors with default arguments – Dynamic initialization of objects – Copy constructor – Dynamic constructor – Constructing two dimensional arrays – const Objects - Destructors.

Unit - III: Operator Overloading & Inheritance

Operator Overloading: – Defining Operator overloading - Overloading unary operators - Overloading binary operators - Overloading binary operators using Friends -Manipulation of strings using operators - Rules for overloading operators.

Contd 2

Inheritance - Extending Classes: Introduction - Defining derived classes - Single inheritance - Making a private member inheritable - Multilevel inheritance - Multiple inheritance - Hierarchical inheritance - Hybrid inheritance - Virtual base classes - Abstract classes - Constructors in Derived classes - Nesting of classes.

Unit - IV: Polymorphism & Files

Pointers, Virtual Functions & Polymorphism: Introduction - Pointers to objects - 'this' pointer - Pointers to derived classes - Virtual Functions - Pure virtual functions - **Managing Console I/O Operations:** Introduction - C++ streams - I/O operations - Manipulators - **Working with files:** Classes for File stream operations - Opening & closing a file – Detecting End of File - File modes - File pointers - Sequential I/O operations -Updating a File – Random access – Error handling during file operations - Command line arguments.

Unit - V: Templates & Exceptions

Templates: Class templates - Function templates – Overloading of template functions – Member function templates - Template Arguments - **Exception handling:** Introduction – Basics of Exception handling – Exception handling mechanisms – Throwing Mechanism – Catching mechanism – Rethrowing an exception – Specifying Exceptions.

Text book:

E.Balagurusamy - "Object Oriented Programming With C++" – TMH - II Edition - 2001.

Reference Books:

1. Laffore. R – "Object Oriented Programming in C++" - III Ed., Galgotia Publications.
2. Stroustrup.B – "The C++ Programming Language" - III Ed., Addison Wesley.
3. Schildt. H – "The Complete Reference C++" - III Ed., TMH Pub.

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THE MADURA COLLEGE (AUTONOMOUS-EVENING), MADURAI – 11.
DEPARTMENT OF COMPUTER SCIENCE.

BLUE PRINT

COURSE : B.Sc. Computer Science **SEMESTER** : III

PAPER : Object Oriented Programming with C++ **TIME** : 3 Hrs

CODE : 3D2[illegible] **MAX.MARKS :** 75

Units	Part – A Open Type	Part – B Open Type	Part – C Either or Type
Unit - I	1	1	1
Unit - II	1	2	1
Unit - III	1	1	1
Unit - IV	1	2	----
Unit - V	1	2	----
Total	**5**	**8**	**3**

Part – A: Answer All Questions (Open type) 5 * 3 = 15 marks

Part – B: Answer any 5 out of 8 (Open type) 5 * 6 = 30 marks

Part – C: Answer All Questions (Either or Type) 3 * 10 =30 marks

75 marks

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THE MADURA COLLEGE (AUTONOMOUS), MADURAI – 11.
DEPARTMENT OF COMPUTER SCIENCE

MODEL QUESTION PAPER

Course: B.Sc. Computer Science **Semester:** III

Paper: Object-Oriented Programming with C++ **Time:** 3 Hrs

Code: 3D2 ([illegible] / 5D3 ([illegible]) / 3D4 ([illegible] **Max. Marks:** 75

5D3

PART – A **Answer All** **(5 X 3 = 15)**

1. What is meant by Comment line? How do you create it?
2. What is the necessity of a Function Prototype?
3. Define Operator Overloading with example.
4. List the Functions used for File Handling.
5. What are Templates?

PART – B **Answer Any 5** **(5 X 6 = 30)**

6. Distinguish Procedure Oriented Programming with OOP.
7. Explain about Inline functions with example.
8. Explain about Function Overloading with example.
9. Write a program to demonstrate Hybrid Inheritance.
10. Explain about any three Manipulators with examples.
11. Write a program to Copy the contents of a given File.
12. Illustrate the use of Templates with suitable examples.
13. Write a note on Exception Handling.

PART – C **Answer All** **(3 X 10 = 30)**

14. a) Describe about any Five basic object oriented concepts with examples.

    (or)

    b) What is a Data type? Explain about built-in data types in C++.

15. a) Create a class to implement the basic operations of a Stack.

    (or)

    b) What is a constructor? List its types and special characteristics. Explain with example program.

16. a) Describe about Binary operator overloading with example program.

    (or)

    b) Explain the various types of Inheritance with an example to each.

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3D2 (2008-09) [illegible]

Inheritance - Extending Classes: Introduction - Defining derived classes - Single inheritance - Making a private member inheritable - Multilevel inheritance - Multiple inheritance - Hierarchical inheritance - Hybrid inheritance - Virtual base classes - Abstract classes - Constructors in Derived classes - Nesting of classes.

Unit - IV: Polymorphism & Files

Pointers, Virtual Functions & Polymorphism: Introduction - Pointers to objects - 'this' pointer - Pointers to derived classes - Virtual Functions - Pure virtual functions - **Managing Console I/O Operations:** Introduction - C++ streams - I/O operations - Manipulators - **Working with files:** Classes for File stream operations - Opening & closing a file - Detecting End of File - File modes - File pointers - Sequential I/O operations -Updating a File - Random access - Error handling during file operations - Command line arguments.

Unit - V: Templates & Exceptions

Templates: Class templates - Function templates - Overloading of template functions - Member function templates - Template Arguments - **Exception handling:** Introduction - Basics of Exception handling - Exception handling mechanisms - Throwing Mechanism - Catching mechanism - Rethrowing an exception - Specifying Exceptions.

Text book:

E.Balagurusamy - "Object Oriented Programming With C++" - TMH - II Edition - 2001.

Reference Books:

1.Laffore. R - "Object Oriented Programming in C++" - III Ed., Galgotia Publications.
2.Stroustrup.B - "The C++ Programming Language" - III Ed., Addison Wesley.
3.Schildt. H - "The Complete Reference C++" - III Ed., TMH Pub.

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UPTO 2016

THE MADURA COLLEGE (AUTONOMOUS) MADURAI - 11

III SEMESTER

On. NO. 4830

CODE	SUBJECT :	T	P	C
	Computer Organization and Architecture	4	0	5

3D3 (up to 16)

Unit – I Basic Computer Organization and Design

Instruction Codes - Computer Registers - Computer Instructions - Timing and Control - Instruction Cycle - Memory Reference Instructions - Input-Output and Interrupt - Complete Computer Description - Design of Basic Computer - Design of Accumulator Logic. Programming The Basic Computer: Introduction - Machine Language - Assembly Language - The Assembler - Program Loops - Programming Arithmetic and Logic Operations - Subroutines - Input-Output Programming.

Unit – II Micro programmed Control

Control Memory - Address Sequencing - Microprogram Example - Design of Control Unit. Central Processing Unit: Introduction - General Register Organization - Stack Organization - Instruction Formats - Addressing Modes - Data Transfer and Manipulation - Program Control.

Unit – III Pipeline And Vector Processing

Parallel Processing - Pipelining - Arithmetic Pipeline - Instruction Pipeline. Computer Arithmetic: Introduction - Addition and Subtraction - Multiplication Algorithms - Division Algorithms - Floating-point Arithmetic Operations -Decimal Arithmetic Unit - Decimal arithmetic Operations.

Unit – IV Input-Output Organizations

Peripheral Devices - Input-Output Interface - Asynchronous Data Transfer - Priority Interrupt - Direct Memory Access - Input-Output Processor - Serial Communication.

Unit – V Memory Organization

Memory Hierarchy - Main Memory - Auxiliary Memory - Associative Memory - Cache Memory - Virtual Memory - Memory Management Hardware. Multiprocessors: Characteristics of Multiprocessors - Interconnection Structures – Inter-processor Arbitration – Inter-processor Communication and Synchronization - Cache Coherence.

Text Book:

M.Morris Mano- "COMPUTER SYSTEM ARCHITECTURE", PHI 3rd Edition.

Reference Book:

1. John Hayes-"COMPUTER ARCHITECTURE AND ORGANIZATION", McGraw-Hill International, III Edition - 1998.
2. Hamacher, G.Vranesic, S.G.Zaky -"COMPUTER ORGANIZATION", McGraw-Hill International, 1996.

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THE MADURA COLLEGE (AUTONOMOUS), MADURAI-11

DEPARTMENT OF COMPUTER SCIENCE

BLUE-PRINT

Course : B.Sc. (COMPUTER SCIENCE) **Semester** :II

Paper : Computer Organization and Architecture **Time** :3 Hrs

Code : [illegible](3D3[illegible] **Max Marks** :75

UNITS	PART-A	PART-B	PART-C
UNIT-I	1	1	1
UNIT-II	1	1	1
UNIT-III	1	2	1
UNIT-IV	1	2	—
UNIT-V	1	2	—
TOTAL	**5**	**8**	**3**

PART A:Answer All (Open Type) 5 * 3 =15 Marks

PART B:Answer Any 5 Questions(OUT OF 8) 5 * 6 =30 Marks

PART C:Answer All Questions(Either or Type) 3 * 10=30 Marks

75 Marks

THE MADURA COLLEGE (AUTONOMOUS), MADURAI-11

DEPARTMENT OF COMPUTER SCIENCE

MODEL QUESTION PAPER

Course : B.Sc. Computer Science
Title : Computer Organization and Architecture.
Code : 3D3[illegible]

Semester : II
Time : 3 Hrs
Max.Marks: 75

PART A

I. ANSWER ALL QUESTIONS: **(5 X 3 = 15)**

1. Write any Three Memory reference Instructions.
2. List down any Three Instruction formats with Example.
3. What are the Steps involved in the Multiplication of Two floating-point numbers.
4. Differentiate Isolated Versus Memory-Mapped I/O.
5. Write About Multi-port Memory.

PART -B

II. ANSWER ANY FIVE QUESTIONS: **(5 X 6 = 30)**

6. Explain Subroutines.
7. Explain Reverse Polish Notation.
8. Explain Arithmetic Pipeline.
9. Explain the Booth's Multiplication Algorithm with Example.
10. Explain the Following: i. Daisy-Chaining Priority ii. Parallel-Priority iii. Priority Encoder
11. Describe Direct Memory Access Controller.
12. Discuss about Associative Memory.
13. Explain Cache Coherence.

PART -C

III. ANSWER ALL QUESTIONS: **(3 X 10 = 30)**

14. a. Explain in Detail about the Assembler.

    Or

    b. Explain Design of Accumulator Logic.

15. a. Describe the Various Addressing Modes with Example.

    Or

    b. Define Control memory and its Address Sequencing

16. a. Describe Instruction Pipeline.

    Or

    b. Explain in Detail about Floating point Arithmetic operations.

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UPTO 2016

III SEMESTER

CODE	SUBJECT	T	P	C
3AD1	FINANCIAL ACCOUNTING / COMPUTERISED ACCOUNTING	3	0	2

(4836)

3AD1 / 3AIT2 Q. No. 4836

Unit - I:

Principles of Bookkeeping - Day Books and Ledgers - Cash Book - Petty cash Book – Trail Balance.

Unit - II:

Bank Reconciliation statement – Causes for difference between Cash Book and Pass Book.

Unit - III:

Final Accounts - Some common adjustments in Trading and Profit and Loss account and Balance sheet – Simple problems only.

Unit - IV:

Balance Sheet analysis and interpretation by simple ratios – Liquidity, Solvency and Activity ratios - Simple problems relating to Cash flow statement.

Unit - V:

Preparation of Budgets - Types of budgets - Cash budget & Flexible Budget.

Text Books:

1. M.C. Sukla - "Advanced Accountancy".
2. R.L. Gupta - "Advanced Accountancy".
3. M.L. Agarwal – "Theory & Practice of Cost Accounting".

Reference Books:

1. N. Shankar – "Principles & Practice of Cost Accounting".
2. Dr. Manmohan & Goyal - "Management Accounting".

(90)

MADURA COLLEGE (AUTONOMOUS) MADURAI – 625 011.

B.SC.,(CS) DEGREE EXAMINATION

&IT

TIME : 3 HOURS MAX.MARKS: 75

TITLE OF THE PAPER : COMPUTERISED ACCOUNTING : FINANCIAL ACCOUNTING

3AD1/3AIT2

BLUE PRINT OF QUESTION PAPER

UNIT	PART A	PART B	PART C	
I	2	1	1	
II	2	1	1	
III	2	1	1	
IV	2	2	1	
V	2	1	1	
TOTAL	10	6	5	
QUESTIONS TO BE ANSWERED	10	4	3	
MARKS FOR EACH QUESTION	1 ½	6	12	
TOTAL MARKS	15	24	36	= 75 MARKS

(upto 2016)

THE MADURA COLLEGE (AUTONOMOUS) MADURAI-11

UPTO 2016

III SEMESTER

CODE	SUBJECT : 3AD2 (4838)	T	P	C
	Statistics and Numerical Methods	4	0	2

Unit – I: Computer Arithmetic 3AD2

Floating point representation of numbers - Arithmetic operations with Normalized floating point numbers - Consequences of normalized floating point representations of numbers - Errors in numbers - Beginning an iterative method-the method of successive bisection - The methods of false position - Newton Rapson method the Secant method-The method of successive approximation.

Unit – II: Iterative Methods

The gauss elimination method - Pivoting Ill conditioned Equations-Refinement of solution obtained by Gaussian Elimination - Gauss seidal iterative method & algorithm - Comparison of direct and iterative methods.

Unit – III: Interpolation

Forward difference method - Backward difference method - Central Difference method - Lagrange interpolation method - Divided difference method - Linear regression - Polynomial regression - Fitting exponential and trigonometric functions.

Unit – IV: Integration & Differentiation

Formulae for numerical differentiation - Numerical Integration-Simpson's 1/3 rule - Simpson's 3/8 rule - Errors in integration Formulae - Gaussian quadrature Formulae - Comparison of integration formulae.

Unit – V: Probability & Distribution

Basic probability - Random variables - Discrete random variables - Continuous random variables - Selecting the appropriate Distribution - Polynomial Regression - Simple linear regression.

Text books:

1. V.Rajaraman - "Computer Oriented Numerical Methods"- III Ed.,- PHI.
2. Billy Gillett - "Introduction To Operations Research"- TMH 1979.

Reference Books:

1. Sharma & Goyal - "Mathematical Statistics".
3. M.K. Venkatraman - "Numerical Methods for Engineering".

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The Madura College (Autonomous), Madurai – 11.
Department of Computer Science

BLUE PRINT

Course: B.Sc Computer Science *Semester: III*
Paper: Statistics and Numerical Methods *Time: 3 Hrs*
Paper Code: 3DD2 *Max.Marks: 75*

	PART – A	PART – B (Open Type)	PART – C (Either or Type)
Unit - I	1	1	1
Unit - II	1	2	-
Unit - III	1	2	1
Unit - IV	1	2	1
Unit - V	1	1	-
Total	**5**	**8**	**3**

PART – A: Answer All 5 * 3 = 15 marks

PART – B: Answer Any 5 out of 8 (Open Type) 5 * 6 = 30 marks

PART – C: Answer ~~Any 3 out of 5~~ All the THREE (Either or Type) 3 * 10 = 30 marks

75 marks

12. Evaluate $\int_0^1 dx/1+x^2$ by using Simpson's one third rule.

13. A random variable X has the following probability function values of X.

X	0	1	2	3	4	5	6	7
P(X)	0	k	2k	2k	3k	K^2	K^2	$7k^2+k$

Part-C **Answer Any 3** **(3*10 = 30)**

14. a. Explain the Errors in numbers with example.

(or)

b. Find a real root of the equation $x^3-3x+1=0$ lying between 1 and 2 correct to three decimal places by using Bisection method.

15. a. Use Stirling's formula to show Y(16)=0.2867 from the given data.

X	0	5	10	15	20	25	30
Y(X)	0	0.0875	0.1763	0.2679	0.3640	0.4663	0.5774

(or)

b. A function y=f(x) is given by this following table. Find f(0.2) by using a suitable formula.

x	0	1	2	3	4	5	6
f(x)	176	185	194	203	212	220	229

16. a. Find dy/dx and d^2y/dx^2 at x=51.

x	50	60	70	80	90
y	19.96	36.65	58.81	77.21	94.61

(or)

b. Evaluate $\int_0^1 dx/1+x$ using

i) Simpson's 1/3 rule. ii) Simpson's 3/8 rule.

using h=1/6.

The Madura College (Autonomous), Madurai – 11.
Department of Computer Science.

MODEL QUESTION PAPER

Course: B.Sc Computer Science
Paper: Statistics and Numerical Methods
Paper Code: 3AD2(

Semester: III
Time: 3 Hrs
Max.Marks: 75

Part-A **Answer All** **(5*3 = 15)**

1.What is normalization?
2.State any three differences between direct and iterative method.
3.Find out the divided differences of y_x given that

x	1	2	4	7	12
y_x	22	30	82	106	206

4.What are the principles of Simpson's rule?
5.What are random variables?

Part-B **Answer Any 5** **(5*6 = 30)**

6. Explain floating point representation of numbers.
7. Explain the Gauss-Elimination method.
8. Compare Direct & Iterative methods
9. Find f(84) from the following Difference table using Backward Interpolation formula.

x	40	50	60	70	80	90
f(x)	184	204	226	250	276	304

10. Use Lagrange's Interpolation formula to fit a polynomial to the data.

x	0	1	3	4
y	12	0	6	12

Find the value of y when x=2.

11. Find 1'st and 2'nd derivative of f(x) at x=1.5

x	1.5	2	2.5	3	3.5	4
f(x)	3.375	7	13.625	24	38.875	59

R.T

UPTO 2016
(UPTO 2016)

III SEMESTER

CODE	SUBJECT	T	P	C
3D/3I NM( )	Non Major Elective – Internet and its Applications	2	0	2

4840 Qn. No. 4840

Unit: I

Internet and World wide web: Introduction – What's Special about Internet – Internet Access – Internet Basics – Internet Addressing – The World Wide Web – Web Pages and HTML – Web Browsers – Searching the web – Internet Chat.

Unit: II

Electronic Mail: Introduction – Why use E-Mail – How Private is E-Mail – How E-Mail Works – E-Mail Names and Addresses – Mailing Basics – E-Mail Ethics – Internet Code of Conduct – Spamming – E-Mail Advantages and Disadvantages – Tips for Effective E-Mail use – Smileys – Useful E-Mail Services – Mailing Lists – Newsgroups.

Unit: III

Intranets and Electronic Commerce: Intranets: Introduction – Characteristics of Intranet – Advantages of Intranets – Business benefits of Intranets – Drawbacks of Intranets – Why does an organization need Intranet – Intranet vs. Groupware – Intranet vs. E-Mail – Intranet vs. Client/Server Systems – Extranet – Relationship between Intranets, Extranets, and E-Commerce. **Electronic Commerce:** Introduction – Business to Business E-Commerce – The Virtual Shop – The Digital Middle Man – What kind of E-Commerce to use.

Text Book:

"Fundamentals of Information Technology" by Alexis Leon, Mathews Leon. Publishers: Leon Vikas, 1999.

Reference Books:

1. "Internet Concepts" by Rajaraman.
2. "Computers Today" – P.K.Basandra

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Non-Major Elective

NOV-09

THE MADURA COLLEGE (AUTONOMOUS), MADURAI-11

DEPARTMENT OF COMPUTER SCIENCE

BLUE-PRINT

COURSE: B.Sc SEMESTER : III

PAPER : INTERNET AND ITS APPLICATIONS MAX MARKS: 75

CODE : 3D/3IT NM (4840)

	PART-A	PART-B	PART-C
UNIT-I	2	3	1
UNIT-II	1	2	1
UNIT-III	2	3	1
TOTAL	5	8	3

PART-A : ANSWER ALL QUESTIONS 5 * 3 = 15 MARKS
PART-B : ANSWER ANY 5 QUESTIONS (OUT OF 8) 5 * 6 = 30 MARKS
PART-C : ANSWER ALL QUESTIONS (EITHER OR TYPE) 3 * 10 = 30 MARKS

75 MARKS

JR

THE MADURA COLLEGE (AUTONOMOUS), MADURAI-11
DEPARTMENT OF COMPUTER SCIENCE

MODEL QUESTION PAPER

CLASS : B.Sc
TITLE : INTERNET AND ITS APPLICATIONS
CODE : 3D/31TNM

SEMESTER : III
TIME : 3 HOURS
MAX.MARKS: 75

PART-A

ANSWER ALL QUESTIONS: (5X 3 = 15)

1. What do you know about Internet?
2. Differentiate between Domain name and IP address.
3. What is an E-Mail? Why use E-Mail?
4. List out the business benefits of Intranet
5. What is the role of digital Middle Man in E-Commerce?

PART –B

ANSWER ANY FIVE QUESTIONS: (5 X 6= 30)

6. Explain briefly about the Internet access.
7. Discuss the common types of Browser.
8. Explain the various search engines available in an Internet.
9. How will you compose, reply and forward an E-Mail Message?
10. What are mailing list and How do they work?
11. Discuss the characteristics of Intranet.
12. Why does an organization need Intranet ?
13. What is business-to-business E-Commerce and what are its advantages?

PART –C

ANSWER ALL QUESTIONS: (3 X 10 = 30)

14. a). Explain in detail about WWW.
(or)
b). Discuss about Internet Chat.

15. a). Discuss the advantages and disadvantages of E-Mail.
(or)
b). Discuss about News group.

16. a). Discuss the benefits of business-to-commerce E-Commerce.
(or)
b). Discuss the relationship between Intranet, Extranets and E-Commerce.

B.Sc Computer Science Syllabus (UPTO 2016)

THE MADURA COLLEGE (AUTONOMOUS) MADURAI – 11
IV SEMESTER

UPTO 2016

Part-A - 3 m
Part-B 6 m
C 10 m

CODE	SUBJECT : (4842)	T	P	C
	COMPUTER NETWORKS	4	0	4

Qn. No. 4842

A B C

Unit – I: Introduction (4D1 / 4D5)

Uses of Computer Networks - Network Hardware - Network Software -Reference Models - The OSI Reference Model - The TCP/IP Reference Model - Novell NetWare - The ARPANET - The Internet - The Physical Layer - Transmission Media - The Telephone System - Structure of the Telephone System, the Local Loop, and Switching.

Unit – II: The Data Link Layer

Data link layer design issues - Error Detection and Correction - Elementary data link protocols.

Unit – III: The Medium Access Sub Layer

The channel allocation problem - Multiple Access Protocols – ALOHA -Carrier Sense Multiple Access Protocols - Collision-Free Protocols - IEEE standard 802 for LANS and MANS - IEEE Standard 802.3 and Ethernet - IEEE Standard 802.4 - Token Bus - IEEE Standard 802.5 -Token Ring.

Unit – IV: The Network Layer

Network layer design issues - Routing Algorithms - Congestion Control Algorithms - General Principles of Congestion Control - Congestion Prevention Policies.

Unit – V: The Transport Layer

The transport service - Elements of transport protocols.

Text Book:

A.S.Tanenbaum - "Computer Networks" – III Ed., PHI.

References Books:

1. John Freer – "Computer Communication & Network" - Pitman Computer System Series.
2. W.Stallings – "Data & Computer Communication" - IV Ed.,PHI.

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THE MADURA COLLEGE (EVENING- AUTONOMOUS), MADURAI-11
DEPARTMENT OF COMPUTER SCIENCE

BLUE-PRINT

Course : B.Sc (Computer Science) Semester :IV

Paper : Computer Networks Max Marks:75

Code : 4D1( )/4DS( ) Time :3 Hours

UNITS	PART-A	PART-B	~~PART-B~~ C
UNIT-I	1	2	1
UNIT-II	1	2	1
UNIT-III	1	1	1
UNIT-IV	1	2	1
UNIT-V	1	1	1
TOTAL	5	8	5

PART A: Answer All Questions 5 * 3 = 15 Marks

PART B: Answer any five Questions 5 * 6 = 30 Marks

PART C: Answer any three Questions 3 * 10 = 30 Marks

75 Marks

8/3/10

THE MADURA COLLEGE (EVENING- AUTONOMOUS),MADURAI-11
DEPARTMENT OF COMPUTER SCIENCE
MODEL QUESTION PAPER

Course : B.Sc (Computer Networks) Semester :II
Paper : Computer Networks Max Marks:75
Code : 4D1[illegible]/4D5[illegible] Time :3 Hours

PART-A

I. Answer ALL: (5 * 3 = 15 Marks)

1. What is Modem?
2. Define Polynomial Code.
3. Define Token Bus
4. What is Datagram subnet?
5. What is QOS?

PART-B

II.Answer any five questions: (5 * 6 = 30 Marks)

6. Explain in detail about MAN.
7. Discuss about fiber optic transmission medium
8. Explain about simplex stop and wait protocol
9. Describe framing.
10. Discuss Dynamic channel allocation in LAN's and MAN's
11. What are all the difference between virtual subnet and Datagram?
12. Write short notes on(i)leaky bucket(ii)Token bucket algorithms.
13. What is multiplexing?Explain in detail.

PART-C

III. Answer Any Three: (3 * 10 = 30 Marks)

13. Discuss ISO-OSI reference model in detail
14. Explain Error detection and correction methods
15. Explin the carrier sense multiple access protocols in detail.
16. Discuss any four routing algorithms
17. Explain the services provided by transport layer.

