MANONMANIAM SUNDARANAR UNIVERSITY TIRUNELVELI

UG COURSES – AFFILIATED COLLEGES

B.C.A

(Choice Based Credit System)

(with effect from the academic year 2016-2017 onwards)

(44th SCAA meeting held on 30.05.2016)

| Sem. | Pt. | Sub. No. | Subject status | Subject Title | Hrs/ week | Cre- dits | Marks | | | | |
|------|---------------------------|-------------|--|---|--------------|--------------|---------|------|------|--------------------|------|
| | I/II/ III/ IV/ V | | | | | | Maximum | | | Passing minimum | |
| | | | | | | | Int. | Ext. | Tot. | Ext. | Tot. |
| III | III | 15 | Core – 3 | JAVA PROGRAMMING | 6 | 4 | 25 | 75 | 100 | 30 | 40 |
| | | 16 | Core – 4 | ESSENTIAL OF FINANCIAL ACCOUNTING | 6 | 4 | 25 | 75 | 100 | 30 | 40 |
| | | 17 | Major Practical – III | JAVA PROGRAMMING LAB | 6 | 4 | 50 | 50 | 100 | 20 | 40 |
| | | 18 | Allied -III | DATA STRUCTURE | 4 | 4 | 25 | 75 | 100 | 30 | 40 |
| | | 19 | Allied Practical – III | DATA STRUCTURE LAB | 2 | - | 50 | 50 | 100 | 20 | 40 |
| | IV | 20 | Skilled Based subject –I | DTP,PAGEMAKER, PHOTOSHOP | 4 | 3 | 25 | 75 | 100 | 30 | 40 |
| | IV | 21 | Non-Major Elective – I (Choose any one) | (A) INTRODUCTION TOINFORMATIONTECHNOLOGY(B)INTRODUCTION TOCOMPUTERS | 2 | 2 | 25 | 75 | 100 | 30 | 40 |
| | SUB- TOTAL | | | | 30 | 21 | | | | | |

| Sem. | Pt I/II/ III/ IV/V | Sub No. | Subject status | Subject Title | Hrs/ week | Cre - dits | Marks | | | | | |
|------|-----------------------------|------------|--|--|--------------|------------------|---------|------|------|--------------------|------|--|
| | | | | | | | Maximum | | | Passing minimum | | |
| | | | | | | | Int. | Ext. | Tot. | Ext. | Tot. | |
| IV | | 22 | Core - 5 | VISUAL BASIC | 6 | 4 | 25 | 75 | 100 | 30 | 40 | |
| | | 23 | Major Practical - IV | VISUAL BASIC LAB | 6 | 4 | 50 | 50 | 100 | 20 | 40 | |
| | III | 24 | Major Elective-I (Select any one) | (A) MICROPROCESSOR(B)ELECTRONICCOMMERCE(C)SYSTEMPROGRAMMING | 6 | 5 | 25 | 75 | 100 | 30 | 40 | |
| | | 25 | Allied - IV | RESOURCE MANAGEMENT TECHNIQUES | 4 | 4 | 25 | 75 | 100 | 30 | 40 | |
| | | 26 | Practical - IV | DATA STRUCTURE LAB | 2 | 2 | 50 | 50 | 100 | 20 | 40 | |
| | IV | 27 | Skilled Based subject - II | FLASH | 4 | 3 | 25 | 75 | 100 | 30 | 40 | |
| | IV | 28 | Non Major Elective-II (Choose any one) | (A) INTRODUCTION TO INTERNET & HTML (B) MSWORD | 6 | 2 | 25 | 75 | 100 | 30 | 40 | |
| | V | | Extension Activity | NCC,NSS, YRC, YWF | | 1 | | | | | | |
| | | | | SUB- TOTAL | 30 | 25 | | | | | | |

MSU/2016-17/UG-Colleges/Part-III (BCA) Semester-III / Ppr.no.15/Core - 3

JAVA PROGRAMMING

UNIT -I

Java language fundamentals: The building blocks of Java – Data types – Variable declarations – Wrapper classes – Operators and assignment – Control structures – Arrays – Strings.