UPTO 2016

THE MADURA COLLEGE (AUTONOMOUS) MADURAI – 11

IV SEMESTER

(UPTO 2016)

CODE	SUBJECT : [illegible]	T	P	C
	UNIX AND SHELL PROGRAMMING	5	0	4

4D2[illegible] (4844) (4844)

Unit – I:

Introduction: UNIX System V Documentation – Evolution of the UNIX System – Conventions - Getting started on UNIX system V: User Names and Passwords – Signing on to the UNIX systems – Correcting typing mistakes – Some simple commands – Format of UNIX system commands – Changing Password – Shell's use of special characters – signing off - **Directories and Files:** pwd, ls, cd, cat, pg, tail, file, mkdir, cp, mv, rm, rmdir & chmod Commands – Full path names and relative path names – Rules for naming files and directories - Wild-card characters or meta characters – Non-printing characters in filenames – Ownership and Protection - **Processes and standard files:** Redirecting the standard Input and Output – Notes and Cautions on redirection – Creating a file the easy way with 'cat' – Connecting commands with pipelines – Filters – 'tee' command – Diagnostic output – Background Processing.

Unit – II:

User to User to Communication: Sending messages with 'Write' – Controlling messages with 'mesg' – The electronic mail system using 'mail' and 'mailx' – 'calendar' command – 'at' command – 'news' command - **Text Manipulation:** lp, pr, split, sort, wc, grep, fgrep, egrep, sed, tr, cut, paste, pr, diff, cmp & comm.

Unit – III:

The Visual Text Editor vi: Introduction - Calling up vi – Getting out of vi – Command Structure – Accessing ex commands – Basic cursor movements – Changing the window – Undo & '.' Commands – Simple text manipulations – Creating a new file – Setting Editor options – Dealing with words, Sentences, Paragraphs & Lines of text - Operating on whole lines – Line numbers, search strings and marking – cut, copy and paste operations – Accessing ex, UNIX system V commands within vi.

Contd . . . 2

4D2 ..2..

Unit – IV:

Using the Shell as a programming language: Login Profile – Shell procedures & Variables – Arguments to Shell Procedures – echo command – Shell programming – User input to Shell Procedures – Shell functions – Debugging Shell Procedures.

Unit – V:

System Administration: Special Users – Starting up and shutting down the system – Accounts, Users and Groups – Becoming the Super user with 'su' – File systems – Devices and special files – 'find' command – Backups and Restores – Maintaining file systems with 'fsck' – Other administrative topics.

Text Book:

Rachel Morgan, Henry Mcgilton – "Introducing UNIX system V" – Tata McGrawHill 1997.

Reference Book:

1. Brian W.Kernighan Pike – "The UNIX programming Environment" – PHI.
2. Sumitabha Das - "UNIX" - TMH - II Edition.

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THE MADURA COLLEGE (AUTONOMOUS), MADURAI – 11.
DEPARTMENT OF COMPUTER SCIENCE.

BLUE PRINT

COURSE : B.Sc Computer Science **SEMESTER** : IV

PAPER : UNIX & Shell Programming **TIME** : 3 Hrs.

CODE : 4D2 **MAX.MARKS :** 75

UNITS	PART – A OPEN TYPE	PART – B EITHER OR TYPE
UNIT - I	1	1
UNIT - II	2	1
UNIT - III	1	1
UNIT - IV	2	1
UNIT - V	2	1
TOTAL	8	5

PART – A: Answer Any 5 out of 8 (Open Type) 5 * 5 = 25 marks

PART – B: Answer all Questions (Either or Type) 5 * 10 = 50 marks

75 marks

8/3/10

THE MADURA COLLEGE (AUTONOMOUS), MADURAI – 11.
DEPARTMENT OF COMPUTER SCIENCE

MODEL QUESTION PAPER

COURSE : B.Sc Computer Science **SEMESTER** : IV

PAPER : UNIX & Shell Programming **TIME** : 3 Hrs.

CODE : 4D2 **MAX.MARKS** : 75

Part-A **Answer Any 5** **(5 * 5 = 25)**

1. State the Significance of Pipelining Structure with example.
2. Write a note on File Comparison Commands.
3. Describe about 'Sort' command.
4. Summarize the Editor Options in vi editor.
5. Describe Shell functions.
6. Write a note on Interrupt Handling.
7. Describe the procedure to add a new user to the System.
8. Describe the process of mounting a File System.

Part-B **Answer All** **(5 * 10 = 50)**

9. a. Explain 'ls' command with all its options.
   (or)
   b. Explain the Background Processing in UNIX.
10. a. Explain the functionality of 'grep' command with all its options.
    (or)
    b. Compare and contrast the 'mail' & 'mailx' commands.
11. a. Explain the Line manipulation commands in vi editor.
    (or)
    b. Explain Cut, Copy & Paste operations in vi editor.
12. a. Explain the following control structures in UNIX.
    i. 'if' , 'else-if' & 'elif' statements
    ii. 'case' statement
    (or)
    b. Explain 'test' command.
13. a. Explain UNIX System V File System.
    (or)
    b. Explain the following:
    i. Backup Procedure. (5)
    ii. Restore Procedure. (5)

THE MADURA COLLEGE (AUTONOMOUS) MADURAI – 11

HD3 /UPto IV SEMESTER **UPTO 2016**

CODE	SUBJECT : (4846)	T	P	C
	System Programming and Operating System	4	0	4

Unit – I: Macro Language & Macro Processor Qn. No. 4846

Macro instruction – Features of a macro facility - Macro instruction arguments - Condition macro expansion - Macro calls within Macros - Macro instruction defining macros - Implementation - Implementation of a restricted facility - Two pass algorithm - A single pass algorithm.

Unit – II: Loaders

Loader schemes - Compile and Go loaders - General loaders scheme - Absolute loaders - Subroutine linkages - Relocating loaders - Direct linking loaders - Other loaders schemes – Binders - Linking loaders – Overlays - Dynamic binders - Design of a absolute loader - Design of a direct linking loaders - Specification of problem - Specification of data structures - Format of data bases-Algorithm.

Unit – III: Operating Systems

I/O Programming - Multiple processor and interrupt mechanisms - Evolution of multiple processor system - I/O programming - I/O processor structure - Example of I/O programs - Communication between the CPU and the channel - Interrupt structure and processing - Example of I/O interrupt processing - Multiple processors.

Unit - IV: Memory Management

Single contiguous allocation - Partitioned allocation - Relocatable partitioned allocation - Paged allocation - Demand paged allocation - Segmented allocation - Segmented paged allocation.

Unit – V: Processor Management

Scheduler - Traffic Controller - Race condition - Stale – mate multiprocessor system - Device management - Device characteristics - Device management techniques - Information management - Development of file systems - Structure of a general file system - Example of a file system- Features of a general File System.

Text Book:

John J.Donovan - "Systems Programming & Operating Systems" - TMH.

Reference Books:

1. Dhamdhere - "Systems Programming & Operating Systems" – TMH.
2. Colin Ritchie - "Operating Sytems" – BPB.

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THE MADURA COLLEGE (AUTONOMOUS), MADURAI-11

DEPARTMENT OF COMPUTER SCIENCE

BLUE-PRINT

Course : B.Sc (Computer Science) Semester : IV

Paper : System Programming and Operating System Max Marks: 75

Code : 4D3(2008 on)/4D3(upto 2007) Time : 3 Hours

UNITS	PART-A (Open Type)	PART-B (Either or Type)
UNIT-I	2	1
UNIT-II	1	1
UNIT-III	1	1
UNIT-IV	2	1
UNIT-V	2	1
TOTAL	8	5

PART A: Answer Any 5 Questions out of 8 5 * 5 = 25 Marks

PART B: Answer all Questions (Either or Type) 5 * 10 = 50 Marks

75 Marks

PTO

THE MADURA COLLEGE (AUTONOMOUS), MADURAI-1

DEPARTMENT OF COMPUTER SCIENCE

MODEL QUESTION PAPER

Course : B.Sc (Computer Science) Semester :IV
Paper : System Programming and Operating System Max Marks:75
Code : 4D3( ) Time :3 Hours

PART-A

I. Answer Any FIVE Questions: (5 * 5 = 25 Marks)

1. Discuss Macro Defining Macros with an Example.
2. Write short notes on Macro Calls within Macros.
3. Describe about Compile and Go Loaders with an Example.
4. Write short notes on communication between CPU and the Channel.
5. Describe about single Contiguous Memory Allocation.
6. Explain Demand Paged Allocation.
7. Write short notes on Stalemates.
8. Mention about different techniques of device Management.

PART-B

II. Answer ALL Questions: (5 * 10 = 50 Marks)

9. a.Explain Two-Pass Macro Processor algorithm with suitable Flow-Chart.

(OR)

b.Expain Single-Pass Macro Processor Algorithm.

10. a.Explain Design of a Direct-Linking Loader.

(OR)

b.Explain about Relocating Loader.

11. a.Explain Interrupt Processor Structure and Processing with suitable Example.

(OR)

b.Explain I/O Processor Structure with Example I/O Programs.

12. a.Explain Relocatable Partitioned Allocation.

(OR)

b.Describe about Segmented Memory Management.

13. a.Explain about Multiple-Processor System.

(OR)

b.Explain about Features of a General File System.

(UPTO- 2016)

THE MADURA COLLEGE (AUTONOMOUS) MADURAI – 11

IV SEMESTER

UPTO 2016

CODE	SUBJECT : 4D4 [redacted] (4848)	T	P	C
	VISUAL PROGRAMMING	5	0	4

Unit – I: Integrated Development Environment On. No. 4848

Introduction - Learning the IDE Features - Visual Basic editor - Working with Multiple Projects - Customizing the IDE – Working with Forms: The Anatomy of a Form - Working with forms properties - Tweaking a form's properties - Form events - Form Methods - Multiple Document Interface (MDI) forms - Form Wizard.

Unit – II: Selecting & Using Controls

Command Buttons - Text Boxes - Labels - Option Buttons - Check Boxes Frame Controls - List Boxes - Combo Boxes - Image Objects - Picture Boxes - Timers - Scroll Bars- Drive & Directory list Boxes - File List Boxes - Adding Other Controls to the Toolbox.

Unit – III: Understanding Data Types

Variable Types - Arrays - Constants- Logical Operators – Evaluating conditions in code – Code Modules - Code Library - Retrieving Code Modules - Creating a Code Module - Using Private & Public Sub Procedures - Passing Parameters to Procedures - Creating and using Functions - Adding Code Modules - Working with Class Modules.

Unit – IV: Using Menus & Toolbars

Menus and Toolbars - Menu Object - Creating a Menu with the Menu Editor - Creating Toolbars – Cool bar control – Storing & Retrieving Data - Working with ASCII Files - Using Data Controls - The Anatomy of a Database - Creating Databases with Visual Data Manager - Creating a Database Table - Creating a Query - Modifying a Table.

Unit – V: Using ActiveX & DLL

Understanding ActiveX Platform - The Role of ActiveX - Understanding the Role of ActiveX in Software Development - Creating and Using ActiveX Documents - Creating and Using ActiveX controls - Creating and Using ActiveX DLLs - Using DLLs & The Windows API - Introducing Dynamic Link Libraries - DLL calling conventions - The API Viewer - Using API in Applications.

Text Book:

Steve Brown – "Visual Basic 6" – BPB Publications 2003.

Reference Books:

1. Content Development Group – "Visual Basic 6.0 Programming"-TMG.
2. Steven Holzner – "Visual Basic 6 Programming".

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THE MADURA COLLEGE (AUTONOMOUS), MADURAI – 11.
DEPARTMENT OF COMPUTER SCIENCE.

BLUE PRINT

COURSE : B.Sc Computer Science
SEMESTER : IV
PAPER : Visual Programming
TIME : 3 Hrs.
CODE :
MAX.MARKS : 75

UNITS	PART – A OPEN TYPE	PART – B EITHER OR TYPE
UNIT - I	2	1
UNIT - II	2	1
UNIT - III	2	1
UNIT - IV	1	1
UNIT - V	1	1
TOTAL	8	5

PART – A: Answer Any 5 out of 8 (Open Type) 5 * 5 = 25 marks

PART – B: Answer all Questions (Either or Type) 5 * 10 = 50 marks

75 marks

THE MADURA COLLEGE (AUTONOMOUS), MADURAI – 11.
DEPARTMENT OF COMPUTER SCIENCE
MODEL QUESTION PAPER

COURSE : B.Sc Computer Science **SEMESTER :** IV

PAPER : Visual Programming **TIME :** 3 Hrs.

CODE : 4D4(**MAX.MARKS :** 75

Part-A **Answer Any 5** **(5 * 5 = 25)**

1. Describe Editor Tab Options.
2. Describe about Anatomy of a Form.
3. Compare and Contrast List Box and Combo Box.
4. Describe Drive, Directory & File List Box Controls.
5. Write a note on Dynamic arrays.
6. Write a note on Code Modules.
7. How will you create Toolbars? Explain.
8. Describe the API Viewer.

Part-B **Answer All** **(5 * 10 = 50)**

9. a. Explain the Features of IDE.
   (or)
   b. Explain MDI Forms with example.
10. a. Write a VB application to demonstrate the Timer Control.
    (or)
    b. Explain the Following Controls.
    (i)Option Button & Check box.
    (ii)Picture Box & Image Object.
11. a. Explain How to create and use Class Modules in VB applications.
    (or)
    b. Explain the Parameter Passing Mechanism in Procedures.
12. a. Write a VB application to demonstrate Menu Editor.
    (or)
    b. Explain the working principle of Visual Data Manager.
13. a. Briefly explain the role of ActiveX in software development.
    (or)
    b.Explain Activex DLL with suitable demonstration.

THE MADURA COLLEGE (AUTONOMOUS) MADURAI – 11

Sub Code:- 4AD(…)/4D1(…)

IV SEMESTER UPTO 2016 4854

CODE	SUBJECT : 4AD (2002 ON) (4854)	T	P	C
	OPERATIONS RESEARCH	4	0	2

Unit-I: Linear Programming Problem - I

Mathematical Formulation of the problem – Graphical Solution – Introduction- Graphical Solution Method – Some exceptional cases- General L.P.P. – Canonical and Standard forms of L.P.P. – Simplex Method – Introduction – Fundamental Properties of Solutions – The computation procedure – Use of Artificial Variable.

Unit-II: Linear Programming Problem - II

Duality in Linear Programming – Introduction – General Primal-Dual pair – Formulating a Dual Problem – Duality and Simplex Method. Transportation Problem – Introduction – General Transportation Problem – the transportation table – Solution of a Transportation problem – Finding an initial basic feasible solution – test for optimality – Degeneracy in transportation problem – Transportation Algorithm (MODI method). Assignment Problem – Introduction – Mathematical formulation of the problem – the assignment method – Special cases in assignment problems – A typical assignment problem – the traveling salesman problem.

Unit-III: Inventory Control

Introduction – The inventory decisions – Costs associated with inventories – Factors affecting inventory control – Economic Ordering Quantity – Deterministic inventory problems with no shortages – Deterministic inventory problems with shortages – EOQ problems with price breaks.

Unit-IV: Game Theory

Introduction – Two-person zero-sum games – some basic terms – the Maxmin-Minimax principle –. Games without Saddle points-mixed strategies – graphic solution of 2 x n and m x 2 games – Dominance property – Arithmetic method for n x n games.

Unit-V Network Scheduling

Introduction – network and basic components – logical sequencing – rules of network construction – critical path analysis – Probability Considerations in PERT – Distinction between PERT and CPM.

Text Book:

Kanti Swarup, P.K. Gupta, Man Mohan – "Operations Research" – 9th edition, Sultan Chand & Sons Educational Publishers, New Delhi.

Reference Books:

1. Hamdy A. Taha – "Operations Research an Introduction" – PHI, 8th edition.
2. S.D. Sharma – "Operations Research" – 12th edition, Kedar Nath Ram Nath & Co Publishers, Meerut.

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THE MADURA COLLEGE (AUTONOMOUS), MADURAI-11

DEPARTMENT OF COMPUTER SCIENCE

BLUE-PRINT

Course : B.Sc (Computer Science) Semester : IV

Paper : Operation Research Max Marks: 75

Code : 4AD ([illegible]) Time : 3 Hours

UNITS	PART-A (Open Type)	PART-B (Either or Type)
UNIT-I	2	1
UNIT-II	2	1
UNIT-III	1	1
UNIT-IV	2	1
UNIT-V	1	1
TOTAL	8	5

PART A: Answer Any 5 Questions out of 8 5 * 5 = 25 Marks

PART B: Answer all Questions (Either or Type) 5 * 10 = 50 Marks

75 Marks

THE MADURA COLLEGE (AUTONOMOUS), MADURAI-11

DEPARTMENT OF COMPUTER SCIENCE

MODEL QUESTION PAPER

Course : B.Sc (Computer Science) Semester :IV

Paper : Operation Research Max Marks:75

Code : 4AD .../4D1... Time :3 Hours

PART-A

I. Answer Any FIVE Questions: (5 * 5 = 25 Marks)

1. An electronic company is engaged in the production of two components C_1 and C_2 used in T.V. sets. Each unit of C_1 costs the company Rs. 25 in wages and Rs. 25 in material, while each unit of C_2 costs the company Rs.125 in wages and Rs. 75 in material. The company sells both products on one-period credit terms, but the company's labour and material expences must be paid in cash. The selling price of C_1 is Rs. 150 per unit and of C_2 is Rs. 350 per unit. Because of the strong monopoly of the company for these components, it is assumed that the company can sell at the prevailing prices as many units as it produces. The company's production capacity is, however, limited by two considerations. First, at the beginning of period 1, the company has an initial balance of Rs. 20,000. Second, the company has available in each period 4,000 hours of machine time 2,800 hours of assembly time. The production of each C_1 requires 6 hours of machine time 4 hours of assembly time, whereas the production of each C_2 requires 4 hours of machine time 6 hours of assembly time. Formulate this problem as an Linear Programming Model so as to maximize the total profit to the company.

2. Use Graphical method solve the L.P.P.:
   Minimize $Z = 20x_1 + 40x_2$ Subject to the constraints: $36x_1 + 6x_2 \geq 108$, $3x_1 + 12x_2 \geq 36$, $20x_1 + 10x_2 \geq 100$ and $x_1, x_2 \geq 0$.

3. Describe about the rules for formulating a Dual Problem.

4. Write down the Dual of the following:
   a) Maximize $z = 2x_1 + x_2$ subject to the constraints:
   $x_1 + 2x_2 \leq 10$, $x_1 + x_2 \leq 6$, $x_1 - x_2 \leq 2$, $x_1 - 2x_2 \leq 1$;
   $x_1, x_2 \geq 0$.
   b) Maximize $z = 2x_1 + 4x_2 + 4x_3 - 3x_4$ subject to the constraints :
   $x_1 + x_2 + x_3 = 4$, $x_1 + 4x_2 + x_4 = 8$, $x_1, x_2, x_3, x_4 \geq 0$.

Contd.

5. Describe about the Cost associated with inventory.

6. Solve the following 2-Person Zero-Sum Game:

		Player B		
Player A		15	2	3
		6	5	7
		-7	4	0

7. What is dominance Property? List down its rule.

8. Describe about the difference between PERT and CPM.

PART-B

II. Answer ALL Questions: **(5 * 10 = 50 Marks)**

9. a) Use Simplex method to
Minimize $z = x_2 - 3x_3 + 2x_5$ subject to the constraints:
$3x_2 - x_3 + 2x_5 \leq 7$, $-2x_2 + 4x_3 \leq 12$, $-4x_2 + 3x_3 + 8x_5 \leq 10$;
$x_2, x_3, x_5 \geq 0$

(OR)

b) Use penalty(or Big M) method to
Maximize $z = x_1 + 2x_2 + 3x_3 - x_4$ subject to the constraints: $x_1 + 2x_2 + 3x_3 = 15$, $2x_1 + x_2 + 5x_3 = 20$, $x_1 + 2x_2 + x_3 + x4 = 10$, $x_1, x_2, x_3, x_4 \geq 0$.

10. a) Consider the following Transportation problem:

Factory	Godowns						Stock Available
	1	2	3	4	5	6	
A	7	5	7	7	5	3	60
B	9	11	6	11	-	5	20
C	11	10	6	2	2	8	90
D	9	10	9	6	9	12	50
Demand	60	20	40	20	40	40	

It is not possible to transport any quantity from factory B to Godown 5. Determine:

i) Initial solution by Vogel's Approximation method.
ii) Optimum Basic Feasible Solution.
iii) Is the optimum solution unique? If not find the alternative optimum basic feasible solution.

(OR)

Contd.

A machine operator processes five types of items on his machine each week, and must choose a sequence for item. The set-up cost per change depends on the item presently on the machine and the set-up to be made according to the following table:

From Item	To item				
	A	B	C	D	E
A	∞	4	7	3	4
B	4	∞	6	3	4
C	7	6	∞	7	5
D	3	3	7	∞	7
E	4	4	5	7	∞

If he processes each type of item once and only once each week, how should he sequence items on his machine inorder to minimize the total set-up cost?

11. a) A manufacturing company purchases 9,000 parts of a machine for its annual requirements, ordering one month usage at a time. Each part costs Rs. 20. The ordering cost per order is Rs. 15 and the carrying charges are 15% of the average inventory per year. You have been assigned to suggest a more economical purchasing policy for the company. What advice would you offer and how much would it save the company per year?

(OR)

b) Find the optimum order quantity for a product for which the price breaks are as follows:

Quantity	Purchasing cost per unit (Rs.)
$0 \leq Q1 < 100$	20
$100 \leq Q2 < 200$	18
$200 \leq Q3$	16

The monthly demand for the product is 400 units. The storage cost is 20% of the unit cost of the product and the cost of ordering is Rs. 25.00 per month.

12. a) Obtain the optimal strategies for both-persons and the value of the game for zero-sum two-person game whose payoff matrix is as follows:

$$\begin{vmatrix} 1 & -3 \\ 3 & 5 \\ -1 & 6 \\ 4 & 1 \\ 2 & 2 \\ -5 & 0 \end{vmatrix}$$

(OR)

Contd.

b) Use matrix oddment method to solve the following 3 x 3 game:

$$\begin{vmatrix} 0 & 1 & 2 \\ 2 & 0 & 1 \\ 1 & 2 & 0 \end{vmatrix}$$

13. a) A project consists of a series of tasks labeled A,B,…,H,I with the following relationships (W<X,Y means X and Y cannot start until W is completed; X,Y<W means W cannot start until both X and Y are completed). With this notation construct the network diagram having the following constraints: A<D,E; B,D<F; c<G; B,G<H; F,G<I. Find also the minimum time of completion of the project, when the time (in days) of completion of each task is as follows:

Task:	A	B	C	D	E	F	G	H	I
Time:	23	8	20	16	24	18	19	4	10

(OR)

b) A project consists of eight activities with the following relevant information:

Activity	Immediate predecessor	Estimated duration(days)		
		Optimistic	Most likely	Pessimistic
A	-	1	1	7
B	-	1	4	7
C	-	2	2	8
D	A	1	1	1
E	B	2	5	14
F	C	2	5	8
G	D,E	3	6	15
H	F,G	1	2	3

i) Draw the PERT network and find out the expected project completion time.

ii) What duration will have 95% confidence for project completion?

iii) If the average duration for activity F increases to 14 days, what will be its effect on the expected project completion time which will have 95% confidence?

THE MADURA COLLEGE (AUTONOMOUS) MADURIA – 11
(Affiliated by Madurai Kamaraj University)

Class : B.A. (Sociology)	**Sub.Code : 4GAD (2012 on)**
Title : BASICS OF COMPUTERS	**Qn.No. : 4855**
Time : 3 Hours	**Max.Marks : 75**

ALLIED PAPER

Unit I: Introduction

Introduction to Computer – Classification of Digital Computer system – Computer Architecture – Memory Units – Auxiliary Storage Devices –Input and Devices.

Unit II: Software

Introduction to computer Software – Operating System – Programming Languages – General Software – Features and trends

Unit III: Database System

Database Management Systems – Data Processing – Introduction to Database Management System – Internet –Intranet.

Unit IV: Networking

Introduction to Telecommunication – Networking – Communication System – Distributed System – Internet –Intranet.

Unit V: Internet Applications

Multimedia tools – Virtual Reality – Data warehousing –Data Mining – Application : Geographical Information System – Computer in Business, Industry ,Home, Education and Training , e – governance.

Books for Reference:

1) Henry C.Lucas –"Information Technology for Manage "-MGH.
2) Williams,Sawer,Hutchinson-"Using Information Technology"-MCH.

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Blueprint

Class: B.A Sociology
Paper: Computer Science
Subject Code: 4GAD (2012 on)

Max. Marks: 75

Qn. No. 4855

Units	Part-A	Part-B (Open Type)	Part-c (Either or Type)
Unit-I	1	1	1
Unit-II	1	2	-
Unit-III	1	2	-
Unit-IV	1	1	1
Unit-V	1	2	1
Total	5	8	3

Part-A – Answer All Questions: 5*3=15

Part-B – Answer Any Five Out of Eight Questions: 5*6=30

Part-C – Answer All Questions: 3*10=30

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The Madura College (Autonomous – Evening)
Department of Sociology
Model Question Paper

Qn. No. 4855

Class: B.A Sociology **Max. Marks: 75**
Paper: Computer Science
SubjectCode: 4GAD (2012 on)

Part-A Answer All Questions 5*3 = 15

1. Write down the Classifications of Computer.
2. Write short notes on Software features.
3. What is Intranet.
4. Write short notes on Telecommunication.
5. Write short notes on Virtual reality.

Part-B Answer Any Five Question 5*6 = 30

6. Describe in detail about central processing unit.
7. Describe about computer software.
8. Explain in detail about programming languages.
9. Explain in detail about internet.
10. Explain about data Processing.
11. Discuss about Networking.
12. Describe about E-Commerce.
13. Explain about Geographical information system.

(P-T-O)

Part-C **Answer All Questions** 5*6 = 30

14. (a) Explain in detail about Computer Memory and Secondary Storage memory.

(OR)

(b) Explain in detail about Input and Output Devices with its Technology.

15. (a) Explain in detail about Communication Systems.

(OR)

(b) Explain in detail about Distributed Systems.

16. (a) Explain in detail about Data Warehousing.

(OR)

(b) Discuss the following in detail i)OLAP ii)GIS

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UPTO 2016

THE MADURA COLLEGE (AUTONOMOUS) MADURAI – 11

(UPTO-2016)

IV SEMESTER

CODE	SUBJECT : 4DNM ( ) (4856)	T	P	C
	Non Major Elective – PC Software (MS-Office)	2	0	2

4DNM/4ITNM ( )
Q. No. 4856 (4856)

Unit 1: Introduction to MS Word

Getting started with Word: Starting Word 2000 - Viewing Layouts- Typing, Navigating Documents and Selecting Text. Creating Professional Documents: Setting up the page – Customizing the page. Advance Tools in Word2000: proofing Tools – Using Tables - Mail merge – using Macros.

Unit 2: Introduction to MS PowerPoint

Getting started with PowerPoint: Usefulness of PowerPoint for Presentations – Starting a PowerPoint Presentation- Enhancing the presentation.

Unit 3: Advanced Concepts in PowerPoint

Features of PowerPoint: ClipArt and WordArt in PowerPoint – Working with Charts and tables. Advanced Concepts in PowerPoint: Importing and exporting charts - Giving final touches Creating Presentation for the Internet- Automatic work with Macros.

Text Book:

"Working with MS Office 2000" by Content Development Group. Tata McGraw-Hill Publishing Company Limited.

Reference Book:

"Pc Software for Windows 98 Made Simple"- Tata McGraw-Hill Publishing Company Limited.

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THE MADURA COLLEGE (AUTONOMOUS), MADURAI-11

DEPARTMENT OF COMPUTER SCIENCE

BLUE-PRINT

Course : Non-Major Elective

Semester : IV

Paper : PC Software (MS-Office)

Max Marks: 75

Code : 4D/4ITNM[illegible]

Time 2 Hrs 3 Hrs

UNITS	PART-A	PART-B	PART-C
UNIT-I	1	4	1
UNIT-II	2	2	1
UNIT-III	2	2	1
TOTAL	5	8	3

PART A: Answer All Questions 5 * 3 = 15 Marks

PART B: Answer any Five Questions 5 * 6 = 30 Marks

PART C: Answer All Questions (Either or Type) 3 * 10 = 30 Marks

75 Marks

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UPTO 2016

THE MADURA COLLEGE (Autonomous) MADURAI – 11
(Re-Accredited With 'A' Grade By NAAC)

RELATIONAL
TITLE : DATABASE MANAGEMENT SYSTEMS

CODE : 5D1 ( ) Qn.No. : 4858

Unit I:

Introduction: Database – System Applications – purpose of Database Systems – View of Data – Database Languages – Relational Databases.

Unit II:

Relational Model: Structure of Relational Databases – Fundamental Relational – Algebra Operations – Additional Relations – Algebra Operations – Null Values – Modification of the Database.

Unit III:

Background – Data Definition – Basic Structures of SQL Queries – Set Operations – Aggregate Functions – Null Values – Nested Sub Queries – Views – Modification of the Database – Joined Relations.

Unit IV:

The Tuple Relational Calculus – The Domain Relational Calculus – Query-by-Example – Database Design and the E-R Model: Overview of the Design Process – The Entity – Relationship Model – Constraints – Extended E-R Features – E-R Diagram.

Unit V:

Relational Database Design: Features of Good relational Designs – Atomic Domains and First normal Form – Decomposition using Functional Dependencies – Functional Dependency Theory – File Organization – Organization of Records in files – Data Dictionary Storage.

TEXT BOOK:

1. Abraham Silberschatz, H.F.Korth, Sudarsan.S, Database System Concepts, 5th Edition, Tata McGraw – Hill International Edition, 2006.

REFERENCE BOOK:

1. Alexis Leon Mathews Leon, DBMS, New Edition, Leon Vikas Publication.
2. Thomas Connolly, Database Systems, Addision Wesely, New Printed, 2000.

THE MADURA COLLEGE (EVENING-AUTONOMOUS), MADURAI-11

DEPARTMENT OF COMPUTER SCIENCE

BLUE-PRINT

Course : B.Sc (Computer Science) Semester :V

Paper : Relational Database Management System Max.Marks:75

Code : ~~3050~~ 5D1 Time: 3hrs

Qn.No.: 4858

UNITS	PART-A (Open Type)	PART-B (Either or Type)
UNIT-I	2	1
UNIT-II	2	1
UNIT-III	2	1
UNIT-IV	1	1
UNIT-V	1	1
TOTAL	8	5

PART A: Answer Any 5 Questions out of 8 5 x 5 = 25 Marks

PART B: Answer all Questions (Either or Type) 5 x 10 = 50 Marks

75 Marks

THE MADURA COLLEGE (EVENING-AUTONOMOUS), MADURAI-11
DEPARTMENT OF COMPUTER SCIENCE
MODEL QUESTION PAPER

Course : B.Sc (Computer Science) Semester :V

Paper : Relational Database Management System Max.Marks:75 Time:3hrs

Code : 5DI

PART-A

I. Answer any Five Questions: (5 x 5 = 25)

1. Explain the Purpose of Database Systems.
2. What are the levels in Data Abstraction?
3. Write short notes on Keys.
4. Explain Join operator with suitable example.
5. List out the parts in SQL Language.
6. Explain Aggregate Functions with suitable examples.
7. Explain Mapping Cardinalities.
8. Write shorts on
   I) Keys and Functional dependencies

PART-B

II.Answer ALL Questions: (5 x 10 = 50)

9. a. Explain Relational databases.
   (OR)
   b. Explain the Database languages

10. a. Explain in detail about the Fundamental Relational-Algebra operations with examples.
   (OR)
   b. Explain Modification of the databases.

11. a. Explain basic structure of SQL queries.
   (OR)
   b. Explain about Nested Queries with examples.

12. a. Explain Domain relational Calculus.
   (OR)
   b. Explain about QBE.

13. a. Explain Boyce-Codd Normal Form with Dependency preservation.
   (OR)
   b. Explain Functional dependency theory.

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UPTO 2016

THE MADURA COLLEGE (Autonomous) MADURAI – 11
(Re-Accredited With 'A' Grade By NAAC)

TITLE : SOFTWARE ENGINEERING

CODE : 5D2 (&) Qn. No. 4860

Unit – I: Introduction

Definitions - Some Size factors - Quality and Productivity factors - Managerial issues.

Unit – II: Planning A Software Project

Defining the problem - Developing a solution strategy - Planning the development process - Planning an organizational structure – Other Planning Activities.

Unit – III: Software Cost Estimation

Software cost factors - Software cost estimation techniques - Staffing level estimation - Software requirements definition – The software requirements specification – Formal Specification techniques.

Unit – IV: Software Design

Fundamental design concepts - Modules and modularization criteria - Design notations - Design techniques - Real-time and distributed system design – Test plans - Milestones, walkthroughs & inspections.

UNIT – V: Software Maintenance

Enhancing Maintainability during development - Managerial aspects of software maintenance - Configuration management - Source - code metrics - Other Maintenance tools and Techniques.

Text Book:

Richard Fairley – "Software Engineering concepts" – MGH.

Reference Books:

1. H.C. Shooman – "Software engineering design" - MGH - 1983.
2. Roger Pressman – "Software Engineering" – MGH - IV Ed.,1998.

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THE MADURA COLLEGE (AUTONOMOUS), MADURAI
DEPARTMENT OF COMPUTER SCIENCE

BLUE PRINT

COURSE: B.Sc. Computer Science **SEMESTER:** V

PAPER : Software Engineering **TIME** :3 Hrs

CODE : 5D2 / 5D2 **MAX.MARKS:**75

QN. NO:- 4860

UNITS	Part – A Open Type	Part – B Either or Type
Unit - I	1	1
Unit - II	2	1
Unit - III	2	1
Unit - IV	2	1
Unit - V	1	1
Total	**8**	**5**

Part – A: Answer any 5 out of 8 (Open Type) 5 * 5 = 25 marks

Part – B: Answer All Questions (Either or Type) 5 *10 = 50 marks

75 marks

THE MADURA COLLEGE (AUTONOMOUS), MADURAI
DEPARTMENT OF COMPUTER SCIENCE

MODEL QUESTION PAPER

COURSE: B.Sc. Computer Science **SEMESTER:** V

PAPER : Software Engineering **TIME** :3 Hrs

CODE : 5D2 / 5D2 **MAX.MARKS:**75

PART – A **Answer Any 5** **(5 X 5 = 25)**

1. Explain the Managerial Roles and Responsibilities.
2. Explain the format of Project Plan.
3. Describe about Project Legacy.
4. Explain how reliability affects the project cost.
5. Explain how Regular Expressions are used in functional specifications.
6. Explain the Concept of Data Abstraction.
7. Explain how Real Time Systems are designed?
8. Explain about Configuration Management.

PART – B **Answer All** **(5 X 10 = 50)**

9. a. Briefly explain the Project Size Categories.
   (or)
   b. Explain any 10 Quality and Productivity Factors in detail.
10. a. Explain in detail about the Programming team Structures.
    (or)
    b. Explain about the Waterfall Chart Model.
11. a. Explain the Staffing level Estimation.
    (or)
    b. Explain the Top-down Cost estimation tools.
12. a. Explain the concept of Coupling and Cohesion.
    (or)
    b. Explain about the Jackson Design technique in detail.
13. a. Explain the Concept of Unit Testing.
    (or)
    b. Explain in detail about the Source Code Metrics.

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UPTO 2016

THE MADURA COLLEGE (Autonomous) MADURAI – 11
(Re-Accredited With 'A' Grade By NAAC)

TITLE : WEB DESIGNING

CODE : 5D3 [illegible] Dn.No. : 4862

UNIT – I: Introduction to HTML

Designing a Home Page – HTML Generation – HTML Documents – Anchor Tag – Hyper link – Sample Documents – Head & Body Sections – Header Section – Title – Prolog - Links – Color full web page – Comment lines – Sample HTML Documents – Designing the body section – Heading Printing – Aligning the headings – Horizontal rules – Paragraphs – Tab settings – Images and pictures – Embedding PNG format Image.

UNIT – II: Lists and Tables

Ordered and unordered lists – headings in a list – nested lists – Table handling – tables – table creation in HTML – width of the table and cells – cell spanning – multiple rows/columns – coloring cells – Column specification – Sample tables.

Unit – III: Frames , Forms and DHTML

Frames – Frameset Definition – Frame definition – Nested frames – Forms – Action attributes – Method attributes – enctype attribute – Dropdown lists – Sample forms – Defining Styles – Elements of styles – Linking a style sheet to an HTML document – Inline styles – External style sheets – Internal style sheets - multiple styles.

Unit – IV: VB Script

Functions, Objects Variables: Variable Defined – Function Defined – Statements and Subroutines Defined – Object Defined.
Input and Output: Displaying Messages – Asking For Input – Command-Line Parameters as Input. **Manipulating Numbers**: Numbers in VBScript - Basic Arithmetic – Advanced Arithmetic – Boolean Math – Converting Numeric Data types – Converting other Data types to Numeric Data.

Unit – V: Objects in VB Script

Manipulating Strings: Strings in VBScript – Working with Sub strings – Concatenating Strings – Changing Strings – Formatting Strings – Converting other Data types to String data. **Manipulating Other Types of Data:** Working with Date and Times – Working with Arrays – Working with Bytes. **Controlling the Flow of Execution:** Conditional Execution-Loops – Putting it all together.

TEXT BOOK : 1. C Xavier - "World wide Web Design with HTML" – TMH.
2.Don Jones – "VBScript, WMI & ADSI Unleashed" – Pearson Publication.

REFERENCE BOOK:
1.Jennifer Niederst – "Web Design in a Nutshell" - Shroff Publishers.
2.Elizabeth Castro – "HTML for the World Wide Web" – Pearson Pub.

THE MADURA COLLEGE (AUTONOMOUS), MADURAI-11

DEPARTMENT OF COMPUTER SCIENCE

BLUE-PRINT

COURSE: B.Sc (COMPUTER SCIENCE) SEMESTER : V

PAPER : WEB DESIGNING MAX MARKS: 75

CODE : 5D3 TIME : 3 HOURS

QN. No: A862

	PART-A	PART-B	PART-C
UNIT-I	1	1	1
UNIT-II	1	2	---
UNIT-III	1	2	1
UNIT-IV	1	2	--
UNIT-V	1	1	1
TOTAL	5	8	3

PART-A : ANSWER ALL QUESTIONS 5*3 = 15 MARKS

PART-B : ANSWER ANY 5 QUESTIONS (OUT OF 8) 5 * 6 = 30 MARKS

PART-C : ANSWER ALL QUESTIONS 3 * 10 = 30 MARKS

75 MARKS

THE MADURA COLLEGE (AUTONOMOUS), MADURAI-11
DEPARTMENT OF COMPUTER SCIENCE
MODEL QUESTION PAPER

COURSE: B.Sc (COMPUTER SCIENCE)
PAPER : WEB DESIGNING
CODE : 5D3

SEMESTER : V
MAX MARKS: 75
TIME : 3 HOURS

PART-A

ANSWER ALL QUESTIONS: (5 X 3 = 15 marks)

1. What are the different types of heading tags that can be used in HTML?
2. Differentiate cell padding and cell spacing.
3. Comment on <select> tag.
4. Give the syntax of " if " statement.
5. Compare dynamic array and fixed array in VBScript.

PART –B

ANSWER ANY FIVE QUESTIONS: (5 X 6 = 30 marks)

6. Explain the basic structure of HTML document.
7. How many types of lists tags are supported in HTML? Describe them briefly.
8. Explain the <table> tag with its attributes.
9. Discuss the attributes of <input> tag with example.
10. Explain the elements of style in detail.
11. Difference between function and procedure in VBScript.
12. Explain the properties and methods of window object.
13. Write a VBScript program to validate E-mail id form.

PART –C

ANSWER ALL QUESTIONS: (3 X 10 = 30)

14 a). Discuss the text formatting tag in HTML with example
(OR)
b). Write a HTML program to create your college web site.

15 a). What are frames? How do you create? Explain with example.
(OR)
b). Illustrate the internal and external style with a suitable example.

16 a). Explain the built-in functions in the String object.
(OR)
b). Discuss the looping statements in VBScript.

B.Sc Computer Science Syllabus

UPTO 2016

THE MADURA COLLEGE (Autonomous) MADURAI – 11
(Re-Accredited With 'A' Grade By NAAC)

TITLE : COMPUTER GRAPHICS

CODE : 5D4 [illegible] Qn.No. : 4864

Unit – I: Geometry & Line Generation
Introduction – Pixels & frame buffers - Vector generation - Bresenhams's algorithm - Antialiasing of lines - Thick line segments Character generation - Displaying the frame buffer. Escp/n raster

Unit – II: Graphic Primitives
Introduction – Polygons - Polygon representation - Entering polygons - An inside test - Polygon interfacing algorithms - Filling polygons - Filling with a pattern.

Unit – III: Transformations
Introduction - Matrices - Scaling transformations - Sin and Cos – Rotation - Homogeneous coordinates & translation - Coordinate Transformations - Rotation about an arbitrary point - Other Transformations – Inverse transformations - Transformation Routines - Display procedures.

Unit – IV: Segments
Introduction - The segment table - Segment creation - Closing a segment - Deleting a segment - Renaming a segment - Visibility – Image transformation - Saving and Showing Segments - Other displays – File Structures.

Unit – V: Windowing & Clipping
Introduction - The viewing transformation - Clipping - The Cohen - Sutherland out code algorithm - The Sutherland hodgman algorithm - Adding clipping to the system - Multiple windowing.

Text Book:

Steven Harrington – "Computer Graphics, A Programming Approach" - Mcgraw Hill International Edition.

Reference Book:
Newman & Sproull – "Principles of Interactive Computer Graphics".

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The Madura College (Autonomous), Madurai-11
Department of Computer Science

Blue Print

Course: B.Sc. COMPUTER SCIENCE **Semester:** V

Paper: COMPUTER GRAPHICS **Time:** 3 Hrs

QN. NO :- 4864

Paper Code: 5D4 **Max. Marks**: 75

	PART – A (OPEN TYPE)	PART-B (EITHER OR TYPE)
UNIT-I	2	1
UNIT-II	2	1
UNIT-III	2	1
UNIT-IV	1	1
UNIT-V	1	1
TOTAL	8	5

Part – A: Answer any 5 out of 8 (Open type) 5 * 5 = 25 marks

Part – B: Answer All Questions (Either or Type) 5 * 10 =50 marks

75 marks

PTO

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The Madura College (Autonomous), Madurai – 11.
Department of Computer Science
Model Question Paper

Course: B.Sc. Computer Science
Paper: COMPUTER GRAPHICS
Paper Code: 5D4 (2008 on & upto 06)

Semester: V
Time: 3 Hrs
Max. Marks: 75

PART – A

Answer any Five questions **(5 X 5 = 25)**

1. Write short notes on vectors.
2. Describe how characters are generated in Display Devices.
3. Write any five Algorithms of Display File Structure.
4. Derive the Matrices for Scaling Transformation.
5. Describe Polygon Interfacing Algorithm.
6. Describe about Inverse Transformation.
7. Write short notes on Image Transformation.
8. Describe Multiple-Windowing with suitable diagram.

PART – B

Answer all questions **(5 X 10 = 50)**

9.a.Explain Bresenham's Line Generation Algorithm.

(OR)

b.Explain in detail about Vector Generation Algorithm.

10.a.Explain about Filling Polygons.

(OR)

b.Explain in detail about Display Devices.

11.a.Explain Transformation Routines.

(OR)

b.Explain in detail about Display Procedures.

12.a.Write an Algorithm to Create a Segment.

(OR)

b.Write an Algorithm to Renaming a Segment.

13.a.Explain Cohen-Sutherland - Out-Code Algorithm.

(OR)

b.Explain in detail about Viewing Transformation.

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B.Sc. Computer Science Syllabus [illegible] UPTO 2016

THE MADURA COLLEGE (Autonomous) MADURAI – 11
(Re-Accredited With 'A' Grade By NAAC)

TITLE : MULTIMEDIA & ITS APPLICATIONS

CODE : 5D5 (B) [illegible] **Qn.No. 4868**

ELECTIVE I

A B

Unit - I: (ch: 1,2,3)
Introduction to Multimedia - CD-ROM and the Multimedia Highway – Multimedia Usage - Introduction to making multimedia - The stages of a project – Multimedia skills - The team.

1 1

Unit - II: (ch: 10, 11)
Basic Software tools - Text editing and word processing tools – OCR software – Painting and drawing tools – 3D modeling and animation tools - Image editing tools – Sound editing tools – Animation &movie tools - Multimedia Authoring tools - Making Instant Multimedia – Types of authoring tools – Time-based authoring tools.

2 1

Unit - III: (ch: 4,5)
Text - The power of meaning – About Fonts and Faces – Using Text in Multimedia – Computers and Text – Hypermedia and Hypertext – Sound - The power of sound – Multimedia System sounds – Digital Audio & MIDI audio – Audio file formats – MIDI Vs Digital Audio.

2 1

Unit - IV: (Ch: 6,7)
Images – Making Still Images – Color – Image file formats – Animation - The power of Motion – Principles of Animation – Animation by computer – Making Animations that work.

1 1

Unit - V: (Ch: 8, 15, 16)
Using Video – How video works – Broadcast Video standards - Planning and Costing - The process of making Multimedia – Scheduling – Estimating - Designing and Producing: Designing the structure – Designing the user interface – Producing.

2 1

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Text Book:

8 5

Tay Vaughan – "Multimedia Making it Work" - Sixth Edition.

Reference Books:

1.Multimedia in Practice - Technology & Applications - PHI – 1998.

2.John Villamil, Casanova Lous Molina – "Multimedia production - Planning and Delivery" - PHI.

THE MADURA COLLEGE (AUTONOMOUS), MADURAI-11

DEPARTMENT OF COMPUTER SCIENCE

BLUE-PRINT

Course : B.Sc (Computer Science) Semester :V

Paper : Multimedia and its Applications Max. Marks:75

Code : 5D5 [illegible] Time:3hrs

QN. No- 4868

UNITS	PART-A (Open Type)	PART-B (Either or Type)
UNIT-I	1	1
UNIT-II	2	1
UNIT-III	2	1
UNIT-IV	1	1
UNIT-V	2	1
TOTAL	8	5

PART A: Answer Any 5 Questions out of 8 5 * 5 = 25 Marks

PART B: Answer all Questions (Either or Type) 5 * 10 = 50 Marks

75 Marks

THE MADURA COLLEGE (AUTONOMOUS),MADURAI-11
DEPARTMENT OF COMPUTER SCIENCE
MODEL QUESTION PAPER

Course : B.Sc.(Computer Science) **Semester : V**
Paper : Multimedia and its Applications **Max. Marks:75**
Code : 5D5 **Time :3hrs**

PART-A

Answer Any FIVE Questions: **(5 x 5 = 25)**

1. Write short notes on the Stages of a project.
2. Describe about Painting and Drawing tools.
3. Write short notes on Card and Page-based Authoring Tools.
4. What is the use of Text in Multimedia?
5. Differentiate MIDI from Digital Audio.
6. Mention the steps involved in Rolling a Ball.
7. Describe about any two broadcast video standards.
8. Write Short notes on Estimation.

PART-B

Answer ALL Questions: **(5 x 10 = 50)**

9. a. Explain the application of multimedia in various environment.

(OR)

b.List and Explain the components needed to create a Multimedia Project.

10. a. Explain about the different types of tools used in Animation, Video and Digital movies.

(OR)

b.Explain about different types of Authoring Tools.

11. a.Explain in detail about Text handling in Computers.

(OR)

b.Explain in Detail about Hypermedia and Hypertext.

12. a.Explain in detail about Animation by Computer.

(OR)

b.Explain about Colors in Multimedia.

13. a.Explain about Process of Making Multimedia Project.

(OR)

b.Describe in detail about Shooting and Editing Video.

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THE MADURA COLLEGE (Autonomous) MADURAI – 11
(Re - Accredited With 'A' Grade By NAAC)

(B.Sc. Computer Science)

TITLE : MANAGEMENT INFORMATION SYSTEMS

CODE : 6D1 (2008 ON) & Qn.NO. : 4878

up to 2007

Unit – I:
Meaning - Definition- Integrated system- MIS vs. data processing - MIS and other academic discipline such as managerial Accounting, operational research, Management, organization theory and computer science.

Unit – II:
MIS support for decision making-Structured, Programmable decisions-unstructured, non programmable Decisions- hierarchy of management activity-Information systems for operational & management control- Planned performance - Variance from planned performance, reasons for variances, Analysis of possible decisions or courses of action - MIS structure based on organizational function - Formal Vs Informal systems.

Unit – III:
Decision- making process-Phases of decision- making process, problem finding, Formulation and solution or alternatives-criteria for decision making - Decision trees.

Unit – IV:
Concepts of information - Definition of information. Model of communication system - mathematical definition of Information-information presentation-quality of Information - Gentle model of the human as an Information processor.

Unit – V:
Concepts of planning and control and Organization Struture - Meaning-object of organizational planning-Setting of goals and objectives-hierarchy of planning -the planning process-the sources of Planning data-development of planning models - The basic model of organization structure- organization by product or service- Matrix organization.

Text Book:
Margrethe.H.Olson&Gordon.B.Davis–"Management Information System Conceptual Foundations, Structure & Development" –II Ed., -MGH.

Reference Books:
1.Davidkroneke,RichardAllanHatch – "Management Information System".
2.C. Laudan,JanePriceLaudon – "Management Information System" – PHI.

THE MADURA COLLEGE (AUTONOMOUS) MADURAI – 11
DEPARTMENT OF COMPUTER SCIENCE

BLUE PRINT

MANAGEMENT INFORMATION SYSTEM

CLASS: - B.Sc III YEAR

SUB CODE: 6D1 (2008 on)

SEMESTER - VI

MAX MARKS: 75 MARKS.

TIME - 3 HRS

QN. NO :- A878.

UNITS	PART - A	PART- B	PART - C
I	1	1	1
II	1	2	1
III	1	1	1
IV	1	2	1
V	1	2	2
TOTAL	5	8	6

PART – A - Answer All Questions — 5 x 3 = 15 Marks

PART – B - Answer any Five Questions 5/8 — 5 x 6 = 30 Marks

PART – C - Answer any Three Questions 3/6 — 3 x 10 = 30 Marks

75 Marks

Head of the Department of Commerce
Madura College [Autonomous]
Madurai – 625 011

THE MADURA COLLEGE (Autonomous) MADURAI – 11

(Re-Accredited With 'A' Grade By NAAC)

B.Sc. Computer Science

TITLE : PROGRAMMING IN JAVA

CODE : 6D2 (2008 ON) Qn. No. : 4880

UNIT I:

Java History – Java Features – Simple Java programs – Class Declaration – Java tokens – Comments – Java Statements – JVM – Implementing java program – Command Line Arguments – Constants, Variables and Data types – Operators and Expressions. Decision Making Statements – Simple If Statements – Simple If statements – if – else statements – Nesting of if – else statements – else if ladder – switch statement – ternary operator – Looping – Looping Statements – While, Do, For Loop Statements.

UNIT II:

Creation of class – objects and methods – Accessing class members – Constructors – Method Overloading – Overriding – Static members – Inheritance – Interface.