UNIT-II

Java as an OOP language: Defining classes – Modifiers – Packages – Interfaces Exception handling: Introduction – Basics of exception handling in JAVA – Exception hierarchy – Constructors and methods in throwable classes – Unchecked and checked exceptions – Handling Exceptions in Java

UNIT-III

Multithreading: Creating threads – Thread life-cycle – Thread priorities and thread scheduling – Thread synchronization. File and I/O streams: Java I/O – File streams – File Input Stream and File Output Stream – Filter streams

UNIT-IV

Applets: Java applications versus Java applets – Applet Life-cycle – working with applets – the HTML APPLET tag. Database handling using JDBC: JDBC architecture – working with JDBC – Processing queries – Transaction commit and Rollback – Handling exceptions – Accessing Metadata

UNIT-V

The Abstract Window Toolkit: Basic classes in AWT – Drawing with graphics class – Class hierarchy of AWT – Event handling – AWT controls – Layout managers.

Text Book:

Object Oriented Programming through JAVA – P. Radha Krishna – Universities Press

Reference Books:

- *1*. Programming with Java C. Muthu
- 2. Programming with Java 2 C. XAVIER
- 3. Introduction to OOP through Java ISRD Group Tata McGraw hill
- 4. Programming with Java a primer 3/E E. BALAGURUSWAMY
- 5. The Complete Reference JAVA 25/ E HERBERT SCHILDT

MSU/2016-17/UG-Colleges/Part-III (BCA) Semester-III/Ppr.no.16/Core-4

ESSENTIALS OF FINANCIAL ACCOUTING

UNIT-I

Introduction to Accounting : Need for Accounting – Accounting as the language of business – Attributes and steps of Accounting – Book keeping Vs Accounting – Branches of Accounting – Methods of Accounting – Types of Accounting – Accounting Rules - Bases of Accounting – Accounting terminology

Basic Accounting Concepts: Meaning and classification of Accounting -Accounting Concepts – Accounting Conversion – Accounting equations

UNIT-II

Recording a Financial Data: Memorandum Book, business transaction, Journal, Rules for Debit and Credit, Compound Journal entry, Advantages of Journal, Ledger, Ledger Account, Ledger Posting, Process of Posting, Balancing of An Account, Significance of Balances, Relation between Journal and Ledger-Subsidiary Books

UNIT-III

Trial Balance: Objects, Methods of Preparing Trial balance, how to locate errors, hits for the preparation of trial balance & problems

UNIT-IV

Final accounts: Trading account – individual items posted to the debit of trading account – individual items credited to trading account – advantages of trading account – profit & loss account - advantages of profit & loss account- manufacturing account- balance sheet-classification of assets & liabilities.

UNIT-V

Accounts of non Profit organizations: Introduction – Final accounts of no trading concersreceipts and payments account – features- income & expenditure account – feature- distinction between the two – treatment of special items – some important adjustments – types of problems – Distinction between income and expenditure account and profit and loss account – accounts of professional men

Text Book:

1. Financial Accounting by T.S.Reddy, A.Murthy – Margham Publications, Chennai 2. Fundamentals of Advanced Accounting by R.S.N.Pillai, Bagavathi, S,Uma

Reference Books:

Essentials of Financial Accounting – by Asish K.Bhattacharayya, PHI Private Limited.
 Advanced Accountancy by S.P.Jain and Narang – Kalyani Publications, New Delhi

MSU/2016-17/UG-Colleges/Part-III (BCA) Semester-III/Ppr.no.17/Major Practical - III

JAVA PROGRAMMING LAB

1. Write a java program to find the area of Square, Rectangle, and Triangle by

a. Overloading Constructor b. Overloading Method

2. Define a class called student with data members name, Rollno, and age. Write a suitable constructor and method output () to display the details. Derive another class student 1 from the student with the data member's height and weight. Write a suitable constructor and method output () to display the details which overwrites the super class method output ().(Apply Method Overriding concepts)

3. Write a java program to create a package "Employee" which contains the classes Emp and Emppay. The data members of Emp are name, emp_id, category, and Bpay. Write suitable constructor and methods to compute the net pay of the employee. The class Emppay contains the main method.