UNIT III:

Arrays – Types – Length – Strings – Strings Manipulations – Vector – Vector Classes – Wrapper Class – Enumerated Types. Java API Packages – System Package – Creating and Accessing User defined and System Package – Managing Errors and Exceptions.

UNIT IV:

Managing input/output files in Java – Stream I/O – Byte stream Class – Character Stream Class – Creation of Files – File handing in Java – Multithreaded programming – Multithreads in java – Thread Class – Life Cycle of Thread – thread Exceptions – Priority – Synchronization.

UNIT V:

Applet Programming: Introduction- Preparing to Write Applets – Building Applet Code – Applet Life Cycle – Creating an Executable applet – Applet tag – running the applet – Passing parameters – to applets – Displaying numerical values – Getting input from the user.

Graphics programming: Introduction – The Graphics Class – Lines and Rectangles – circles and ellipse – Drawing Arcs – drawing Polygons.

TEXT BOOK:

1. Balagurusamy E., Programming with JAVA, 3 rd Edition, McGraw – Hill, New Delhi, 2007.

REFERENCE BOOK:

1. Deitel H.M., and Deitel P.J., JAVA – how to program, Pearson Education, New Delhi, 2003.
2. Herbet Schidlt, Java 2 Complete Reference, McGraw –Hill, New Delhi.
3. Patrick Naughton and Herbert Schildt, The Complete reference Java2, 5th Edition, Tata McGraw – Hill, New Delhi, 2005.

Received on 30/3/11

30/3/11

The Madura College (Autonomous), Madurai-11
Department of Computer Science

Blue Print

QN.No:- 4880

Course: B.Sc. Computer Science

Semester: VI

Paper: Programming in JAVA

Time: 3 Hrs

Paper Code: 6D2 (200806).

Max. Marks: 75

Units	Part – A	Part – B	Part – C
Unit I	1	1	1
Unit II	1	2	---
Unit III	1	1	---
Unit IV	1	2	1
Unit V	1	2	1
Total	**5**	**8**	**3**

Part – A: Answer All the Questions — 5 * 3 = 15 marks

Part – B: Answer any 5 out of 8 — 5 * 6 = 30 marks

Part – C: Answer All Questions (Either or Type) — 3 * 10 =30 marks

75 marks

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JL

THE MADURA COLLEGE (Autonomous) MADURAI – 11
(REACCREDITED WITH 'A' GRADE BY NAAC)

CLASS:B.Sc. Computer Science | QN.NO : 4882

TITLE : ACTIVE SERVER PAGE (ASP) | CODE : 6D3 (A)(2009)/10)
Elective - II

TIME : 3 Hours | MAX.MARKS : 75

VI SEMESTER – ELECTIVE II

Unit – I:
Need for active server pages - Automated Development - ASP Objects - ADO Objects - Asp Components - Relational Databases and other Data sources - Developing Online Applications - Client/Server or tiered Applications - Virtual Directories - The Website as Communications Channel - Development Issues - Asp and Web programming Basics Website Coding languages.

Unit – II:
Web-Based Communications- The Request Object- Request Object Collections-Request Object Properties and Methods-Accessing values from Forms or URL's- The Server Variables Collection- The Cookies Collection- The Client Certificate Collection-The Response Object-Response Object Collections-Response Object Properties-Response Object Methods-Writing Data to Browser-Redirecting Browser. The server object-The asp error object-The application and session objects.

Unit – III:
The scripting Object Model: Creating Objects- the Dictionary Object-The Dictionary Object- The scripting file system Object-The Drive Object-The folder Object-The file Object-The Scripting Text stream Object. Active Server Components: Creating Server Components with Asp-The Ad Rotator Component-The Browser Capabilities Component-The Content Linking Component-The Content Rotator Component- More Active Server components.

Unit – IV:
Interactivity and Latency: Optimizing Database interactions-The Connection Object-Advanced Error-Handling Techniques-The command Object- Recordset cursors-Recordset locking-Stored Procedures-The parameters Collection.

Unit – V:
The Record set Object: Recordset Methods and Properties-Record set Navigation and Manipulation Operations-The Stream and Record Objects: Record Object Properties and Methods-Stream Object Properties and Methods.

Text Book:
Dave Mercer – "Asp 3.0 a beginner's Guide" – TMH.

Reference Book:
Nicholus Chasen – "Asp 3.0".

The Madura college (Autonomous-Evening), Madurai-11.

Needs 8/3/12

Dept of Computer Science

Blue-Print

Course: B.Sc. Comp.Science (REGULAR) Semester: VI

Paper: Active Server Page (ASP) (Elective)

Paper code: 6D3(A) (2009-10) Max. Marks: 75

Time: 3 hrs.

QN. NO:- 4882

UNITS	PART-A	PART-B	PART-C
I	1	1	1
II	1	2	---
III	1	2	1
IV	1	2	---
V	1	1	1
TOTAL	5	8	3

Part- A : Answer all questions 5 x 3 = 15 marks

Part-B : Answer any five Questions(out of 8) 5 x 6 = 30 marks

Part-C : Answer ALL Questions 3 x 10 = 30 marks (Either or) type

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75 marks

THE MADURA COLLEGE (Autonomous) MADURAI – 11
(Re-Accredited With 'A' Grade By NAAC)
B.Sc. Computer Science X Information technology

TITLE : DESK TOP PUBLISHING

CODE : 6SD (2008 ON) / On. No. : 4894
6SIT (2008 On).

SKILL BASED ELECTIVE

UNIT I: Photoshop
Introduction – Working Environment - Opening & Saving Files – Getting Started with images – Defining Colors.

UNIT II:
Painting Tools – Editing Tools – Making Selection – Layers – Filters – Color Correction and Techniques.

UNIT III:
Getting Started – Introduction – Uses of Flash – Tools & Toolbar – Properties inspector – Panels – Viewing Options.
Creating Objects – Stage & overlay Objects – Tools – Panel Tool - Line Tool – Pen Tool – Sub Select Tool – Oval Tool – Rectangle Tool – Pencil Tool – Brush Tool – Ink bottle Tool– Paint Bucket Tool – Dropper Tool – Eraser Tool.

UNIT IV: Flash
Editing Object – Selecting with Lasso Tool - Arrow Tool – Grouping Objects – Free Transform Tool – Reshaping Objects – Align Objects – Pixels – Snapping – Stacking order.
Color &Text - Standard Color Palette – Adding Solid Colors – Adding Gradients - Fill Transform Tool – Selecting Colors – Adding, Formatting, Manipulating Text.
Bitmap Sound and Videos – using Bitmaps – Importing Bitmaps – Properties – Bitmap as File – using Sound – importing Sounds – Editing Sounds – Adding Video – Manipulating Videos.

UNIT V:
Frames & Layers – Working with Frames – Adding Frames – Deleting & Copying Frames – Frame Properties – Working with Layers – Inserting Layers – Deleting & Copying Layers – layer mode – Properties – Folders – Mask Layers.
Animation – Animation Basics – Elements of Animation – Animation Scenes – Frame by Frame Animation – Motion Twinning – Motion Guides – Shape Twinning - Animation Text – Distribute Text to Layers – Movie Clips.

TEXT BOOK:
1. Flash MX in Easy Steps – Nick Vandome – Dream Tech Press
2. Photoshop 7 in Easy Steps -Robert Shuffle Botham – Dream Tech Press.

REFERENCE BOOK:
1. Comdex Desktop Publishing Course Kit – Vikas Gupta.
2. Macromedia Flash MX 2004 Fast & Easy Web Development - Lisa Bucki – Premier Press.

Received on 30/3/11

30/3/11

The Madura College (Autonomous), Madurai-11
Department of Computer Science

Blue Print

QN.NO:- 4894.

Course: B.Sc. Computer Science & IT

Semester: VI

Paper: SBE- Desktop Publishing

Time: 3 Hrs

Paper Code: 6SD (2008 on) / 6SIT(08on).

Max. Marks: 75

Units	Part – A	Part – B	Part – C
Unit I	1	2	--
Unit II	1	1	1
Unit III	1	2	1
Unit IV	1	1	1
Unit V	1	2	--
Total	**5**	**8**	**3**

Part – A: Answer All the Questions — 5 * 3 = 15 marks

Part – B: Answer any 5 out of 8 — 5 * 6 = 30 marks

Part – C: Answer All Questions (Either or Type) — 3 * 10 =30 marks

~~(Part C either or b)~~

75 marks

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JR

THE MADURA COLLEGE (Autonomous), MADURAI – 625 011

(AFFILIATED TO MADURAI KAMARAJ UNIVERSITY)
RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U1DMC1**

COURSE TITLE : Programming in C **QN.NO : 9301**

TIME : 3 Hours **MAX.MARKS :75**

UNIT I: Overview of C

History of C – Importance of C – Basic Structure of C Programs – Programming Style – Character Set – C Tokens – Keywords and Identifiers – Constants, Variables and Data Types – Declaration of Variables – Defining Symbolic Constants – Declaring a variable as a constant – overflow and underflow of data – Operators and Expressions: Arithmetic, relational, logical, assignment operators – increment and decrement operators, conditional operators, bitwise operators, special operators – Arithmetic Expressions- Evaluation of Expressions – Precedence of Arithmetic Operators – Type Conversions in Expressions – Operator Precedence and Associativity – Mathematical functions.

UNIT II: Managing I/O Operations

Reading and Writing a Character – Formatted Input, Output – Decision Making & Branching: if statement - if else statement - nesting of if else statements - else if ladder – switch statement – the ?: operator – goto statement – the while statement – do statement – the for statement – jumps in loops.

UNIT III: Arrays

One-Dimensional Arrays – Declaration, Initialization – Two-Dimensional Arrays – Multi-dimensional Arrays – Dynamic Arrays – Initialization. Strings: Declaration, Initialization of string variables – reading and writing strings – string handling functions.

UNIT IV: User-defined functions

Need – multi-function programs – elements of user defined functions – definition – return values and their types – function calls, declaration, category – all types of arguments and return values – nesting of functions – recursion – passing arrays, strings to functions – scope visibility and life time of variables. Structures and Unions: Defining a structure – declaring a structure variable – accessing structure members – initialization – copying and comparing – operation on individual members – array of structures – arrays within structures – structures within structures – structures and functions – unions – size of structures – bit fields.

UNIT V: Pointers

Accessing the address of a variable – declaring, initialization of pointer variables – accessing a variable through its pointer – chain of pointers – pointer increments and scale factors – pointers and character strings – pointers as function arguments – pointers and structures. Files: Defining, opening, closing a file – IO Operations on files – Error handling during IO operations – command line arguments.

Text Book:

1. E.Balagurusamy, Programming in ANSI C, 6th Edition, 2005, Tata McGraw Hill Publishers.

Chapters:

Unit I: 1 (Except 1.3-1.7, 1.10-1.12), 2 (Except 2.9, 2.13), 3 (Except 3.13)
Unit II: 4 – 6
Unit III: 7, 8 (Except 8.5, 8.6, 8.7, 8.9, 8.10)
Unit IV: 9 (Except 9.20), 10
Unit V: 11 (Except 11.8, 11.10, 11.12, 11.14, 11.15, 11.17), 12 (Except 12.6)

Reference Books:

1. Gottfried, Programming with C, Schaum's Outline Series, , 2006,Tata McGraw Hill.
2. Ashok N.Kamthane, Programming with ANSI and Turbo C, 2006, Pearson Education.
3. H. Schildt, C: The Complete Reference, 4th Edition, 2000, TMH Edition.
4. Kanetkar Y., Let us C, 1999, BPB Pub., New Delhi.

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THE MADURA COLLEGE (Autonomous), MADURAI – 625 011

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RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U1DMC2**

COURSE TITLE : Digital Electronics **QN.NO : 9302**

TIME : 3 Hours **MAX.MARKS :75**

Unit – I: Numbers Systems and Discrete Logic

Why Binary– binary to decimal – decimal to binary – octal – hexadecimal – ASCII code – Excess-3 Code – Gray Code – transistor inverter – OR gates – AND gates – Boolean Algebra – NOR gates – NAND gates.

Unit – II: Circuit Analysis and Design

Boolean Law and theorems –sum of product method – K-Map truth tables – Pairs, Quads, Octets – K-Map simplifications – Don't care – product of sum method – product of sum simplifications.

Unit – III: Data Processing and Arithmetic circuits

Multiplexers – De-multiplexers – 1-of- 16- Decoders – BCD-to-Decimal Decoders – 7 segment decoders – Encoders – Exclusive-OR gates – parity generators-checkers – Binary Addition – Binary Subtraction – 2's & 1's complement representation – Complement Arithmetic – Arithmetic building blocks.

Unit – IV: Flip-Flops, Clocks and timers

RS flip-flop – D Flip-Flop – JK Flip-Flop – JK Master Slave Flip-Flop – Schmitt Trigger – 555 Timer Astable – 555 Timer Monostable – 555 Timer Schmitt Trigger.

Unit – V: Shift Registers and Counters

Types of Registers – Serial in serial out – serial in parallel out – parallel in serial out – parallel in parallel out– Ring counter – Ripple Counter – Synchronous Counter – MOD counters – Preset-able counters.

Text Book:

1. Albert Paul Malvino & Donald P. Leach , Digital Principles and Applications , Fourth Edition, 2005, Tata McGraw-Hill Edition

Chapters:

Unit I: 1, 4
Unit II: 2
Unit III: 3.1 to 3.8, 5.1 to 5.7
Unit IV: 8.1, 8.3,8.6,8.7,8.8, 9.3,9.4
Unit V: 10, 11.1,11.3,11.5,11.6

Reference Book:

1. M.Morris Mano, Digital Logic and Computer Design, 2005, PHI

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THE MADURA COLLEGE (Autonomous), MADURAI – 625 011

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RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U1DAC1**

COURSE TITLE : Discrete Mathematics **QN.NO : 9304**

TIME : 3 Hours **MAX.MARKS :75**

UNIT I: The Foundations: Logic and Proofs

Propositional logic – Applications of Propositional logic – Propositional equivalences – (Exclude Propositional satisfiability, Applications of satisfiability, Solving satisfiability problems, and its related problems) – Predicates and Quantifiers – Rules of inference.

UNIT II: Relations

Relations and their properties – Representing relations – Closures of relations – Partial orderings (Theorems statement only; Exclude lexicographic ordering - Exclude Lattices)

UNIT III: Counting

The basic of counting - The pigeonhole principle – Permutation and Combinations – Applications of recurrence relations – Solving recurrence relations – Divide and Conquer algorithms and recurrence relations. (All theorems and Results statement only)

UNIT IV: Graphs

Graphs and Graphs models, (Excluding Biological networks; Tournaments; all its related examples and problems) – Graph terminology and special types of graphs – Representing graphs and Graph isomorphism – Connectivity (paths – connectedness in undirected graphs – paths and isomorphism – counting paths between vertices) – shortest path problems.

UNIT V: Matrices

Introduction – operations – inverse – Rank of a matrix, solution of simultaneous linear equations – Eigen values and Eigen Vectors.

Text Books:

1. Kenneth.H.Rosen, Discrete Mathematics and its applications, Seventh Edition, McGrawHill Publishing company.
2. M.Venkataraman , N.Sridharan and N.Chandrasekaran , Discrete Mathematics , 2009 , The National Publishing company

Chapters:

Unit I - 1: Sections: 1.1, 1.2, 1.3, 1.4, 1.6 → *Textbook 1*

Unit II - 9: Sections: 9.1, 9.3, 9.4, 9.5, 9.6 → *Textbook 1*

Unit III - 6: Sections: 6.1, 6.2, 6.3
8: Sections: 8.1, 8.2, 8.3
(Pages: 527 -529 only)
(Exclude algorithms and relations, on page 507 and its related problems) → *Textbook 1*

Unit IV - 10: Sections: 10.1, 10.2, 10.3, 10.4, 10.6) → *Textbook 1*

Unit V - 6 : Sections :6.1 to 6.5, and 6.7) → *Textbook 2*

Reference Books:

1. Alan Doerr, Levassure – "Applied Discrete Mathematical Structures for Computer Science".
2. Trembly and Manohar – "Discrete Mathematical Structures with Application to Computer Science".

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(AFFILIATED TO MADURAI KAMARAJ UNIVERSITY)
RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U2DMC3**

COURSE TITLE : OOPS With C++ **QN.NO : 9306**

TIME : 3 Hours **MAX.MARKS :75**

UNIT I:

Software Crisis – Software Evolution – Basic Concepts of Object-Oriented Programming – Benefits of OOP – Object-Oriented Languages - Applications of OOP – Application of C++ - Structure of a C++ Program – Tokens – Keywords – Identifiers – Basic Data Types – User-defined Data types – Derived data types – Symbolic constants – Type compatibility – Declaration of variables – Dynamic initialization of variables –Reference variables – Operators in C++ - Manipulators – Type cast operator – Expressions and their types-Implicit conversions – Control structures – The main function – Function prototyping – inline functions – Function overloading.

UNIT II:

Specifying a class – Defining member functions – Making an outside function inline – Nesting of member functions – Private member functions – Array within a class – Memory allocation for objects – Static data members – Static member functions – Array of objects - Objects as function arguments – Friendly functions – Returning objects – Constant member functions – Constructors – Parameterized constructor – Multiple constructors in a class – Constructors with default arguments – Dynamic initialization of objects – Copy constructor – Destructors.

UNIT III:

Defining operator overloading – Overloading unary operators – Overloading binary operators – Overloading binary operators using friend function – Rules for overloading operators - Defining derived classes – Single inheritance – Making a private member inheritable – Multilevel inheritance – Multiple inheritance – Hierarchical inheritance – Hybrid inheritance - Virtual base classes – Constructors in derived class – Member classes: Nesting of classes.

UNIT IV:

Pointer to objects – this pointer – Pointers to derived classes – Virtual functions – Pure virtual functions – C++ Stream classes – Unformatted I/O operations – Managing output with manipulators.

UNIT V:

Classes of file stream operations – Opening and Closing files – Detecting end of file – More about open() function – File modes, File pointers and their manipulation – Sequential input and output operations – Command-line arguments- Templates: class templates and function templates.

Text Book:

1. E. Balagurusamy , Object Oriented Programming with C**++ ,** Sixth Edition**-**2013 , McGraw Hill Education (India) Private Limited , New Delhi.

Chapters:

Unit I – 1 (Except 1.3, 1.4) 2 (Only 2.6)
3 (Except 3.20, 3.21, 3.22), 4

Unit II – 5 (Except 5.18, 5.19), 6 (Except 6.8, 6.9, 6.10)

Unit III – 7, 8

Unit IV – 9, 10

Unit V – 11 (Except 11.8), 12 (Only 12.2, 12.3 and 12.4)

Reference Books:

1. Herbert Schildt, C++ - The Complete Reference, 1998,TMH
2. Paul Deitel, Harvey Deitel, C++ How to Program, Ninth edition (2014) PHI
3. Ashok N.Kamthane, Object Oriented Prog., with ANSI & Turbo C ++, Pearson Education
4. Poornachandra Sarang ,Object-Oriented Programming With C++ , 2nd Edition, PHI

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THE MADURA COLLEGE (Autonomous), MADURAI – 625 011

(AFFILIATED TO MADURAI KAMARAJ UNIVERSITY)
RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U2DMC4**

COURSE TITLE : Computer Organization and Architecture **QN.NO : 9307**

TIME : 3 Hours **MAX.MARKS :75**

UNIT I: Basic Computer Organization

Instruction Codes – Computer Registers – Computer Instructions – Timing and Control – Instruction Cycle – Control Memory – Address Sequencing.

UNIT II: CPU

General Register Organization – Stack Organization – Instruction Formats – Addressing Modes – Program control.

UNIT III: **Computer Arithmetic**

Hardware Implementation and Algorithm for Addition, Subtraction, Multiplication, Division – Booth Multiplication Algorithm – Floating Point Arithmetic.

UNIT IV: I/O and Memory Organization

I/O Interface – Asynchronous Data Transfer – Modes of I/O Transfer – Priority Interrupt – Direct Memory Access - Memory Hierarchy – Main Memory – Auxiliary Memory – Associative Memory – Cache Memory – Virtual Memory.

UNIT V : Advanced Processing

RISC, CISC Characteristics - Parallel Processing – Pipe Lining – vector processing – array processors – Multi processors – Interconnections structures.

Text Book:

M. Morris Mano, Computer System Architecture, Third Edition , 2003 , Prentice Hall of India.

Chapters:

Unit I: 5.1 to 5.5, 7.1 to 7.2,

Unit II: 8.1 to 8.5, 8.7,

Unit III: 10.1 to 10.5

Unit IV: 11.2 to 11.6, 12.1 to 12.6 &

Unit V: 8.8, 9.1, 9.2, 9.6, 9.7, 13.1, 13.2

Reference Books:

1. A. S. Tanenbaum, Structured Computer Organization, PHI.

2. M.Morris Mano , Digital Logic & Computer Design, 2006,PHI.

3. Alan B.Marcovitz, Introduction to Logic design, 2nd edition,2005, TMH.

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THE MADURA COLLEGE (Autonomous), MADURAI – 625 011

(AFFILIATED TO MADURAI KAMARAJ UNIVERSITY)

RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U2DAC2**

COURSE TITLE : Microprocessor 8086 / 8088 and its Applications **QN.NO : 9309**

TIME : 3 Hours **MAX.MARKS :75**

UNIT I: Software Architecture

Internal architecture – Software model- data types – segment registers- data registers- pointers and index Registers- status registers – generating a memory address – addressing mode.

UNIT II: 8086/8088-Microprocessor Programming

The instruction set – data transfer instructions- arithmetic instructions – logic Instructions- shift instructions- rotate instructions- compare instructions- jump Instructions – the loop and loop handling instructions – string and string handling Instructions.

UNIT III: Memory Interfaces

Minimum –mode and maximum-mode systems minimum system mode interface- system Clock – bus cycle – control signals – read and write bus cycles – memory interface Circuits.

UNIT IV: I/o Interface of the 8088/8086 Microprocessors

Minimum-mode interface- maximum-mode interface- I/O data transfers- I/O instructions- Eight byte wide output ports with isolated I/O – eight byte wide input port using isolated I/O.

UNIT V: Interrupt Interface of the 8088/8086

Types of interrupts – interrupt instructions- enabling/disabling of interrupt – external Hardware interrupt interface – block diagram of the 8249a (interrupt controller) – Software interrupts.

Text Book:

1. Walter A.Triebel, Avtar Sing - The 8088 and 8086 microprocessors (programming, interfacing, software, hardware and Applications) – Edition – 1995- Prentice Hall Of India.

Reference Books:

1. Douglas v.hall – Microprocessor and interfacing– McGraw-Hill.
2. Bary Brey – Introduction to Microprocessor and Microcomputer- PHI.

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THE MADURA COLLEGE (Autonomous), MADURAI – 625 011

(AFFILIATED TO MADURAI KAMARAJ UNIVERSITY)

RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U3DMC5**

COURSE TITLE : Data Structures and Computer Algorithms **QN.NO : 9311**

TIME : 3 Hours **MAX.MARKS :75**

Objectives:

- To impart the knowledge of computer programming with algorithmic approach.
- Learning the concept of data structures and its operations.

UNIT I : Stacks and Queues

The Stack & Queue abstract data type– A Mazing Problem – Evaluation of Expressions– Multiple Stacks and Queues. **Linked Lists:** Singly Linked Lists –Circular list- Linked Stacks and Queues – Polynomials- Doubly Linked List.

UNIT II : Trees

Basic Terminology – Binary Trees- Properties - Representations - Binary Tree Traversal – Additional Binary tree operations-Threaded Binary Trees.

UNIT III : Graphs

Definitions and Representations – Elementary Graph operations-Minimum Cost Spanning Trees – Shortest Path and Transitive Closure – Activity Networks.

UNIT IV: Divide and Conquer

The General Method – Binary Search – Finding the Maximum and Minimum – Merge Sort – Quick Sort – Selection Sort.

UNIT V:The Greedy Method

The General Method – Knapsack problem-Tree vertex Splitting-job sequencing with deadlines- Minimum cost spanning trees-optimal storage on tapes-optimal merge patterns-single source shortest path.

Text Books:

1. Ellis Horowitz , Sartaj Sahni & Dinesh Mehta – "Fundamentals of Data structures in C++" - 2nd Edition - Universities Press 2007.
2. Ellis Horowitz , Sartaj Sahni & Sanguthevar Rajasekaran- "Fundamentals Of Computer Algorithms"- 2nd Edition- Universities Press 2007.

Reference Books:

1. Yedidyah langsam, Moshe J.Augenstein and Aaron- "Data structures using C "– PHI.
2. Seymour Lipschutz – "Data Structures" - TataMcGrawhill – Year 2006.
3. Jean Paul Tremblay and Paul G Sorenson – "An Introduction to Data structure with Application" - THM, II Edition – 1991.

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THE MADURA COLLEGE (Autonomous), MADURAI – 625 011

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RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U3DMC6**

COURSE TITLE : Visual Programming **QN.NO : 9312**
TIME : 3 Hours **MAX.MARKS :75**

Objectives:

- To impart the knowledge of computer programming with GUI approach.
- Learning the concept and controls of a front-end tool.

UNIT I : Introduction

Overview of the IDE - Managing forms in Visual Basic - The Visual Basic Language: Declaring Constants, Variables – Selecting variable types-Converting between data types - setting variable scope- verifying data types – declaring arrays & Dynamic arrays – Declaring Subroutines – Declaring functions – Handling strings – Converting strings to numbers and back again – Handling operators & operator precedence – Using if-else statements- Using select case –Looping – Handling higher math- Handling Dates and Times.

UNIT II : Controls

Text Boxes and Rich text Boxes- command buttons – checkboxes & option buttons – list boxes and combo boxes – picture boxes and image controls – The timer control – The frame control – the label control – the shape control.

UNIT III: Menus & Toolbars

Visual Basic Menus: adding a menu to a form – modifying & deleting menu items – creating sub menus – using Visual Basic predefined menus-Handling MDI forms & MDI child menus-creating & displaying popup menus – Adding & deleting menu items at runtime-– Toolbars, status bars, progress bars and coolbars.

UNIT IV : Files & Data Base Concepts

File handling and File Controls – Using DAO,RDO and ADO : Creating and managing databases with the visual data manager – creating a table - Adding a Data control – opening a database with the data control, Remote data control, ADO data control – connecting a databases using controls- working with database objects in code.

UNIT V : Active-x controls & Documents

Creating an Active-x control – Designing Active-x control- Adding controls to an Active-x control- Registering an Active-x control – Creating an Active-x Document – Active-x Document Dll vs EXEs – Testing an Active-x Document.

Text Book:

Steven Holzner – "Visual Basic 6 Programming Black Book" - 16th Reprint Edition - Dreamtech Press Publications

Reference Books:

1. Petroutsos.E – " Mastering Visual Basic 6" – Fifth edition, BPB Publications
2. Jerke .N - " Visual Basic 6.0 – The Complete reference" – Nineteenth Reprint 2004, Tata-McGraw Hill Publishing.
3. Gary Cornell- "VB 6 from the Ground up" – Second Reprint 1999-Tata-McGraw Hill Private Ltd.

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RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U3DMC7**

COURSE TITLE : Operating Systems **QN.NO : 9314**

TIME : 3 Hours **MAX.MARKS :75**

Objectives:

- To impart the knowledge of system software.
- Learning the concept and operations of operating systems.

Unit - I: Introduction

Operating system basics – Computer System organization – Computer system architecture – operating system structure – Operating system operations – Distributed systems – Open source operating systems. **System structures**: Operating system services – User operating system interface – System calls – Operating system structure.

Unit - II: Process Management

Process concepts – Process scheduling – Inter-process communication. **Multithreaded programming:** Overview – Multithreading models. **Process Scheduling:** Basic concepts – Scheduling criteria – Scheduling algorithms.

Unit - III: Memory Management

Memory management strategies – Background – Swapping – Contiguous memory allocation – Paging – Structure of the page table – Segmentation. **Virtual memory management:** Background – Demand paging – Copy-on-write – Page replacement – Thrashing.

Unit - IV: Storage Management

File system: File concepts – Access methods – File sharing – Protection. **Secondary storage structures:** Overview of Mass-storage structure – Disk structure – Disk scheduling – Disk management - RAID structure. **I/O systems:** Overview – I/O hardware.

Unit - V: Process Coordination **(12 hours)**

Synchronization: Background – The Critical-Section problem – Semaphores. **Deadlocks:** System model – Deadlock characterization – Methods for handling deadlocks – Deadlock prevention – Deadlock avoidance.

Chapters:

Unit – I : 1.1 -1.5, 1.10, 1.13, 2.1-2.3, 2.7.

Unit – II : 3.1, 3.2, 3.4, 4.1, 4.2, 5.1-5.3.

Unit – III : 8.1-8.6, 9.1-9.4, 9.6.

Unit – IV : 10.1, 10.2, 10.5, 10.6, 12.1, 12.2, 12.4, 12.5, 12.7, 13.1, 13.2.

Unit – V : 6.1, 6.2, 6.5, 7.1-7.5.

Text Book:

Abraham Silberschatz, Peter B.Galvin, Greg Gagne - "Operating System Concepts " – Wiley Student Edition – 8th Edition - 2010.

Reference Books:

1. D.M.Damdhere - "Operating systems – A concept based approach" – 2nd Edition – TMH.
2. William Stalings – " Operating system, Internals and design principles" – 2008 – PHI.

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PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U3DAC3**

COURSE TITLE : Financial Accounting **QN.NO : 9315**

TIME : 3 Hours **MAX.MARKS :75**

Objectives:

- To impart the knowledge of computerized financial management.
- Learning the concepts of accounts and accounting software.

Unit – I :Introduction to Accounting

Principles of Book keeping – Day Books and Ledgers – Cash Book – Petty Cash Book – Trial Balance.

Unit – II :Preparation of Final Accounts

Preparation of Trading and Profit & Loss Account – Preparation of Balance Sheet (Simple Problems only)

Unit – III :Ratio Analysis

Meaning – Importance – Types - Liquidity Ratios - Solvency Ratio - Activity Ratios. (Simple problems only)

Unit – IV :Preparation of Accounts through Accounting Software

Creation of Company – Creation of Group – Creation of Ledger.

Unit – V: Voucher Creation and Display of Final Accounts in Accounting Software

Creation of Vouchers - Types of Voucher – Alteration of Voucher – Deletion of Voucher .

Preparation of Final Accounts through Tally – Trial Balance – Profit and Loss Account – Balance Sheet at the Gateway of Tally - Methods of showing Balance sheet.

Text Book:

1. Dr. S.A.N Shazuli Ibrahim, Financial Accounting – I, PASS Publications, Madurai.
2. Dr. P. Rizwan Ahmed, Tally ERP 9, Margham Publications, Chennai.

Books for Reference

1. S.P. Jain & K.L Narang, ***"Advanced Accountancy"*** Vol-I, Nineteenth Edition, 2015, Kalyani Publishers, Mumbai.
2. R.L. Gupta & M. Radhaswamy, ***"Advanced Accountancy"*** Vol-I, 2015, Sultan Chand & Sons, New Delhi.
3. Nellai Kannan C, ***"Tally"***, 2004, Nels Publications.
4. Shraddha Singh & Navneet Mehra, ***"Tally.ERP 9- Power of Simplicity"***, 2014, ITC Publication.

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PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U3DAC4**

COURSE TITLE : Statistics and Numerical Methods **QN.NO : 9316**

TIME : 3 Hours **MAX.MARKS :75**

Objectives:

- To impart the knowledge of computer arithmetic.
- Learning various statistical and numerical methods.

Unit – I: Computer Arithmetic

Floating point representation of numbers - Arithmetic operations with Normalized floating point numbers - Consequences of normalized floating point representations of numbers - Errors in numbers - Beginning an iterative method - The method of successive bisection - The methods of false position - Newton Rapson method - The Secant method - The method of successive approximation.

Unit – II: Iterative Methods

The gauss elimination method - Pivoting - Ill conditioned Equations-Refinement of solution obtained by Gaussian Elimination - Gauss Seidal iterative method & algorithm - Comparison of direct and iterative methods.

Unit – III: Interpolation

Forward difference method - Backward difference method - Central Difference method - Lagrange interpolation method - Divided difference method - Linear regression - Polynomial regression - Fitting exponential and trigonometric functions.

Unit – IV: Integration & Differentiation

Formulae for numerical differentiation - Numerical Integration-Simpson's 1/3 rule - Simpson's 3/8 rule - Errors in integration Formulae - Comparison of integration formulae.

Unit – V: Probability & Distribution

Basic probability - Random variables - Discrete random variables - Continuous random variables - Selecting the appropriate Distribution - Polynomial Regression - Simple linear regression.

Text books:

1. V.Rajaraman - "Computer Oriented Numerical Methods"- III Ed.,-PHI.
2. Billy Gillett - "Introduction To Operations Research"- TMH 1979.

Reference Books:

1. Sharma & Goyal - "Mathematical Statistics".
2. M.K. Venkatraman - "Numerical Methods for Engineering".

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RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: NME Computer Science **COURSE CODE : 17U3DNM1 / 1SD (Upto 2016)**

COURSE TITLE : Computer Fundamentals **QN.NO : 9318**

TIME : 3 Hours **MAX.MARKS :75**

- To impart the basic knowledge of a computer.
- To explore the components and functions of computer.

Unit - I: Characteristics of Computers

Block Diagram - Problem Solving Using Computers - Classification of Computers - Computing Models.

Unit - II: Internal Representation

Representation of Characters, Integers & Fractions in Computers - Number Conversions Hexadecimal Binary – Octal - Decimal - Programming Languages.

Unit - III: Components

Functional Components of Computers - Input - Output Units - Memory – CPU.

Text Book:

V. Raja Raman - "Fundamentals of Computers" - II Edition – PHI – 1998.

Reference Books:

1. Basantra – "Computers Today" - Galgotia Publications.

2. Roger-Hunt – "Computers &Commonsense " – BPB pub.

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PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U4DMC8**

COURSE TITLE : Computer Networks **QN.NO : 9319**

TIME : 3 Hours **MAX.MARKS :75**

Objectives:

- To impart the knowledge of computer networks.
- Learning the concept and the various layers of a computer network design.

UNIT-I : Introduction

Introduction: Uses of Computer Networks- Network Hardware-Network Software-Reference Models. Example Networks: The Internet-Third-Generation Mobile Phone Networks-Wireless LANs-RFID and Sensor Networks - Network Standardization.

UNIT –II: The Physical Layer

The Theoretical basis for Data Communication-Guided Transmission Media-Wireless Transmission – Communication Satellites-Digital Modulation and Multiplexing-The Public Switched Telephone Network-The Mobile Telephone System.

UNIT- III: Data Link Layer

Data Link Layer Design Issues: Error Detection and Correction-Elementary of Data Link Protocols- Sliding Window Protocols. The Medium Access Control Sublayer: The Channel Allocation Problem- Multiple Access Protocols-Bluetooth-Data Link Layer Switching.

UNIT- IV: The Network Layer

Network Layer Design Issues-Routing Algorithms: The Optimality Principle Shortest Path Algorithm-Flooding-Distance Vector Routing-Link State Routing-Hierarchical Routing-Broadcast Routing-Multicast Routing-Congestion Control Algorithms-Quality of Service-Internetworking-The Network Layer in the Internet.

UNIT- V: The Transport Layer

The Transport Service-Elements of Transport Protocols- The Internet Transport Protocols: User Datagram Protocol (UDP)-Transmission Control Protocol (TCP). The Application Layer: The Domain Name System (DNS)-Electronic mail. The World Wide Web. Network Security: Cryptography-Symmetric Key Algorithms ,Public-Key Algorithms-Digital Signatures.

TEXT BOOK

Tanenbaum and Wetherall, "Computer Networks", Fifth Edition, Prentice Hall of India, New Delhi, 2010.

REFERENCE BOOKS

1. Stallings, W., "Data and Computer Communications", Ninth Edition, Prentice Hall of India, New Delhi, 2010.
2. Forouzan, A.B., "Data Communication and Networking", Fourth Edition, Tata McGraw Hill Publishing Company Ltd., New Delhi, 2005.
3. Peterson.,L.L. and Davie, S.B., " Computer Networks", Fifth Edition, Morgan Kaufmann Publishers, San Fransisco, 2011.
4. Douglas, E.C., "Computer Networking and Internets", Second Edition, Prentice Hall of India, New Delhi, 1999.

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PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U4DMC9**

COURSE TITLE : Linux Programming **QN.NO : 9320**

TIME : 3 Hours **MAX.MARKS :75**

Objectives:

- To impart the knowledge of open source software.
- Learning the concept and processes of Linux operating system.

Unit –I: Introduction to Linux

Getting started: An introduction to UNIX, Linux and GNU - Programming Linux.
Shell programming: Introduction - Pipes and redirection - The shell as a Programming language-Shell syntax - Going Graphical - Dialog utility - Putting it altogether.

Unit-II: Working With Files

Linux file structure-System calls and device drivers - Library functions - low level file access -The Standard I/O library - Formatted input and output - File and directory maintenance - Scanning Directories – Errors - The /Proc file systems - Advanced Topics: fcntl and mmap.

Unit-III: Processes and Signals

Introduction to process - Process structure - Starting new processes - Signals.

Unit-IV: Inter Process Communication

Pipes - Process pipes - Sending output to 'popen' - The pipe call - Parent and child processes -Named pipes: FIFOs - The CD database applications. **Semaphores, Shared memory and Message queues :** Semaphores - Shared memory - Message queues – IPC Status commands.

Unit-V: Sockets

Introduction - Socket connections - Network information - Multiple clients - Datagrams.

Chapters:

Unit – I : 1 and 2.
Unit – II : 3
Unit – III : 11.
Unit – IV : 13 and 14.
Unit – V : 14 and 15

Text Book:

Neil Matthew,Richard Stones-" Beginning Linux Programming",Fourth Edition,2008,Wiley Publishing Inc.

Reference Book:

Linux system programming- Robert Love,O'Reily,SPD.

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PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U4DMC10**

COURSE TITLE : Programming in Java **QN.NO : 9321**

TIME : 3 Hours **MAX.MARKS :75**

Objectives:

- To impart the knowledge of OOPs approach in computer programming.
- Learning the concept and controls of Java language.

Unit – I: Introduction

Java history – Java Features – Simple Java Programs – Class declaration – Tokens – Comments – Statements – JVM – Implementing Java programs – Command line arguments – Constants, Variables and Data types – Operators and Expressions – Decision making statements – Simple if statements – If-else statements – Nesting if-else statements – else-if ladder – switch statement – ternary operator – Looping – While, do-while, for loop statements.

Unit – II: Class & objects

Creation of class – Objects and methods – Accessing class members – Constructors – Method Overloading – Overriding – Static members – Inheritance – Interface.

Unit – III: Arrays

Arrays – Types – Length – Strings – Strings Manipulations – Vector – Vector classes – Wrapper class – Enumerated types – Java API Packages – System package – Creating and accessing user defined and system package – Managing errors and exceptions.

Unit – IV: Input / Output

Managing I/O files in Java – Stream I/O – Byte stream class – Character stream class – creation of files – File handling in Java – Multi threaded programming – Multithreads in Java – Thread class – Lifecycle of thread – Thread exceptions – Priority.

Unit – V: Applets & Graphics Programming

Applet programming – Introduction – Preparing to write Applets – Building applet code – Applet life cycle – Creating an executable applet – Applet tag – Running the applet – Passing parameters – Displaying numerical values - Getting input from the user – Graphics programming – Introduction – the Graphics class – Lines and rectangles – Circles and ellipse – Drawing arcs – Drawing polygons.

Text Book:

E. Balagurusamy – "Programming with Java" – V Edition., - MGH.

Reference Books:

1. Deital & Deital – "Java How to Program" – Pearson education-2003.
2. Herbert Schildt - "Java A Beginner's Guide" - IV Ed., TMH.
3. Patrick Naughton, Herbert Schildt – "Java Complete Reference2 – V Ed., - TMH.

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PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U4DMC11**

COURSE TITLE : Computer Security **QN.NO : 9322**

TIME : 3 Hours **MAX.MARKS :75**

Objectives:

- To impart the knowledge of security aspects of computing system.
- Learning the various methods of securing and administering computers and computer networks.

Unit – I: Introduction

Security problem in computing – Characteristics of computer in intrusion – Basic concepts – Threats, Vulnerabilities – Controls – Confidentiality – Integrity – Availability – Methods of Defense.

Unit – II: Encryption

Basic Encryption and Decryption – Substitution Cipher – Caesar Cipher – other substitutions – One time pad – Transposition – Columnar transposition – Symmetric and Asymmetric encryption Systems – Stream and block ciphers – Data encryption standard – Rivest Shamir Adel man (RSA) Encryption.

Unit – III: Methods

Security involving Programs and OS – Flaws – Malicious code – Virus, Worm – Program flaws – Buffer overflows- Incomplete mediation – Time of check and rime of use errors – Program development controls –memory file protection requirements & techniques – User Authentication. – Trusted OS – Design principles and evaluation.

Unit – IV: Network security

Database and network security – database integrity – database secrecy – interference control – Multilevel databases – Network threats – Introduction to network security techniques.

Unit – V: Administration

Administering security – Security planning – Risk analysis – Physical security – Legal aspects of security.

Text Book:

Charles P.Pfleeger, Shari Lawrence Pfleeger – "Security in Computing" – III Ed., - Pearson education – 2003.

Reference Book:

1. Atul Kanate – "Cryptography and Network Security, Principle and Practices – Prentice Hall of India – 1998.

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PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U4DAC5**

COURSE TITLE : Resource Management Technique **QN.NO : 9323**

TIME : 3 Hours **MAX.MARKS :75**

Objectives:

- To impart the knowledge of resource management technique.
- Learning the various problems and methods of operations research.

Unit-I: Linear Programming Problem – I

Mathematical Formulation of the problem – Graphical Solution – Introduction- Graphical Solution Method – Some exceptional cases- General L.P.P. – Canonical and Standard forms of L.P.P.

Unit-II: Linear Programming Problem – II

Simplex Method – Introduction – Fundamental Properties of Solutions – The computational procedure – Use of Artificial Variable.

Unit-III: Transportation and Assignment problem

Transportation Problem – Introduction – General Transportation Problem – The transportation table – Solution of a Transportation problem – Finding an initial basic feasible solution – Test for optimality – Transportation Algorithm (MODI method). Assignment Problem – Introduction – Mathematical formulation of the problem – The assignment method – Special cases in assignment problems – A typical assignment problem – The traveling salesman problem.

Unit-IV: Game Theory

Introduction – Two-person zero-sum games – Some basic terms – The Maxmin-Minimax principle – Games without Saddle points-mixed strategies – Graphic solution of 2 x n and m x 2 games – Dominance property.

Unit-V Network Scheduling

Introduction – Network and basic components – Logical sequencing – Rules of network Construction – Critical path analysis – Distinction between PERT and CPM.

Chapters:

Unit – I : 2.1 – 2.3, 3.1-3.5
Unit – II : 4.1-4.4
Unit – III: 10.1, 10.2, 10.5, 10.8-10.10, 10.13, 11.1-11.5, 11.7.
Unit – IV : 7.1-7.7.
Unit – V : 25.1-25.4, 25.6, 25.8.

Text Book:

Kanti Swarup, P.K. Gupta, Man Mohan – "Operations Research" – 18th edition, Sultan Chand & Sons Educational Publishers, New Delhi.

Reference Books:

1. Hamdy A. Taha – "Operations Research an Introduction" – PHI, 8th edition.
2. S.D. Sharma – "Operations Research" – 12th edition, Kedar Nath Ram Nath & Co Publishers, Meerut.

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RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: UG NME- Computer Science **COURSE CODE : 17U4DNM2**

COURSE TITLE : Introduction to Internet **QN.NO : 9326**

TIME : 3 Hours **MAX.MARKS :75**

Objectives:

- To impart the knowledge of basics of Internet.
- Learning the various aspects of Internet design and functionalities.

Unit I: Introduction to Internet

Internet- Growth of Internet and Arpanet - Owners of the Internet -Anatomy of Internet – History of WWW - Basic Internet Terminologies – Net etiquette - Internet Applications - Commerce on the Internet – Governance on the Internet - Impact of Internet on Society.

UNIT II: Browsers and Search engines

Browsers – browser- Introduction – Parts of a browser window -Running a browser - working with a Browser. Search engines: What is search engine? - Types of search engines - Search and Meta search engines.

Unit III: E-mail

E-mail - E-mail Networks and Servers - E-mail Protocols - Structure of E-mail - Attachments – E-mail Clients - E-mail Clients - web based E-mail-Address book – Signature File.

UNIT IV: HTML Programming Basics

Introduction to HTML – HTML browsers - Different versions of HTML-HTML tags - Document overview - Header elements - Section headings –

UNIT V: HTML Programming Basics

Block headings - Lists-Inline elements – Images - working with Tables, Forms, Frames.

Text book:

Internet Technology and Web design, Ramesh Bangia, Firewall Media, (An imprint of Lakshmi Publications Pvt. Ltd.), Third Edition, 2011.

Unit 1: Chapter 1.2
Unit 2: Chapter 3 & Chapter 4
Unit 3: Chapter 5(5.6), Chapter 8(8.11 &8.13)
Unit 4: Chapter 5 (5.1) & Chapter 6
Unit 5: Chapter 9

Reference Books:

1.The Internet Book, Douglas E. Comer, Fourth Edition, PHI Learning Pvt. ltd. , New Delhi, 2009.

2.Using the Internet the Easy Way, Young Kai Seng, Minerva Publications, First Edition, 2000.

3.Fundamentals of Information Technology By Alexis Leon and Mathews Leon, Vikas Publishing House Pvt. Ltd., Revised Edition.

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RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U5DMC12**

COURSE TITLE : RDBMS **QN.NO : 9327**

TIME : 3 Hours **MAX.MARKS :75**

Objectives

- To impart the knowledge of Database concepts.
- Learning the programming logic and operations of SQL & PL/SQL

Unit – I:
Introduction
Database system applications – Purpose of database system – View of data – Database Languages – Relational databases – Transaction management – Database architecture.

Unit – II:
Relational Databases
Structure of relational databases – Database schema – Keys – Schema diagrams. **Formal Relational Query Languages:** Fundamental operations – Formal definition of the Relational algebra – Additional Relational algebra operations.

Unit – III:
Introduction to SQL
Overview of the SQL query language – SQL Data definition – Basic structure of SQL queries – Additional basic operations - Set operations – Null values – Aggregate functions –Nested sub queries – Modification of the database. **Intermediate SQL:** Join expressions – Views - Transactions.

Unit – IV:
Advanced SQL & E-R Model
Functions and procedures – Triggers. **Database design and ER model**: – Overview of the design process – The ER model – constraints – ER diagrams - Extended ER features.

Unit – V:
Relational Database Design
Features of good relational designs – Atomic domains and First normal form – Decomposition using functional dependencies – Functional dependency theory. **Storage and File Structure:** RAID – File organization – Organization of records in files – Data dictionary storage.

Text Book:
"Database System Concepts" - Abraham Silberschatz, Henry F. Korth, S. Sudharshan - VI Ed., - Mc Graw Hill International Edition 2011.

Chapters:
Unit – I **:** 1.1, 1.2, 1.3, 1.4, 1.5, 1.8, 1.9.
Unit – II **:** 2.1, 2.2, 2.3, 2.4, 6.1.1, 6.1.2, 6.1.3.
Unit – III **:** 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 4.1, 4.2, 4.3.
Unit – IV **:** 5.2, 5.3, 7.1, 7.2, 7.3, 7.5, 7.8.
Unit – V **:** 8.1, 8.2, 8.3, 8.4, 10.3, 10.5, 10.6, 10.7.

Reference Books:

1. "Database Systems" - Thomas Connolly - Addison Wesley - New Print 2000.
2. "Database Management Systems" - Ragu Rama Krishnan, Johannes Gehrke - III Ed. – Mc Graw Hill Edition, New Delhi.

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RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U5DMC13**

COURSE TITLE : Software Engineering **QN.NO : 9328**
TIME : 3 Hours **MAX.MARKS :75**

Objectives:

- To impart the knowledge of Software Product development with an engineering approach.
- To teach software development methodologies, tools and techniques.

Unit – I Introduction

Definitions - Some Size factors - Quality and Productivity factors - Managerial issues.

Unit – II Planning a Software Project

Defining the problem - Developing a solution strategy - Planning the development process - Planning an organizational structure – Other Planning Activities.

Unit – III Software Cost Estimation

Software cost factors - Software cost estimation techniques - Staffing level estimation - Software requirements definition – The software requirements specification – Formal Specification techniques.

Unit – IV Software Design

Fundamental design concepts - Modules and modularization criteria - Design notations - Design techniques - Real-time and distributed system design – Test plans - Milestones, walkthroughs & inspections.

UNIT – V Software Maintenance

Enhancing Maintainability during development - Managerial aspects of software maintenance - Configuration management - Source - code metrics - Other Maintenance tools and Techniques.

Text Book:

"Software Engineering concepts" – Richard Fairley – MGH.

Chapters:

Unit – I : 1.1,1.2,1.3, 1.4
Unit – II : 2.1 ,2.2,2.3,2.4,2.5
Unit – III : 3.1 ,3.2,3.3, 4.1, 4.2
Unit – IV : 5.1,5.2,5.3,5.4, 5.6,5.7,5.8
Unit – V : 9.1,9.2,9.3,9.4,9.5

Reference Books:

1. "Software engineering design" - H.C Shooman – MGH - 1983.
2. "Software Engineering" – Roger Pressman – MGH - IV Ed.,1998.

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RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U5DMC14**

COURSE TITLE : Web Designing **QN.NO : 9329**

TIME : 3 Hours **MAX.MARKS :75**

Objectives:

- To impart knowledge about the web development and their applications.
- To understand the basic software tools, methods of web designing.

Unit – I

Introduction

What is Internet-History of Internet- Internet Services and Accessibility-Uses of the Internet-Protocols-Web concepts-The client/server model of the web-Retrieving data from the web. **Internet Protocols:** Introduction – Internet protocols-transmission control protocols-User Datagram protocols - Host Names.

Unit –II

HTML

Introduction-SGML-DTD-DTD Elements- attributes-outline of an HTML document-Head section-Body section - Headers – Paragraphs – Text formatting – Linking – Internal linking – Embedding images – Lists – Tables – Frames – Other Special tags - HTML forms.

Unit- III

JavaScript

Introduction- need of a scripting language - language elements - Identifiers – Expressions – JavaScript keywords – Operators – Statements – functions.

Unit - IV

Objects of JavaScript

The Window object – The Document object – Forms object – Text boxes and text areas – Buttons , Radio buttons and Check boxes – Select object - other objects - The Date object – The Math Object – The String Object –Regular Expressions– Arrays – worked examples.

Unit - V

Dynamic HTML

Introduction- cascading style sheets - Coding CSS – Properties of tags – Property values – Other style properties – Inline Style Sheets –Embedded Style Sheets – External Style sheets – Grouping – Inheritance – Class as Selector – ID as Selector – Contextual Selectors – Pseudo Classes and Pseudo-elements – Positioning – Backgrounds – Element Dimensions.

Text Book

"Web Technology A Developer's Perspective " - N.P.Gopalan, J. Akilandeswari - Second Edition - PHI publishers.

Chapters

Unit – I **:** 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 2.1, 2.2, 2.3
Unit – II **:** 4
Unit – III **:** 5.1, 5.2
Unit – IV **:** 5.3, 5.4, 5.5
Unit – V **:** 7.1, 7.2

Reference Books:

1. “Web Technology and Design” - C. Xavier - New Age International Publishers.
2. “Web Technologies TCP/IP Architecture and Java Programming” - Achyut S. Godbole &
3. Atul Kahate- Second Edition -Tata McGraw Hill
4. “Web Technology “ - S. Padma Priya - SCITECH Publications (India)Pvt. Ltd

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RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U5DMC15**

COURSE TITLE : Dot Net Technologies **QN.NO : 9330**

TIME : 3 Hours **MAX.MARKS :75**

Objectives:

- To understand the concept of GUI Design tools, also to make them aware of controls in VB.NET
- Code programs and develop interface using VB.NET.

Unit – I

Introduction to VB.NET

Getting started in Visual Basic to .Net –Starting Visual Basic Dot Net-Creating and Running very first application**-IDE:** What is IDE-Using the Auto hide facility–Using the Properties windows– Setting the properties of forms and controls–Using the solution explorer-Writing an event procedure-The Standard Toolbar. Setting properties using the Properties Window: Classification of Properties.

Unit - II

Control structure & Looping

Variables and Data types**-**Text box control–Radio button control-Programming Statements :IF…Then ,IF…THEN…END IF, IF…THEN…ELSE…END IF–The MsgBox() function-The InputBox() function-List box control-Programming Statement: Select Case–Check box control-Iteration Statements-Do While Loop- Do Until Loop- Do Loop Until-For Next-Arrays

Unit - III

Menus and Dialog Boxes

Basic elements of menus-Generic procedure of creating menus-Creating a simple menu application. Structured Programming:What is Structured Programming-Events, Subroutines & Functions-Scope of variables-Scope of procedures-Elementary and composite data types.

Unit - IV

Object-Oriented programming

What is OOPS-Implementing OOPS-Inheritance overriding-Collections. Working with files: Introduction to files-Classification of files-Handling files and folders using functions-File processing using streams-Advanced Techniques in Visual Basic Dot Net:Single document interface and multiple document interface.

Unit – V

Data Access with ADO.Net

What are databases-Connections, Data Adapters and Datasets-Accessing Data with Server Explorer-Accessing Data with Data Adapters and Datasets-Working with ADO.Net-Overview of ADO.Net Objects.

Text Book:

1. "**Visual Basic Dot Net** " -Shirish Chavan - Pearson Edition- Fourth Edition.
2. "**Visual Basic Dot Net Black Book**" - Steven Holzner –Wiley Press.

Chapters:

Unit – I: 1.5, 1.6, 2.2, 2.5, 2.14-2.16, 2.18, 2.22, and 3.1.
Unit – II : 5.1,5.11,5.12,5.13,5.14,6.3,6.7,6.9,6.10,7.2,7.3,7.5,7.6,7.8,7.9,7.11. } Textbook 1
Unit – III: 9.1, 9.2, 9.3, 10.1, 10.2, 10.3, 10.4, 10.7.
Unit – IV: 11.1, 11.2, 13.1, 13.2, 13.4, 13.10, 14.1.
Unit – V: 21 →Textbook 2

Reference Books:

1. "Visual Basic Dot Net-A Beginner's guide" - Jeffery Kent -Tata McGraw Hill- First Edition 2002.
2. "Visual Basic Dot Net Step by Step" - Michael Halvorson –Prentice Hall of India Pvt-, First Edition,2002.
3. "The Complete reference Visual Basic Dot Net" - Jeffrey R.Sharpiro-Tata McGraw Hill- Sixteenth Reprint,2010
4. "Visual Basic Dot Net" - John Smiley-Tata McGraw Hill, First Edition 2002.

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RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U5DME3**

COURSE TITLE : Elective – I C. Multimedia Technology **QN.NO : 9333**

TIME : 3 Hours **MAX.MARKS :75**

Objectives:

- To impart the knowledge of Multimedia technology and its applications.
- Learning the concepts of various Multimedia components and tools.

Unit – I

Introduction to Multimedia

Definitions – Multimedia applications – Delivering Multimedia - CD-ROM, DVD and Flash drives – The broadband Internet – Making Multimedia: The stages of a Multimedia project – The Intangibles - Multimedia skills.

Unit – II

Making Multimedia

Hardware – Software - Authoring systems - Making Instant Multimedia – Types of authoring tools – Objects – Choosing an authoring tool.

Unit - III

Text & Sound

Text:- The power of meaning – About Fonts and Faces – Using Text in Multimedia – Computers and Text – Hypermedia and Hypertext – Sound: - The power of sound – Digital Audio - MIDI audio – MIDI Vs Digital Audio – Multimedia System sounds - Audio file formats.

Unit - IV

Images & Animation

Images: – Making Still Images – Color – Image file formats – Animation: - The power of Motion – Principles of Animation – Animation by computer – Making Animations that work.

Unit - V

Video & Planning and Producing

Video: - Using Video – How video works and is displayed – Planning and Costing - The process of making Multimedia – Scheduling – Estimating - Designing and Producing: Designing - Producing.

Text Book:

"Multimedia Making it Work" - Tay Vaughan – Ninth Edition - MGH.

Chapters:

Unit – I **:** 1, 7(First 3 Sections)
Unit – II **:** 7
Unit – III **:** 2, 4
Unit – IV **:** 3, 5
Unit – V **:** 6, 9

Reference Books:

1. "Multimedia in Practice - Technology & Applications" – Judith jeffcoate- PHI.
2. "Multimedia production-Planning and Delivery" –John Villamil, Casanova Lous Molina– PHI.

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RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U5DME1(D)**

COURSE TITLE : Programming in ASP **QN.NO : 9334**

TIME : 3 Hours **MAX.MARKS :75**

Objectives:

- To impart the knowledge of Active server pages.
- Learning the concept and operations of ASP & ADO objects

Unit – I

The Basics of ASP Programming

Need for active server pages - Automated Development - ASP Objects - ADO Objects - Asp Components - Relational Databases and other Data sources - Developing Online Applications - Client/Server or tiered Applications - Virtual Directories - The Website as Communications Channel - Development Issues - ASP and Web programming Basics: Website Coding languages.

Unit – II

The Request and Response objects

Web-Based Communications- The Request Object- Collections-Accessing values from Forms or URL's- The Server Variables Collection- The Cookies Collection- The Client Certificate Collection- The Response Object-Response Object Collections-Response Object Properties-Response Object Methods - Writing Data to Browser - Redirecting Browser.The server object : Server object - The ASP error object-The application and session objects.

Unit – III

Active Server Components and ADO

The scripting Object Model: Creating Objects-The Dictionary Object- The scripting file system Object-The Drive Object-The folder Object-The file Object-The Scripting Text stream Object. Major Active Server Components: Creating Server Components with ASP-The Ad Rotator Component-The Browser Capabilities Component-The Content Linking Component-The Content Rotator Component- More Active Server components.

Unit – IV

The ADO connection

Interactivity and Latency: Optimizing Database interactions- The Connection Object - Advanced Error-Handling Techniques-The command Object- Recordset cursors- Recordset locking-Stored Procedures-The parameters Collection.

Unit – V

The ADO Recordset

The Recordset Object-Recordset Methods and Properties-Recordset Navigation and Manipulation Opertations-The Stream and Record Objects: Record Object Properties and Methods-Stream Object Properties and Methods.

Text Book:

"Asp 3.0 a beginner's Guide" – Dave Mercer –TMH.

Chapters:

Unit – I : 1, 2
Unit – II : 3, 4, 5
Unit – III : 6, 7, 8
Unit – IV : 10
Unit – V : 11

Reference Books

1. "Beginning ASP 3.0" – Chris Ullman, Wrox Publications.
2. "Designing Active Server Pages" – Scott Mitchell - O'REILLY Publications.
3. "Master Active server Pages 3" –Russell Jones - Sybex Publications

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RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 19U1DAC1**

COURSE TITLE : Discrete Mathematics **QN.NO : 9337**
TIME : 3 Hours **MAX.MARKS :75**

Objectives:

- To impart the knowledge of Discrete Mathematics.
- Learning the concepts of various aspects of discrete theory and its applications.

Unit – I The Foundations: Logic and Proofs

Propositional logic – Applications of Propositional logic – Propositional equivalences – (Exclude Propositional satisfiability, Applications of satisfiability, Solving satisfiability problems, and its related problems).

Unit - II Set Theory

Introduction – Sets - Notation and Description of Sets – Subsets - Venn-Euler Diagrams - operations on sets - Properties of set operations - verification of the Basic Laws of Algebra by Venn diagram.

Unit - III Relations

Relations and their properties – Representing relations – Closures of relations – Equivalence relations – Partial orderings (Theorems statement only; Exclude lexicographic ordering - Exclude Lattices).

Unit – IV Graphs

Graphs and Graphs models, (Excluding Biological networks; Tournaments; all its related examples and problems) – Graph terminology and special types of graphs – Representing graphs and Graph isomorphism – Connectivity (paths – connectedness in undirected graphs – paths and isomorphism – counting paths between vertices) – shortest path problems.

Unit – V Matrices

Introduction – operations – Inverse – Rank of a matrix - Solution of simultaneous linear equations – Eigen values and Eigen Vectors.

Text Books:

1. Discrete Mathematics and its applications, Seventh Edition, Kenneth.H.Rosen, McGrawHill Publishing company.
2. Discrete Mathematics, M.Venkataraman, N.Sridharan and N.Chandrasekaran, The National Publishing company, 2009.

Chapters:

Unit – I : 1.1, 1.2, 1.3
Unit - II : 1.1 – 1.8 → *Textbook 2*
Unit - III : 9.1, 9.3, 9.4, 9.5, 9.6
Unit – IV : 10.1, 10.2, 10.3, 10.4, 10.6)
Unit – V : 6.1 to 6.5, and 6.7) → *Textbook 2*

Reference Books

1. Alan Doerr,Levassure – "Applied Discrete Mathematical Structures for Computer Science" – Galgotia Publications.
2. Trembly and Manohar – "Discrete Mathematical Structures with Application to Computer

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PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U6DMC16**

COURSE TITLE : Data Mining **QN.NO : 9338**

TIME : 3 Hours **MAX.MARKS :75**

Objectives:

- To impart the knowledge of Data warehousing and Data Mining.
- Learning the concepts of various data mining methods and techniques.

Unit - I

Introduction & Data Preprocessing

Introduction to Data Mining – Data preprocessing: An overview - Data Cleaning - Data Integration - Data reduction – Data transformation and Data discretization.

Unit - II

Data warehousing and online analytical processing

Data warehouse: Basic concepts – Data Warehouse modeling: Data Cube and OLAP – Data Warehouse Implementation – Data generalization by attribute-oriented induction.

Unit - III

Mining Frequent, Associations and correlations

Basic concepts - Frequent Itemset Mining methods – Advanced Pattern mining: A road map - Pattern mining in multilevel, multidimensional space – Constraint-based frequent pattern mining.

Unit - IV

Classification

Basic concepts - Decision tree Induction- Bayes classification methods- Rule based classification – Classification: Advanced methods - Classification by Back propagation.

Unit - V

Cluster analysis

asic Concepts and methods: Cluster analysis- Partitioning methods - Hierarchical methods – Density based methods – Data Mining Trends and Research Frontiers: Data Mining Applications.

Text Book:

"Data Mining concepts and Techniques" – Jiawei Han, Micheline Kamber, Jian Pei -Third Edition - Morgan Kaufmann Publishers, New Delhi.

Chapters:

Unit – I: 1.1, 1.2, 3.1, 3.2, 3.3, 3.4, 3.5.
Unit – II: 4.1, 4.2, 4.4, 4.5
Unit – III: 6.1, 6.2, 7.1, 7.2, 7.3
Unit – IV: 8.1, 8.2, 8.3, 8.4, 9.2
Unit – V: 10.1, 10.2, 10.3, 10.4, 13.3.

Reference Books:

1. "Data Mining Introductory and Advanced topics" - Margaret Dunham –Prentice Hall 2003.
2. "Principles of Data Mining" - Heikki Mannila and Padhraic Smyth – MIT Press Fall 2000.

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RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U6DMC17**

COURSE TITLE : Management Information Systems **QN.NO : 9339**

TIME : 3 Hours **MAX.MARKS :75**

Objectives:

- To impart the knowledge of Management Information Systems.
- Learning the concept of decision making system.

Unit – I

Meaning - Definition- Integrated system- MIS vs. data processing - MIS and other academic discipline such as managerial Accounting, operational research, Management, organization theory and computer science.

Unit – II

MIS support for decision making-Structured, Programmable decisions-unstructured, non programmable Decisions- hierarchy of management activity-Information systems for operational & management control- Planned performance - Variance from planned performance, reasons for variances, Analysis of possible decisions or courses of action - MIS structure based on organizational function - Formal Vs Informal systems.

Unit – III

Decision- making process-Phases of decision- making process, problem finding, Formulation and solution or alternatives-criteria for decision making - Decision trees.

Unit – IV

Concepts of information - Definition of information. Model of communication system - mathematical definition of Information-information presentation-quality of Information - Gentle model of the human as an Information processor.

Unit – V

Concepts of planning and control and Organization Struture - Meaning-object of organizational planning-Setting of goals and objectives-hierarchy of planning -the planning process-the sources of Planning data-development of planning models - The basic model of organization structure- organization by product or service- Matrix organization.

Text Book:

"Management Information System Conceptual Foundations, Structure & Development" - Margrethe.H.Olson&Gordon.B.Davis–II Ed., -MGH.

Reference Books:

1. "Management Information System" - Davidkroneke,RichardAllanHatch.
2. "Management Information System" – C. Laudan,JanePriceLaudon – PHI.

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RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U6DME(E)**

COURSE TITLE : PHP Programming **QN.NO : 9340**

TIME : 3 Hours **MAX.MARKS :75**

Objectives:

- To impart the knowledge of PHP Programming.
- Code programs and develop interface using PHP Programming.

Unit –I

Introduction to PHP

Overview of PHP: PHP Origin-PHP History-Benefits in running PHP As A Server Side Script-Drawbacks in running PHP As A Server Side Script. Getting started: Writing PHP-Naming files-comments- The semicolon- Delivering text as output- White spaces- Running the PHP script- Data types-variables-constants.

Unit-II

The Basics of PHP

Operators: Unary operators-Negation operators-Increment/Decrement operators-Cast operators-Binary operators-Numeric operators-Assignment operators-Concatenation operators-Comparison operators-Logical operators-Bitwise operators-Ternary operators-Operator precedence. Arrays: Array Creation-Array Data Retrieval-Associative array-Conditional Statements: The if statement-Executing multiple statements-The else if clause-The switch statement. Iterations: looping-The For loop-The While loop-Controlling an array using a while loop -Do while statement-The for each loop-Infinite loops-Special Loop keywords - Loops within Loops.

Unit-III

Functions

User defined functions: Functions with arguments-Functions with multiple Arguments-Functions Accepting and returning values by reference- Functions Accepting and returning values by value-Accessing global variables within a function-Globalizing functions-Functions in Files-Recursion-Anonymous Functions-Built-in Functions-PHP Server variables-Working with DATE and TIME Functions-Performing mathematical operations-Working with String Functions.

P.T.O.

Unit-IV

Exception Handling and Working with files

Configuration directives-Error logging-Exception handling-About files and directories: Parsing directory paths-calculating file, directory and disk sizes-determining access and modification times-Working with files: the concept of resource-recognizing newline characters, end of file character-opening and closing a file-reading from a file-writing a string to a file-moving the file pointer-reading directory contents.

Unit-V

Working with Forms

Introducing HTML Form Tags and Elements-The main <form> Tag - Form elements:Text Box-Text Area-Password-Radio Button-Check Box-The Combo Box or Drop Down List Box-Hidden Field-Image-Submit and Reset buttons. Adding Elements To A Form: Adding A Textbox- Adding Radio buttons- Adding Check boxes- Adding A select box- Adding A password field- Adding A Textarea- Adding A Submit and Reset button-Adding a Hidden Field-Uploading Files to the web server using PHP-THE move_uploaded_file() function.

Text Books:

1. "PHP 5.1 for beginners" - Ivan Bayross,Sharnam Shah -First edition - SPD publishers.
2. 2.,"Beginning Php and Mysql" - W.Jason Gilmore - Fourth edition, - Springer publishers.

Chapters:

Unit –1: 1,5
Unit –2: 6
Unit –3: 7
Unit –4: 8, 10(pages 229-248) → Text Book 2
Unit –5: 8 → Text Book 1

Reference Books:

1. "Build your own database driven wed site using PHP & MySQL" - Kevin Yank - IV Edition.
2. "Straight to the point PHP" - Dinesh Maidasani,- First edition- FireWall media.

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RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U6DME2(H)**

COURSE TITLE : Computer Graphics **QN.NO : 9343**

TIME : 3 Hours **MAX.MARKS :75**

Objectives:

- To impart the knowledge of computer graphics.
- Learning the concepts of various aspects of graphical primitives and algorithms.

Unit – I -Geometry & Line Generation

Introduction – Pixels & frame buffers - Vector generation - Bresenhams's algorithm - Antialiasing of lines - Thick line segments Character generation - Displaying the frame buffer.

Unit – II - Polygons

Introduction – Polygons - Polygon representation - Entering polygons - An inside test - Polygon interfacing algorithms - Filling polygons - Filling with a pattern.

Unit – III - Transformations

Introduction - Matrices - Scaling transformations - Sin and Cos –Rotation - Homogeneous coordinates & translation - Coordinate Transformations - Rotation about an arbitrary point - Other Transformations – Inverse transformations - Transformation Routines - Display procedures.

Unit – IV - Segments

Introduction - The segment table - Segment creation - Closing a segment - Deleting a segment - Renaming a segment - Visibility – Image transformation - Saving and Showing Segments - Other displays – File Structures.

Unit – V - Windowing & Clipping

Introduction - The viewing transformation - Clipping - The Cohen - Sutherland out code algorithm - The Sutherland hodgman algorithm - Adding clipping to the system - Multiple windowing.

Text Book:

"Computer Graphics, A Programming Approach" – Steven Harrington – Second Edition McGraw Hill International Edition.

Chapters:

Unit – I: Chapter 1
Unit – II: Chapter 3
Unit – III: Chapter 4
Unit – IV: Chapter 5
Unit – V: Chapter 6

Reference Books:

1. "Principles of Interactive Computer Graphics"- Newman & Sproull – Second Edition McGraw Hill Edition.
2. "Computer Graphics"- Donald Hearn|M.Pauline Baker- Second Edition-PHI.

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RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 17U6DSM6**

COURSE TITLE : Desktop Publishing **QN.NO : 9346**

TIME : 3 Hours **MAX.MARKS :75**

Objectives:

- To impart the knowledge of Desktop Publishing.
- Learning the tools of Photoshop and Flash software.

Unit – I

Photoshop

Introduction – Working environment – Opening and Saving files – Getting started with Images – Defining colors.

Unit – II

Photoshop tools

Painting tools – Editing tools – Making selection – Layers – Filters – Color correction and Techniques.

Unit – III

Photoshop tools

Getting started –Tools & Toolbar – Properties inspector – Panels – Viewing Options - Creating Objects – Stage and overlay objects – Tools – Panel tool – Line tool – Pen tool – Sub select tool – Oval tool – Rectangle tool – Pencil tool – Brush tool – Ink bottle tool – Paint bucket tool – Dropper tool – Eraser tool.

Unit – IV

Flash

Editing object – Selecting with Lasso tool – Arrow tool – Grouping objects – Free Transform tool – Reshaping objects – Align objects – Pixels – Snapping – Stacking order – Color and text – Standard color Palette – Adding solid colors – Adding Gradients – Fill Transform tool – Selecting Colors – Adding, formatting, Manipulating text – Bitmap sound and videos – Using bitmaps – Importing bitmaps – Properties – Bitmap as file – Using sound – Importing sounds – Editing sounds – Adding video – Manipulating videos.

Unit – V

Flash tools

Frames and layers – Working with frames – Adding frames – Deleting and copying frames – Frame properties – Working with layers – Inserting layers – Deleting and Copying layers – Layer mode – Properties – Folders – Mask layers – Animations – Animation basics – Elements of Animation – Animation scenes – Frame by Frame animation – Motion twinning – Motion Guides – Shape twinning – Animation text – Distribute text to layers – Movie clips.

Text Book:

1. Nick Vandome – "Flash MX in Easy steps" – Dream tech Press.
2. Robert Shuffle Botham - "Photoshop 7 in Easy steps" – Dream tech Press.

Reference Books:

1. Vikas Gupta – "Comdex Desktop publishing course kit".
2. Lisa Bucki – "Macro Media flash MX 2004 fast and easy web development" – Premier Press.

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RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 20U1DMC1**

COURSE TITLE : Programming in C **QN.NO : 11201**

TIME : 3 Hours **MAX.MARKS :75**

Course Objectives:

This course is designed to provide a comprehensive study of the C programming language and rendering basic programming concepts.

Units	Programming in C --Course Contents	Total Hours: 60
Unit -I	C fundamentals Character set - Identifier and keywords - data types - constants - Variables - Declarations - Expressions - Statements - Arithmetic, Unary, Relational and logical, Assignment and Conditional Operators - Library functions.	12 hrs
Unit-2	Data input output functions - Simple C programs - Flow of control - if, if-else, while, do-while, for loop, Nested control structures - Switch, break and continue, go to statements - Comma operator.	12 hrs
Unit-3	Functions -Definition - proto-types - Passing arguments - Recursions. Storage Classes - Automatic, External, Static, Register Variables - Multi-file programs.	12 hrs
Unit-4	Arrays - Defining and Processing - Passing arrays to functions - Multi-dimension arrays - Arrays and String. Structures - User defined data types - Passing structures to functions - Self-referential structures - Unions - Bit wise operations.	12 hrs
Unit-5	Pointers - Declarations - Passing pointers to Functions - Operation in Pointers - Pointer and Arrays - Arrays of Pointers - Structures and Pointers - Files: Creating Processing, Opening and Closing a data file.	12 hrs

Text Book

1. E. Balagurusamy, "Programming in ANSI C", Fifth Edition, Tata McGraw Hill.

Reference Books

1. B.W. Kernighan and D M.Ritchie, "The C Programming Language", 2nd Edition, PHI, 1988.
2. H. Schildt, "C: The Complete Reference", 4th Edition. TMH Edition, 2000.
3. Gottfried B.S, "Programming with C", Second Edition, TMH Pub. Co. Ltd., New Delhi 1996.
4. Kanetkar Y., "Let us C", BPB Pub., New Delhi, 1999.

COURSE LEARNING OUTCOMES:

On the completion of the course the students will be able to

	COURSE LEARNING OUTCOMES	**Knowledge Level (basis of Bloom's Taxonomy)**
CLO-1	Know the knowledge of the structured programming and basic syntax of 'C' language.	K1 , K3
CLO-2	Identify the fundamental operators, data types and all library functions	K4
CLO-3	Identify and design the various features such as Flow control and control structures.	K4, K3
CLO-4	Analyse and construct the programs for Bitwise operators, Union and Structure concept	K2,K4
CLO-5	Design C programs with the concept of pointers, pointers & Arrays, Pointers & Files.	K4
CLO-6	Construct a file program with various operations like create, open, close, process and close.	K4

MAPPING OF CLOs WITH PSOs:

Course Learning Outcomes	**PSO 1 (Knowledge Base)**	**PSO 2 (Problem Analysis & Investigation)**	**PSO 3 (Communication Skills & Design)**	**PSO 4 (Individual and Team Work)**	**PSO 5 (Professionalism Ethics and equity)**	**PSO 6 (Life Long Learning)**
CLO-1	3	3	3	2	3	2
CLO-2	1	2	2	1	2	1
CLO-3	3	3	3	3	3	2
CLO-4	2	2	3	1	2	3
CLO-5	2	2	3	2	2	3
CLO-6	3	3	3	2	3	2

3- Advanced Application 2- Intermediate 1- Introductory

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RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 20U1DMC2**

COURSE TITLE : Digital Computer Fundamentals **QN.NO : 11202**

TIME : 3 Hours **MAX.MARKS :75**

Course Objectives:

This is designed to understand fundamental concepts and features digital Computer and lead to learn the building blocks of the digital computer system.

Units	**Digital computer fundamentals --Course Contents**	**Total Hours: 60**
Unit -I	Number Systems and Codes: Number System – Base Conversion – Binary Codes – Code Conversion. Digital Logic: Logic Gates – Truth Tables – Universal Gates.	12 hrs
Unit-2	Boolean Algebra: Laws and Theorems – SOP, POS Methods – Simplification of Boolean Functions – Using Theorems, K-Map, Prime – Implicant Method – Binary Arithmetic: Binary Addition – Subtraction – Various Representations of Binary Numbers – Arithmetic Building Blocks – Adder – Subtractor.	12 hrs
Unit-3	Combinational Logic: Multiplexers – De-multiplexers – Decoders – Encoders – Code Converters – Parity Generators and Checkers.	12 hrs
Unit-4	Sequential Logic: RS, JK, D, and T Flip-Flops – Master-Slave Flip-Flops. Registers: Shift Registers – Types of Shift Registers.	12 hrs
Unit-5	Counters: Asynchronous and Synchronous Counters - Ripple, Mod, Up-Down Counters– Ring Counters. Memory: Basic Terms and Ideas –Types of ROMs – Types of RAMs.	12 hrs

Text Book

1. V.Rajaraman and T.Radhakrishnan, *Digital Computer Design*, Prentice Hall of India, 2001
2. D.P.Leach and A.P.Malvino, *Digital Principles and Applications* – TMH – Fifth Edition – 2002.
3. M. Moris Mano, *Digital Logic and Computer Design*, PHI, 2001.
4. T.C.Bartee, *Digital Computer Fundamentals*, 6th Edition, Tata McGraw Hill, 1991.

P.T.O.

COURSE LEARNING OUTCOMES:

On the completion of the course the students will be able to

	COURSE LEARNING OUTCOME	**Knowledge Level (basis of Bloom's Taxonomy)**
CLO-1	Build simple logic circuits using basic gates and universal logic gates.	K3
CLO-2	Illustrate the basic idea about number systems and to learn conversion from one number system to another number system.	K3
CLO-3	Discuss about various data processing circuits.	K2,K3
CLO-4	Identify the operations and characteristics of clocks and timer circuits.	K4
CLO-5	Analyse and construct various flip-flops and counters.	K4

MAPPING OF CLOs WITH PSOs:

Course Learning Outcomes	**PSO 1 (Knowledge Base)**	**PSO 2 (Problem Analysis & Investigation)**	**PSO 3 (Communication Skills & Design)**	**PSO 4 (Individual and Team Work)**	**PSO 5 (Professionalism Ethics and equity)**	**PSO 6 (Life Long Learning)**
CLO-1	3	2	2	3	1	1
CLO-2	1	2	2	1	2	1
CLO-3	3	2	3	3	1	2
CLO-4	2	2	3	1	2	3
CLO-5	2	2	3	2	2	3

3- Advanced Application 2- Intermediate 1- Introductory

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RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 20U1DAC1**

COURSE TITLE : Discrete Mathematics **QN.NO : 11203**

TIME : 3 Hours **MAX.MARKS :75**

COURSE OBJECTIVES :

To familiarize the students about the concept and techniques of propositional logic , equivalences and their applications to logic theory. To study about Graph and Graph modules.

Units	Discrete mathematics --Course Contents	Total Hours: 60
Unit -I	Propositional Logic – Propositional equivalences-Predicates and quantifiers-Nested Quantifiers-Rules of inference-introduction to Proofs-Proof Methods and strategy	12 hrs
Unit-2	Mathematical inductions-Strong induction and well ordering-.The basics of counting-The pigeon hole principle –Permutations and combinations-Recurrence relations Solving Linear recurrence relations-generating functions-inclusion and exclusion and applications	12 hrs
Unit-3	Graphs and graph models-Graph terminology and special types of graphs-Representing graphs and graph isomorphism -connectivity-Euler and Hamilton paths	12 hrs
Unit-4	Algebraic systems-Semi groups and monoids-Groups-Subgroups and Homomorphism's Cosets and Lagrange's theorem- Ring & Fields (Definitions and examples)	12 hrs
Unit-5	Partial ordering-Posets-Lattices as Posets- Properties of lattices-Lattices as Algebraic systems –Sub lattices –direct product and Homomorphism-Some Special lattices Boolean Algebra	12 hrs

TEXT BOOKS:

1. Kenneth H.Rosen, "Discrete Mathematics and its Applications" ,Special Indian edition, Tata McGraw-Hill Pub. Co. Ltd., New Delhi,2011.
2. Trembly J.P and Manohar R, "Discrete Mathematical Structures with Applications to Computer Science", Tata McGraw–Hill Pub. Co. Ltd, New Delhi, 30th edition2007.

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REFERENCES:

1. Ralph. P. Grimaldi, "Discrete and Combinatorial Mathematics: An Applied Introduction", Fourth Edition, Pearson Education Asia, Delhi, 2009.
2. Thomas Koshy, "Discrete Mathematics with Applications", Elsevier Publications, 2006.

COURSE LEARNING OUTCOMES:

On the completion of the course the students will be able to

	COURSE LEARNING OUTCOME	**Knowledge Level (basis of Bloom's Taxonomy)**
CLO-1	Use And illustrate the concepts of proposition disjunction, conjunction and conditional statements and their use in problem solving.	K3
CLO-2	Explain and illustrate the concepts of mathematical induction and its use .	K3,K4
CLO-3	Explain and illustrate the algebraic systems, semi groups, monoids and homomorphism.	K3,K4
CLO-4	solve the concepts of lattices and Boolean algebra.	K3
CLO-5	Solve and explain the concepts of permutations and combinations and recurrence relations.	K4

MAPPING OF CLOs WITH PSOs:

Course Learning Outcomes	**PSO 1 (Knowledge Base)**	**PSO 2 (Problem Analysis & Investigation)**	**PSO 3 (Communication Skills & Design)**	**PSO 4 (Individual and Team Work)**	**PSO 5 (Professionalism Ethics and equity)**	**PSO 6 (Life Long Learning)**
CLO-1	3	2	2	1	1	1
CLO-2	1	3	1	1	2	1
CLO-3	3	2	3	1	1	2
CLO-4	2	2	3	1	2	3
CLO-5	3	2	3	3	2	3

3- Advanced Application 2- Intermediate 1- Introductory

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THE MADURA COLLEGE (Autonomous), MADURAI – 625 011

(AFFILIATED TO MADURAI KAMARAJ UNIVERSITY)

RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 20U1DMC3**

COURSE TITLE : Data structures and Algorithms **QN.NO : 11205**

TIME : 3 Hours **MAX.MARKS :75**

COURSE OBJECTIVES :

To introduce various data structures and their implementations and learn various sorting and searching algorithms.

Units	Data structures and algorithms --Course Contents	Total Hours: 60
Unit -I	Introduction of algorithms, analysing algorithms, Arrays : Representation of Arrays, Implementation of Stacks and queues, Application of Stack: Evaluation of Expression - Infix to postfix Conversion - Multiple stacks and Queues, Sparse Matrices.	12 hrs
Unit-2	Linked list : Singly Linked list - Linked stacks and queues - polynomial addition - More on linked Lists - Doubly linked List and Dynamic Storage Management - Garbage collection and compaction.	12 hrs
Unit-3	Trees: Basic Terminology - Binary Trees - Binary Tree representations - Binary trees - Traversal - More on Binary Trees - Threaded Binary trees - counting Binary trees. Graphs: Terminology and Representations - Traversals, connected components and spanning Trees, Single Source Shortest path problem.	12 hrs
Unit-4	Symbol Tables : Static Tree Tables - Dynamic Tree Tables - Hash Tables : Hashing Functions - overflow Handling. External sorting : Storage Devices - sorting with Disks : K-way merging - sorting with tapes.	12 hrs
Unit-5	Internal sorting : Insertion sort - Quick sort - 2 way Merge sort - Heap sort - shell sort - sorting on keys. Files: Files, Queries and sequential organizations - Index Techniques - File organization.	12 hrs

Text Books

1. Ellis Horowitz, Sartaj Shani, Data Structures, Galgotia publication.

Reference Books

1. Data structures Using C Aaron M. Tanenbaum, Yedidyah Langsam, Moshe J.Augenstein, Kindersley (India) Pvt. Ltd.,
2. Data structure and Algorithms, Alfred V. Aho, John E. Hopcroft, Jeffrey D.Ullman, Pearson Education Pvt. Ltd.,

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COURSE LEARNING OUTCOMES:

On the completion of the course the students will be able to

	COURSE LEARNING OUTCOME	Knowledge Level (basis of Bloom's Taxonomy)
CLO-1	Describe various algorithms and construction of Stack and Queue.	K1
CLO-2	Explain the concepts of Linked lists and construct the linked list related applications.	K4
CLO-3	Illustrate the ideas about binary trees, tree traversals and graphs.	K3
CLO-4	Describe the concepts related with symbol tables, hashing functions and storage devices.	K1, K3
CLO-5	Construct the algorithms for various sorting techniques and files with its various queries and indexing techniques.	K4

MAPPING OF CLOs WITH PSOs:

Course Learning Outcomes	PSO 1 (Knowledge Base)	PSO 2 (Problem Analysis & Investigation)	PSO 3 (Communication Skills & Design)	PSO 4 (Individual and Team Work)	PSO 5 (Professionalism Ethics and equity)	PSO 6 (Life Long Learning)
CLO-1	3	2	1	2	1	1
CLO-2	3	3	1	1	2	1
CLO-3	3	2	1	1	1	2
CLO-4	3	2	2	1	2	3
CLO-5	2	3	3	3	2	1

3- Advanced Application 2- Intermediate 1- Introductory

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THE MADURA COLLEGE (Autonomous), MADURAI – 625 011

(AFFILIATED TO MADURAI KAMARAJ UNIVERSITY)

RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 20U1DMC4**

COURSE TITLE : Computer Organisation and Architecture **QN.NO : 11206**

TIME : 3 Hours **MAX.MARKS :75**

COURSE OBJECTIVES :

This course introduces the fundamental concepts of digital Computer organization and architecture.

To gain the basic knowledge of the building blocks of the computer system.

Units	Computer Organisation and architecture --Course Contents	Total Hours: 60
Unit -I	Basic of Computer, Von Neumann Architecture, Generation of Computer, Classification of Computers, Instruction Execution. Register Transfer and Micro operations: Register Transfer, Bus and Memory Transfers, Three-State Bus Buffers, Memory Transfer, Micro-Operations, Register Transfer Micro-Operations, Arithmetic Micro-Operations, Logic Micro-Operations, Shift Micro-Operations.	12 hrs
Unit-2	Stack Organization, Register Stack, Memory Stack, Reverse Polish Notation. Instruction Formats, Three- Address Instructions, Two – Address Instructions, One - Address Instructions, Zero - Address Instructions, RISC Instructions, Addressing Modes. RISC & CISC and their characteristics.	12 hrs
Unit-3	Addition And Subtraction With Signed-Magnitude, Multiplication Algorithm, Booth Multiplication Algorithm, Array Multiplier, Division Algorithm, Hardware Algorithm, Divide Overflow, Floating-Point Arithmetic Operations, Decimal Arithmetic Operations, BCD Adder, BCD Subtraction.	12 hrs
Unit-4	Modes Of Transfer, Priority Interrupt, DMA, Input-Output Processor (IOP), CPU-IOP Communication. Memory Organization: Memory Hierarchy, Main Memory, Auxiliary Memory, Cache Memory, Virtual Memory, Associative Memory.	12 hrs
Unit-5	Control memory – Address sequencing – Design of Control unit. Pipelining: Parallel Processing, Pipelining - Arithmetic Pipeline, Instruction Pipeline. Multiprocessors: Characteristics of Multiprocessors, Interconnection Structure: Time-Shared Common Bus, Multi-Port Memory, Crossbar Switch, Multistage Switching Network, Hypercube Interconnection.	12 hrs

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TEXT BOOK:

1. "Computer System Architecture", M.Morris Mano. 4TH EDITION.

REFERENCE BOOK:

1. "Computer System Architecture", John. P. Hayes.
2. "Computer Organization, C. Hamacher, Z. Vranesic, S.Zaky.
3. "Computer Architecture and parallel Processing ", Hwang K. Briggs.

COURSE LEARNING OUTCOMES:

On the completion of the course the students will be able to

	COURSE LEARNING OUTCOME	Knowledge Level (basis of Bloom's Taxonomy)
CLO-1	Design and simplify the combinational circuits using basic building blocks ,Boolean algebra and Karnaugh map.	K4
CLO-2	Explain the organization of basic computer, control units and its design.	K4,K3
CLO-3	Describe the working of CPU.	K1
CLO-4	Describe the operation of registers, micro-instructions and Input /Output units.	K1
CLO-5	Explain the organization of memory and memory related operations and advanced computer architectures.	K4

MAPPING OF CLOs WITH PSOs:

Course Learning Outcomes	PSO 1 (Knowledge Base)	PSO 2 (Problem Analysis & Investigation)	PSO 3 (Communication Skills & Design)	PSO 4 (Individual and Team Work)	PSO 5 (Professionalism Ethics and equity)	PSO 6 (Life Long Learning)
CLO-1	3	2	1	2	1	1
CLO-2	3	3	1	1	1	1
CLO-3	3	2	1	1	1	2
CLO-4	3	2	2	1	2	1
CLO-5	3	2	3	3	2	1

3- Advanced Application 2- Intermediate 1- Introductory

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THE MADURA COLLEGE (Autonomous), MADURAI – 625 011

(AFFILIATED TO MADURAI KAMARAJ UNIVERSITY)
RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME: B.Sc., Computer Science **COURSE CODE : 20U2DAC2**
COURSE TITLE : Microprocessors 8086 / 88 **QN.NO : 11207**

TIME : 3 Hours **MAX.MARKS :75**

COURSE OBJECTIVES:

To provide a theoretical & practical introduction to microcomputer and microprocessors, assembly language programming techniques, design of hardware interfacing circuit.

Units	Microprocessors 8086 / 88 --Course Contents	Total Hours: 60
Unit -I	Internal architecture – Software model- data types – segment registers- data registers- pointers and index Registers- status registers – generating a memory address – addressing mode.	12 hrs
Unit-2	The instruction set – data transfer instructions- arithmetic instructions – logic Instructions- shift instructions- rotate instructions- compare instructions- jump Instructions – the loop and loop handling instructions – string and string handling Instructions.	12 hrs
Unit-3	Minimum –mode and maximum-mode systems minimum system mode interface- system Clock – bus cycle – control signals – read and write bus cycles – memory interface Circuits.	12 hrs
Unit-4	Minimum-mode interface- maximum-mode interface- I/O data transfers- I/O instructions- Eight byte wide output ports with isolated I/O – eight byte wide input port using isolated I/o.	12 hrs
Unit-5	Types of interrupts – interrupt instructions- enabling/disabling of interrupt – external Hardware interrupt interface – block diagram of the 8249a (interrupt controller) – Software interrupts.	12 hrs

Text Book:

1. Walter A. Triebel, Avtar Sing - "The 8088 and 8086 microprocessors (programming, interfacing, software, hardware and Applications) " – Prentice Hall Of India, Edition - 1995.

Reference Books:

1. Douglas v.hall – "Microprocessor and interfacing"– McGraw-Hill.
2. Bary Brey – "Introduction to Microprocessor and Microcomputer"- PHI.

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COURSE LEARNING OUTCOMES:

On the completion of the course the students will be able to

	COURSE LEARNING OUTCOME	Knowledge Level (basis of Bloom's Taxonomy)
CLO-1	Illustrate the basic idea about internal architecture of the microprocessor.	K3
CLO-2	Identify the instruction sets and operations of arithmetic , relational and conditional statements.	K1, K4
CLO-3	Discuss about the interface cycles with read ,write and fetch cycles.	K2
CLO-4	Identify the instructions about data transfer between I / O blocks.	K4
CLO-5	Discuss about an interrupt , its types, hardware and software interrupts.	K2

MAPPING OF CLOs WITH PSOs:

Course Learning Outcomes	PSO 1 (Knowledge Base)	PSO 2 (Problem Analysis & Investigation)	PSO 3 (Communication Skills & Design)	PSO 4 (Individual and Team Work)	PSO 5 (Professionalism Ethics and equity)	PSO 6 (Life Long Learning)
CLO-1	3	1	1	2	1	1
CLO-2	2	3	2	1	1	1
CLO-3	2	3	1	1	1	2
CLO-4	3	2	2	1	2	1
CLO-5	2	2	2	3	2	1

3- Advanced Application 2- Intermediate 1- Introductory

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RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME : B.Sc., Computer Science **COURSE CODE : 20U3DMC5**

COURSE TITLE : Operating system **QN.NO : 11209**

TIME : 3 Hours **MAX.MARKS :75**

COURSE OBJECTIVES :

This course is designed

- To familiarize with basic knowledge of computer operating Systems
- To learn bout its Structure, functions and resource management.

Units	Operating Systems	Total Hours: 75	K-Level
Unit1	Introduction - History of operating system- Different kinds of operating system – Operating system concepts - System calls-Operating system structure.	15 hrs	Up to K2
Unit2	Processes and Threads: Processes - threads - thread model and usage - inter process communication.	15 hrs	Up to K3
Unit3	Scheduling - Memory Management: Memory Abstraction - Virtual Memory - Page replacement algorithms.	15 hrs	Up to K3
Unit4	Deadlocks: Resources- introduction to deadlocks - deadlock detection and recovery - deadlocks avoidance - deadlock prevention. Multiple processor system: multiprocessors - multi computers.	15 hrs	Up to K3
Unit5	Input / Output: principles of I/O hardware - principles of I/O software. Files systems: Files - directories - files systems implementation - File System Management and Optimization.	15 hrs	Up to K4

Books for Study:

1. Andrew S. Tanenbaum, "Modern Operating Systems", 2nd Edition, PHI private Limited, New Delhi, 2008.

Books for Reference :

1. William Stallings, "Operating Systems - Internals & Design Principles",5thEdition, Prentice - Hall of India private Ltd, New Delhi, 2004.
2. Sridhar Vaidyanathan, "Operating System", 1st Edition, Vijay Nicole Publications, 2014.

Web resources:

1. http://williamstallings.com/Extras/OS-Notes/notes.html
2. https://www.tutorialspoint.com/operating_system/operating_system_tutorial.pdf
3. https://lecturenotes.in/subject/56/operating-systems-os

Rationale for Nature of the course:

In the recent days learning operating systems is essential to know the working functions of computers, to become a computer programmer and to ensure the designed programs that work to the strengths of a particular operating system. The theoretical knowledge helps to understand the concepts and working functions of an operating systems.

Activities having direct bearing on Skill development / Employability /Entrepreneurship

- Seminar
- Assignment preparation
- Presentation with ICT tools Physical demonstrations.

The teaching methods includes Chalk and talk, PowerPoint, demonstrations, assignments and group discussions.

Lecture schedule:

Unit	Topics	Hrs	Mode
Unit I	Introduction - History of operating system	3	Chalk and talk, Quiz and assignment
	Different kinds of operating system –	4	
	Operating system concepts - System calls	4	
	Operating system structure.	4	
Unit II	Processes - threads -	5	Chalk and talk, Group discussion
	thread model and usage	5	
	- inter process communication.	5	
Unit III	Scheduling	5	Chalk and talk, Quiz and assignment
	Memory Management: Memory Abstraction	5	
	Virtual Memory - Page replacement algorithms.	5	
Unit IV	Deadlocks: Resources- introduction to deadlocks	3	PPT, Chalk and talk, Quiz and assignment
	deadlock detection and recovery	5	
	deadlocks avoidance - deadlock prevention	4	
	Multiple processor system: multiprocessors - multi computers.	3	
Unit V	Input / Output: principles of I/O hardware - principles of I/O software	5	PPT, Chalk and talk, Quiz and assignment
	Files systems: Files - directories - files systems implementation	5	
	File System Management and Optimization.	5	

Learning Outcome Based Education & Assessment (LOBE)

Blue Print – Operating systems

Articulation Mapping – K Levels with Courses Learning Outcomes (CLOs)

BLUE PRINT FOR INTERNAL ASSESSMENT – I

S. No.	CLOs	K-Level	Section A		Section B		Section C (Either / or Choice)	Section D (Open Choice)
			MCQs		Short Answers			
			No. of Questions	K-Level	No. of Questions	K-Level		
1.	CLO 1	Up to K 2	2	K1 & K2	1	K1	2 (K1&K1)	1(K2)
2.	CLO 2	Up to K 3	2	K1 & K2	1	K2	2 (K2&K2)	1(K3)
No. of Questions to be asked			4		3		4	3
No. of Questions to be answered			4		3		2	2
Marks for each Question			1		2		5	10
Total Marks for each Section			4		6		10	30

BLUE PRINT FOR INTERNAL ASSESSMENT – II

S. No.	CLOs	K-Level	Section A		Section B		Section C (Either / or Choice)	Section D (Open Choice)
			MCQs		Short Answers			
			No. of Questions	K-Level	No. of Questions	K-Level		

1.	CLO 3	Up to K 4	2	K1 & K2	1	K2	2	1(K4)
2.	CLO 4	Up to K 3	2	K1 & K2	1	K1	2	1(K3)
No. of Questions to be asked			4		3		4	3
No. of Questions to be answered			4		3		2	2
Marks for each Question			1		2		5	10
Total Marks for each Section			4		6		10	30

Learning Outcome Based Education & Assessment (LOBE)

Blue Print – Operating systems

Articulation Mapping – K Levels with Courses Learning Outcomes (CLOs)

S. No.	CLOs	K-Level	Section A		Section B		Section C (Either / or Choice)	Section D (Open Choice
			MCQs		Short Answers			
			No. of Questions	K-Level	No. of Questions	K-Level		
1	CLO 1	Up to K-2	2	K1 & K2	1	K1	2 (K1&K1)	1(K2)
2	CLO 2	Up to K-3	2	K1 & K2	1	K2	2 (K2&K2)	1(K3)
3	CLO 3	Up to K-3	2	K1 & K2	1	K2	2 (K3&K3)	1(K4)
4	CLO 4	Up to K-3	2	K1 & K2	1	K1	2 (K3&K3)	1(K3)
5	CLO 5	Up to K-4	2	K1 & K2	1	K2	2 (K4&K4)	1(K3)
No. of Questions to be asked			10		5		10	5
No. of Questions to be answered			10		5		5	3
Marks for each Question			1		2		5	10
Total Marks for each Section			10		10		25	30

Distribution of Section-wise Marks with K Levels

K Levels	Section A (No Choice)	Section B (No Choice)	Section C (Either/or)	Section D (Open Choice)	Total Marks	% of Marks without choice	Consolidated
K1	5	4	10	-	**19**	15.83	**42%**
K2	5	6	10	10	**31**	25.83	
K3	-	-	20	30	**50**	41.67	**42%**
K4	-	-	10	10	**20**	16.67	**16%**
Total Marks	10	10	50	50	**120**	100.00	**100%**

Distribution of Unit-wise questions with K Levels

Section A	Section B	Section C	Section D
2 Questions for each Unit (K1 & K2 Level)	1 Question from each Unit (K1 & K2 Level)	2 Questions from Unit-I (K1 Level)	1Question from Unit-I (K2 Level)
		2 Questions fromUnit-II (K3 Level)	1Question from Unit-II (K3 Level)
		2 Questions from Unit-III (K3 Level)	1Question from Unit-III (K4 Level)
		2 Questions from Unit-IV (K2 Level)	1Question from Unit-IV (K3 Level)
		2 Questions from Unit-V (K4 Level)	1Question from Unit-V (K3 Level)

K1 –Remembering and recalling facts with specific answers

K2 – Basic understanding of facts and stating main ideas with general answers

K3 – Application oriented – Solving Problems

K4 – Examining, analyzing, presentation and make interferences with evidences

COURSE OUTCOMES:

On the completion of the course the students will be able to

CLOs	COURSE OUTCOME	Knowledge Level (basis of Bloom's Taxonomy)
CO-1	Understand the basic structures of Modern operating system and its functions and applications.	Up to K2
CO-2	Understand the concepts of Multi-process ,multiprogramming, threads and scheduling methods	Up to K3
CO-3	Acquire the knowledge of synchronization, dead lock and prevention methods.	Up to K3
CO-4	Demonstrate the design and management concepts of main memory, virtual memory along with issues and challenges.	Up to K4
CO-5	Understand the various types of I/O management and resource management techniques.	Up to K3

MAPPING OF COs WITH PSOs:

Course Outcomes	PSO 1 (Knowledge Base)	PSO 2 (Problem Analysis & Investigation)	PSO 3 (Communication Skills & Design)	PSO 4 (Individual and Team Work)	PSO 5 (Professionalism Ethics and equity)	PSO 6 (Life Long Learning)
CO-1	3	1	1	2	1	1
CO-2	2	3	2	1	1	1
CO-3	2	3	1	1	1	2
CO-4	3	2	2	1	2	1
CO-5	2	2	2	3	2	1

3- Advanced Application 2- Intermediate 1- Introductory

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THE MADURA COLLEGE (Autonomous), MADURAI – 625 011

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RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME : B.Sc., Computer Science **COURSE CODE : 20U3DSM1**

COURSE TITLE :Visual Programming **QN.NO : 11210**

TIME : 3 Hours **MAX.MARKS :75**

COURSE OBJECTIVES:

The course is designed

- To impart the knowledge of computer programming with Visual GUI approach
- To learn the concept and controls of a front-end tool.

Units	TOPICS	Total Hours : 30	K-levels
Unit -I	**Introduction** Overview of the IDE - Managing forms in Visual Basic - The Visual Basic Language: Declaring Constants, Variables – Selecting variable types- Converting between data types - setting variable scope- verifying data types – declaring arrays & Dynamic arrays – Declaring Subroutines – Declaring functions – Handling strings – Converting strings to numbers and back again – Handling operators & operator precedence – Using if-else statements- Using select case –Looping – Handling higher math- Handling Dates and Times.	6 hrs	Up to K2
Unit-2	**Controls** Text Boxes and Rich text Boxes- command buttons – checkboxes & option buttons – list boxes and combo boxes – picture boxes and image controls – The timer control – The frame control – the label control – the shape control.	6 hrs	Up to K3
Unit-3	**Menus & Toolbars** Visual Basic Menus: adding a menu to a form – modifying & deleting menu items – creating sub menus – using Visual Basic predefined menus- Handling MDI forms & MDI child menuscreating & displaying popup menus – Adding & deleting menu items at runtime-– Toolbars, status bars, progress bars and cool bars.	6 hrs	Up to K3
Unit-4	**Files & Data Base Concepts** File handling and File Controls – Using DAO,RDO and ADO : Creating and managing databases with the visual data manager – creating a table - Adding a Data control – opening a database with the data control, Remote data control, ADO data control – connecting a databases using controls- working with database objects in code.	6 hrs	Up to K4
Unit-5	**Active-x controls & Documents** Creating an Active-x control – Designing Active-x control- Adding controls to an Active-x control- Registering an Active-x control – Creating an Active-x Document – Active-x Document dll vs EXEs – Testing an Active-x Document.	6 hrs	Up to K4

Books for Study:

Steven Holzner – "Visual Basic 6 Programming Black Book" - 16th Reprint Edition –Dream tech Press Publications

Books for Reference :

1. Petroutsos.E – " Mastering Visual Basic 6" – Fifth edition, BPB Publications
2. Jerke .N - " Visual Basic 6.0 – The Complete reference" – Nineteenth Reprint 2004, TataMcGraw Hill Publishing.
3. Gary Cornell- "VB 6 from the Ground up" – Second Reprint 1999-Tata-McGraw Hill Private Ltd.

Web resources:

1 https://lecturenotes.in/m/17698-note-of-visual-basic-by-

2. https://www.csus.edu/indiv/s/scanland/mis15/index_htm_files/ch1.pdf

Rationale for Nature of the course:

This language allows programmers to create software interface and codes in an easy to use graphical environment. Visual Basic is the combination of different components that are used on forms having various parameters or components. On the one hand it allows programmers to develop widows based applications. So, learning this type of GUI oriented language will be more useful while establishing an opportunity for employment.

Activities having direct bearing on Skill development / Employability /Entrepreneurship

- Seminar
- Assignment preparation
- Developing simple program segments
- Thinking and analysis on theoretical concepts

Pedagogy:

The teaching methods includes Chalk and talk, PowerPoint, demonstrations, assignments and group discussions.

Lecture schedule:

Unit	Topics	Hrs	Mode
Unit I	Overview of the IDE - Managing forms in Visual Basic - The Visual Basic Language: Declaring Constants, Variables – Selecting variable types-Converting between data types	1	Chalk and talk, Quiz and assignment
	setting variable scope- verifying data types – declaring arrays & Dynamic arrays – Declaring Subroutines – Declaring functions	2	
	Handling strings – Converting strings to numbers and back again – Handling operators & operator precedence	1	
	Using if-else statements- Using select case –Looping – Handling higher math- Handling Dates and Times.	2	
Unit II	Text Boxes and Rich text Boxes- command buttons – checkboxes & option buttons –	2	Chalk and talk, Group discussion
	– list boxes and combo boxes – picture boxes and image controls	2	
	The timer control – The frame control – the label control – the shape control.	2	
Unit III	Visual Basic Menus: adding a menu to a form – modifying & deleting menu items	2	Chalk and talk, Quiz and assignment
	– creating sub menus – using Visual Basic predefined menus- Handling MDI forms & MDI child menus	1	
	creating & displaying popup menus	1	
	Adding & deleting menu items at runtime-	1	
	Toolbars, status bars, progress bars and cool bars.	1	
Unit IV	File handling and File Controls – Using DAO,RDO and ADO : Creating and managing databases with the visual data manager –	2	PPT, Chalk and talk, Quiz and assignment
	creating a table - Adding a Data control – opening a database with the data control,	1	
	Remote data control, ADO data control	1	
	connecting a databases using controls- working with database objects in code.	2	
Unit V	Creating an Active-x control – Designing Active-x control- Adding controls to an Active-x control-	2	PPT, Chalk and talk, Quiz and assignment
	Registering an Active-x control – Creating an Active-x Document	2	
	Active-x Document dll vs EXEs – Testing an Active-x Document.	2	

Learning Outcome Based Education & Assessment (LOBE)
Blue Print – Visual programming
Articulation Mapping – K Levels with Courses Learning Outcomes (CLOs)

BLUE PRINT FOR INTERNAL ASSESSMENT – I

S. No.	CLOs	K-Level	Section A		Section B		Section C (Either / or Choice)	Section D (Open Choice)
			MCQs		Short Answers			
			No. of Questions	K-Level	No. of Questions	K-Level		
1.	CLO 1	Up to K 2	2	K1 & K2	1	K1	2 (K1&K1)	1(K2)
2.	CLO 2	Up to K 3	2	K1 & K2	1	K2	2 (K2&K2)	1(K3)
No. of Questions to be asked			4		3		4	3
No. of Questions to be answered			4		3		2	2
Marks for each Question			1		2		5	10
Total Marks for each Section			4		6		10	30

BLUE PRINT FOR INTERNAL ASSESSMENT – II

S. No.	CLOs	K-Level	Section A		Section B		Section C (Either / or Choice)	Section D (Open Choice)
			MCQs		Short Answers			
			No. of Questions	K-Level	No. of Questions	K-Level		
3.	CLO 3	Up to K 4	2	K1 & K2	1	K2	2 (K3&K3)	1(K4)
4.	CLO 4	Up to K 3	2	K1 & K2	1	K1	2 (K3&K3)	1(K3)
No. of Questions to be asked			4		3		4	3
No. of Questions to be answered			4		3		2	2
Marks for each Question			1		2		5	10
Total Marks for each Section			4		6		10	30

Learning Outcome Based Education & Assessment (LOBE)
Blue Print – Visual programming
Articulation Mapping – K Levels with Courses Learning Outcomes (CLOs)

S. No.	CLOs	K-Level	Section A		Section B		Section C (Either / or Choice)	Section D (Open Choice
			MCQs		Short Answers			
			No. of Questions	K-Level	No. of Questions	K-Level		
1	CLO 1	Up to K-2	2	K1 & K2	1	K1	2 (K1&K1)	1(K2)
2	CLO 2	Up to K-3	2	K1 & K2	1	K2	2 (K2&K2)	1(K3)
3	CLO 3	Up to K-4	2	K1 & K2	1	K2	2 (K3&K3)	1(K4)
4	CLO 4	Up to K-3	2	K1 & K2	1	K1	2 (K3&K3)	1(K3)
5	CLO 5	Up to K-4	2	K1 & K2	1	K2	2 (K4&K4)	1(K3)
No. of Questions to be asked			10		5		10	5
No. of Questions to be answered			10		5		5	3
Marks for each Question			1		2		5	10
Total Marks for each Section			10		10		25	30

Distribution of Section-wise Marks with K Levels

K Levels	Section A (No Choice)	Section B (No Choice)	Section C (Either/or)	Section D (Open Choice)	Total Marks	% of Marks without choice	Consolidated
K1	5	4	10	-	**19**	15.83	**42%**
K2	5	6	10	10	**31**	25.83	
K3	-	-	20	30	**50**	41.67	**42%**
K4	-	-	10	10	**20**	16.67	**16%**
Total Marks	10	10	50	50	**120**	100.00	**100%**

Distribution of Unit-wise questions with K Levels

Section A	Section B	Section C	Section D
2 Questions for each Unit (K1 & K2 Level)	1 Question from each Unit (K1 & K2 Level)	2 Questions from Unit-I (K1 Level)	1Question from Unit-I (K2 Level)
		2 Questions from Unit-II (K3 Level)	1Question from Unit-II (K3 Level)
		2 Questions from Unit-III (K3 Level)	1Question from Unit-III (K4 Level)
		2 Questions from Unit-IV (K2 Level)	1Question from Unit-IV (K3 Level)
		2 Questions from Unit-V (K4 Level)	1Question from Unit-V (K3 Level)

K1 –Remembering and recalling facts with specific answers
K2 – Basic understanding of facts and stating main ideas with general answers
K3 – Application oriented – Solving Problems
K4 – Examining, analyzing, presentation and make interferences with evidences

COURSE OUTCOMES:

On the completion of the course the students will be able to

CLOs	COURSE OUTCOME	Knowledge Level (basis of Bloom's Taxonomy)
CO-1	Understand the basic concept of visual and front-end tool application	Up to K2
CO-2	Understand the concepts of MDI forms , Menu and frame controls	Up to K2
CO-3	Acquire the knowledge and creation of tool bars and its properties.	Up to K4
CO-4	Demonstrate the design and management of tables with ADO – DAO data controls.	Up to K4
CO-5	Understand the concepts and usage of Active-X ,its controls and testing of Active-x documents.	Up to K3

MAPPING OF COs WITH PSOs:

	PSO 1 (Knowledge Base)	PSO 2 (Problem Analysis & Investigation)	PSO 3 (Communication Skills & Design)	PSO 4 (Individual and Team Work)	PSO 5 (Professionalism Ethics and equity)	PSO 6 (Life Long Learning)
CO-1	3	1	1	2	1	1
CO-2	2	3	2	1	1	1
CO-3	2	3	1	1	1	2
CO-4	3	2	2	1	2	1
CO-5	2	2	2	3	2	1

3- Advanced Application 2- Intermediate 1- Introductory

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THE MADURA COLLEGE (Autonomous), MADURAI – 625 011

(AFFILIATED TO MADURAI KAMARAJ UNIVERSITY)

RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME : B.Sc., Computer Science **COURSE CODE : 20U3DAC3**

COURSE TITLE :Numerical Methods **QN.NO : 11211**

TIME : 3 Hours **MAX.MARKS :75**

COURSE OBJECTIVES:

This course is designed

* To impart the knowledge of computer arithmetic operations and
* To learn various numerical computational method

Units	Numerical methods	Total Hours: 90	K-levels
Unit -I	Algebraic and Transcendental Equations: Errors in numerical computation Iteration method-Bisection method-Regula-Falsi method-Newton-Raphson method-Horner's method.	18 hrs	Up to K2
Unit-2	Simultaneous Equations: Introduction-Simultaneous equations-Back substitution-Gauss Elimination method-Gauss –Jordan Elimination method Calculation of Inverse of a matrix- Iterative methods-Gauss Jacobi Iteration method-Gauss seidal Iteration method	18 hrs	Up to K3
Unit-3	Interpolation & Introduction: Newton's interpolation FormulaeCentral difference Interpolation formulae-Gauss forward, Gauss backward, Lagrange's interpolation formulae- Divided differencesNewton's divided difference formula-Inverse Interpolation.	18 hrs	Up to K3
Unit-4	Numerical Differentiation and Integration: Introduction-Derivates using Newton's forward difference formula-Derivates using Newton's backward difference formula- Numerical Integration- Simpson's 1/3rd rule-Simpson's 3/8 th rule.	18 hrs	Up to K4
Unit-5	Numerical Solution of Ordinary Differential Equations: Introduction-Taylor series method-Picard's method-Euler's method Range-kutta method of second, third, fourth order.	18 hrs	Up to K4

Books for Study:

1.Numerical Methods, Second Edition, S.Arumugam, A.ThangapandiIssac, A.Somasundaram, SCITECH publications, 2009.

Unit I : Chapter-3
Unit II : Chapter-4 (excluding Relation method and its related problems)
Unit III : Chapter-7 (Sections: 7.0, 7.1, 7.2((i), (ii) and related problems); 7.3,7.4,7.5,7.6) Unit IV : Chapter-8 (Sections: 8.0,8.1,8.2 related problems, 8.5 (excluding Weddles rule,

Booles rule, Romberg's method and related problems))

Unit V : Chapter-10 (Sections : 10.0,10.1,10.2,10.3(excluding modified Euler's method & its related problems) 10.4,10.5,10.6)

Books for Reference :

1. Mathews J.H. Numerical Method for Maths, Science and Engineering; PHI, New Delhi, 2001.
2. Iqbal H. Khan & Q. Hassan Numerical Methods for Engineers and Scientist - Galgotia Publications (P) Ltd., New Delhi - 1997.
3. M.K. Jain, S.R.K. Iyengar &R.K.Jain - Numerical Methods for Scientific andEngineering

Web resources:

1. https://www.math.ust.hk/~machas/numerical-methods.pdf
2. http://www.mi.sanu.ac.rs/~gvm/Teze/Numerical%20methods%20In%20Computational%20Engineering.pdf

Rationale for Nature of the course:

This course Numerical methods is needed to solve mathematical problems that lead to equations that cannot be solved analytically with simple formulas. Examples are solutions of large systems of algebraic equations, evaluation of integrals, and **solution** of differential equations. Knowledge gained with this course may be very useful to learn datamining techniques with AI.

Activities having direct bearing on Skill development / Employability /Entrepreneurship

- Seminar
- Assignment preparation
- Thinking and analysis on theoretical concepts

Pedagogy:

The teaching methods includes Chalk and talk, PowerPoint, demonstrations, assignments andsolving many assignment problems.

Lecture schedule:

Unit	Topics	Hrs	Mode
Unit I	Algebraic and Transcendental Equations: Errors in numerical computation Iteration method	6	Chalk and talk, Quiz and assignment
	Bisection method-Regula-Falsi method	6	
	Newton-Raphson method-Horner's method.	6	
Unit II	Simultaneous Equations: Introduction-Simultaneous equations-Back substitution-Gauss Elimination methodGauss	6	Chalk and talk, Group discussion
	Jordan Elimination method Calculation of Inverse of a matrix-Iterative methods	6	
	Gauss Jacobi Iteration method-Gauss seidal Iteration method	6	
Unit III	Interpolation & Introduction: Newton's interpolation Formulae-Central difference Interpolation formulae- -	6	Chalk and talk, Quiz and assignment
	Gauss forward, Gauss backward, Lagrange's interpolation formulae	5	
	Divided differences-Newton's divided difference formulaInverse Interpolation.	6	
Unit IV	Numerical Differentiation and Integration: Introduction-Derivates using Newton's forward difference formula- -	6	PPT, Chalk and talk, Quiz and assignment
	Derivates using Newton's backward difference formula-Numerical Integration-	6	
	Simpson's $1/3^{rd}$ rule-Simpson's 3/8 th rule.	6	
Unit V	Numerical Solution of Ordinary Differential Equations: Introduction	6	PPT, Chalk and talk, Quiz and assignment
	Taylor series method-Picard's method-Euler's method	6	
	Range-kutta method of second, third, fourth order.	6	

Learning Outcome Based Education & Assessment (LOBE)

Blue Print – Numerical methods

Articulation Mapping – K Levels with Courses Learning Outcomes (CLOs)

BLUE PRINT FOR INTERNAL ASSESSMENT – I

S. No.	CLOs	K-Level	Section A		Section B		Section C (Either / or Choice)	Section D (Open Choice)
			MCQs		Short Answers			
			No. of Questions	K-Level	No. of Questions	K-Level		
1.	CLO 1	Up to K 2	2	K1 & K2	1	K1	2(K1&K1)	1(K2)
2.	CLO 2	Up to K 3	2	K1 & K2	1	K2	2(K2&K2)	1(K3)
No. of Questions to be asked			4		3		4	3
No. of Questions to be answered			4		3		2	2
Marks for each Question			1		2		5	10
Total Marks for each Section			4		6		10	30

BLUE PRINT FOR INTERNAL ASSESSMENT – II

S. No.	CLOs	K-Level	Section A		Section B		Section C (Either / or Choice)	Section D (Open Choice)
			MCQs		Short Answers			
			No. of Questions	K-Level	No. of Questions	K-Level		
3.	CLO 3	Up to K 4	2	K1 & K2	1	K2	2 (K3&K3)	1(K4)
4.	CLO 4	Up to K 3	2	K1 & K2	1	K1	2 (K3&K3)	1(K3)
No. of Questions to be asked			4		3		4	3
No. of Questions to be answered			4		3		2	2
Marks for each Question			1		2		5	10
Total Marks for each Section			4		6		10	30

Learning Outcome Based Education & Assessment (LOBE)
Blue Print – Numerical methods
Articulation Mapping – K Levels with Courses Learning Outcomes (CLOs)

S. No.	CLOs	K-Level	Section A		Section B		Section C (Either / or Choice)	Section D (Open Choice
			MCQs		Short Answers			
			No. of Questions	K-Level	No. of Questions	K-Level		
1	CLO 1	Up to K-2	2	K1 & K2	1	K1	2 (K1&K1)	1(K2)
2	CLO 2	Up to K-3	2	K1 & K2	1	K2	2 (K2&K2)	1(K3)
3	CLO 3	Up to K-4	2	K1 & K2	1	K2	2 (K3&K3)	1(K4)
4	CLO 4	Up to K-3	2	K1 & K2	1	K1	2 (K3&K3)	1(K3)
5	CLO 5	Up to K-4	2	K1 & K2	1	K2	2 (K4&K4)	1(K3)
No. of Questions to be asked			10		5		10	5
No. of Questions to be answered			10		5		5	3
Marks for each Question			1		2		5	10
Total Marks for each Section			10		10		25	30

Distribution of Section-wise Marks with K Levels

K Levels	Section A (No Choice)	Section B (No Choice)	Section C (Either/or)	Section D (Open Choice)	Total Marks	% of Marks without choice	Consolidated
K1	5	4	10	-	**19**	15.83	**42%**
K2	5	6	10	10	**31**	25.83	
K3	-	-	20	30	**50**	41.67	**42%**
K4	-	-	10	10	**20**	16.67	**16%**
Total Marks	10	10	50	50	**120**	100.00	**100%**

Distribution of Unit-wise questions with K Levels

Section A	Section B	Section C	Section D
2 Questions for each Unit (K1 & K2 Level)	1 Question from each Unit (K1 & K2 Level)	2 Questions from Unit-I (K1 Level)	1Question from Unit-I (K2 Level)
		2 Questions fromUnit-II (K3 Level)	1Question from Unit-II (K3 Level)
		2 Questions from Unit-III (K3 Level)	1Question from Unit-III (K4 Level)
		2 Questions from Unit-IV (K2 Level)	1Question from Unit-IV (K3 Level)
		2 Questions from Unit-V (K4 Level)	1Question from Unit-V (K3 Level)

K1 –Remembering and recalling facts with specific answers
K2 – Basic understanding of facts and stating main ideas with general answers
K3 – Application oriented – Solving Problems
K4 – Examining, analyzing, presentation and make interferences with evidences

COURSE OUTCOMES:

On the completion of the course the students will be able to

COs	COURSE OUTCOME	Knowledge Level (basis of Bloom's Taxonomy)
CO-1	Understand the ideas related with computer arithmetic using numerical method concepts.	Up to K2
CO-2	Understand the concepts of iterative method and algorithm	Up to K3
CO-3	Demonstrate the concepts of interpolation and regression	Up to K3
CO-4	Demonstrate the concepts of Simpson's rule and integration formulae	Up to K4
CO-5	Acquire the knowledge related with numerical differentiation and integration.	Up to K3

MAPPING OF COs WITH PSOs:

Course Outcomes	PSO 1 (Knowled ge Base)	PSO 2 (Problem Analysis & Investigation)	PSO 3 (Communicati on Skills & Design)	PSO 4 (Individua l and Team Work)	PSO 5 (Professionalis m Ethics and equity)	PSO 6 (Life Long Learning)
CO-1	1	1	1	2	1	1
CO-2	2	3	2	1	1	1
CO-3	2	3	1	1	1	2
CO-4	3	2	2	1	2	1
CO-5	2	2	2	3	2	1

3- Advanced Application 2- Intermediate 1- Introductory

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THE MADURA COLLEGE (Autonomous), MADURAI – 625 011

(AFFILIATED TO MADURAI KAMARAJ UNIVERSITY)

RE-ACCREDITED (3rd Cycle) WITH "A" GRADE BY NAAC

PROGRAMME : NME - Computer Science **COURSE CODE : 20U3DNM1**

COURSE TITLE :Computer Fundamentals **QN.NO : 11213**

TIME : 3 Hours **MAX.MARKS :75**

COURSE OBJECTIVES:

Units	TOPICS	Total Hours: 30	K-Levels
Unit -I	**Characteristics of Computers** Block Diagram - Problem Solving Using Computers - Classification of Computers - Computing Models.	6 hrs	Up to K2
Unit-2	**Internal Representation** Representation of Characters, Integers & Fractions in Computers	6 hrs	Up to K2
Unit-3	**Number conversions** Hexadecimal Binary – Octal - Decimal - Programming Languages.	6 hrs	Up to K2
Unit-4	**Components** Functional Components of Computers - Input - Output Units	6 hrs	Up to K2
Unit-5	**Components** - Memory – CPU.	6 hrs	Up to K2

Books for Study:

V. Raja Raman - "Fundamentals of Computers"- II Edition – PHI – 1998.

Books for Reference :

1. Basantra – "Computers Today" - Galgotia Publications.
2. Roger-Hunt – "Computers &Commonsense " – BPB pub.

Web resources:

1. file:///C:/Users/cs/Downloads/FundamentalsofComputerStudies.pdf
2. https://www.tutorialspoint.com/computer_fundamentals/computer_fundamentals_tutorial.pdf

Rationale for Nature of the course:

This course deals with basic understanding of computers and software and it has an easier procedures for solving problems they may have encountered. For example, someone with experience of getting an error while logging in may realize the exact reasons and can solve it by an individual.

Activities having direct bearing on Skill development / Employability /Entrepreneurship

- Seminar
- Assignment preparation
- Discussion with on-hand training.

Pedagogy:

The teaching methods includes Chalk and talk, PowerPoint, demonstrations, assignments andon-

Lecture schedule:

Unit	Topic	Hrs	Mode
Unit I	Block Diagram	1	Chalk and talk, Quiz and assignment
	Problem Solving Using Computers	2	
	Classification of Computers	1	
	Computing Models	2	
Unit II	Representation of Characters,	3	Chalk and talk, Group discussion
	Integers & Fractions in Computers	3	
Unit III	Hexadecimal Binary	2	Chalk and talk, Quiz and assignment
	Octal - Decimal	2	
	Programming Languages	2	
Unit IV	Functional Components of Computers	3	Chalk and talk, Quiz and
	Input - Output Units	3	
Unit V	Memory	3	Chalk and talk, Quiz and
	CPU.	3	

Learning Outcome Based Education & Assessment (LOBE)

Blue Print – Computer fundamentals (CIA-I & II)

Articulation Mapping – K Levels with Courses Learning Outcomes (CLOs)

CLOs	K- Level	Section A		Section B		Section C	
		Short Answers		(Either/or Choice)		(Open Choice)	
		No. of Questions	K-Level	No. of Questions	K-Level	No. of Questions	K- Level
CLO x	Up to K2	1	K1	1	K2/K2	1	K1
CLO y	Up to K2	2	K1	1	K2/K2	2	K1
No. of Questions to be asked		3		2		3	
No. of Questions to be answered		3		2		2	
Marks for each question		2		7		10	
Total Marks for each section		**6**		**14**		**20**	

Distribution of Section-wise Marks with K Levels (CIA I & II)

K Levels	Section A (No Choice)	Section B (No Choice)	Section C (Either/or)	Section D (Open Choice)	Total Marks	% of Marks without choice	Consolidated %
K1	6	-	30	-	**36**	56.25	**100**
K2	-	28	-	-	**28**	43.75	
K3	-	-	-	-	**-**	-	**-**
K4	-	-	-	-	**-**	-	**-**
Total Marks	**6**	**14**	**30**	**-**	**64**	**100.00**	**100%**

Learning Outcome Based Education & Assessment (LOBE)

Blue Print – Computer fundamentals

Articulation Mapping – K Levels with Courses Learning Outcomes (CLOs)

Units	CLOs	K-Level	Section – A		Section – B		Section – C	
			Short Answers		(Either / or Choice)		(Open Choice)	
			No. of Questions	K-Level	No. of Questions	K-Level	No. of Questions	K-Level
1	CLO 1	Up to K2	1	K1	1	K2/K2	1	K1
2	CLO 2	Up to K2	1	K1	1	K2/K2	1	K1
3	CLO 3	Up to K2	1	K1	1	K2/K2	1	K1
4	CLO 4	Up to K2	1	K1	1	K2/K2	1	K1
5	CLO 5	Up to K2	1	K1	1	K2/K2	1	K1
No. of Questions to be asked			5		5		5	
No. of Questions to be answered			5		5		3	
Marks for each question			2		7		10	
Total Marks for each section			**10**		**35**		**30**	

Distribution of Section-Wise Marks with K Levels

K Levels	Section A (No Choice)	Section B (No Choice)	Section C (No Choice)	Section D (No Choice)	Total Marks	% of Marks (without choice)	Consolidated
K1	10	-	50	-	60	46.15	100
K2	-	70	-	-	70	53.85	
K3	-	-	-	-	-	-	-
K4	-	-	-	-	-	-	-
Total Marks	**10**	**35**	**50**	**-**	**130**	**100.00**	**100**

K1 –Remembering and recalling facts with specific answers
K2 – Basic understanding of facts and stating main ideas with general answers

COURSE OUTCOMES:

On the completion of the course the students will be able to

COs	COURSE OUTCOME	Knowledge Level (basis of Bloom's Taxonomy)
CO-1	To lean the function of computer using block diagram	K1
CO-2	To know the various types of computer models and its usage	Up to K2
CO-3	Learn the techniques of problem solving using computers	Up to K2
CO-4	Learn number systems and its conversion methods	Up to K4
CO-5	Know about various primary and secondary components of computers.	Up to K3
CO-6	Know about the types of memory and functions of CPU	Up to K3

MAPPING OF COs WITH PSOs:

Course Outcomes	PSO 1 (Knowledge Base)	PSO 2 (Problem Analysis & Investigation)	PSO 3 (Communication Skills & Design)	PSO 4 (Individual and Team Work)	PSO 5 (Professionalism Ethics and equity)	PSO 6 (Life Long Learning)
CO-1	3	3	3	2	3	2
CO-2	1	2	2	1	2	1
CO-3	3	3	3	3	3	2
CO-4	2	2	3	1	2	3
CO-5	2	2	3	2	2	3
CO-6	3	3	3	2	3	2

3- Advanced Application 2- Intermediate 1- Introductory

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