4. Write a java program to create and Implement an Interface.

5. Write a java program to create a thread

b. Using Thread Class

6. Write a java program to Design a calculator to perform arithmetic operations.

7. Create an applet with four Checkboxes with labels and a Text area object. The program must display the details while clicking a particular checkbox.

8. Write a java program to demonstrate the use of choice box.

9. Write a java program, which creates a window with a checkbox group with boxes for the colors, violet, indigo, yellow, orange, red, blue and green. When the button is selected the background color must change accordingly

10. Write a java program to throw the following Exception

a. Negative Array Size b. Array Index Out OF Bounds

11. Write a java program to create a file menu with option New, Save and Close, Edit menu with option cut, copy, and paste

12. Write a java programming to illustrate Mouse Event Handling.

MSU/2016-17/UG-Colleges/Part-III (BCA) Semester-III/ Ppr.no.18/Allied - 3

DATA STRUCTURES

UNIT-I

Introduction: Pseudo code – The Abstract Data Type – A Model for an Abstract Data Type – Algorithms Efficiency.

Searching: List Searches – Hashed List Searches – Collision Resolution

UNIT-II

Linked Lists: Linear List Concepts - Linked List Concepts - Linked List Algorithms – Processing a Linked List – Complex Linked List Structures

UNIT-III

Stacks and Queues: Basic Stacks Operations – Stack Linked List Implementation – Stack Applications – Queue Operations – Queue Linked List Design

UNIT-IV

Trees: Basic Tree Concepts – Binary Tree - Binary Tree Traversals – Expression Trees- General Trees – Binary Search Trees – Heap definition – Heap Structure – Basic Heap Algorithm.

UNIT-V

Sorting And Graphs: General Sort Concepts – Quick sort – External sorts **Graphs:** Terminology – Operations – Graph storage Structure – Networks.

Text books:

Data Structures a Pseudo code Approach with C++, Richard F. Gilberg & Behrouz A forouzan, Thomsan Brooks / Cple.

Reference Books:

1. Fundamentals of Data Structures Eilis Horowitz & Sartaj GalGotia Publications

2. Data Structures & Algorithm in Java third edition – Adam Drozdek.

MSU/2016-17/UG-Colleges/Part-III (BCA) Semester-III & IV/Ppr.no.19/Allied Practical –III

DATA STRUCTURES LAB

- 1. Write a C++ program to implement sequential search and Binary search in array.
- 2. Write a C++ program to implement linked list and perform the following operations
 - a) Add a node as first node.
 - b) Add a node as last node.
- 3. Write a C++ program to implement linked list and implement the following Objects.
 - a) Delete the first node.
 - b) Delete the last node.
- 4. a. Write a C++ program to implement a stack linear list perform the push and pop Operations.
 - b. Write a C++ program to implement a queue using circular list and implement add and delete operations.
 - 5. Write a C++ program to implement binary tree using Linked and perform the following traversal
 - a. In order traversal
 - b. Pre order traversal
 - c. Post order traversal
- 6. Write a C++ program to implement graph using Adjacency matrix and perform the following operations
 - a. Depth first search
 - b. Breath first search
- 7. Write a C++ program to implement merge sort.
- 8.Write a C++ program to implement quick sort.

MSU/2016-17/UG-Colleges/Part-III (BCA) Semester -III / Ppr.no.20/Skill Based - I

SKILLED BASED SUBJECTS SYLLABUS

Skill based subjects are practical oriented; One hour should be assigned for tutorial class and three hours of practical to do the given practical list.

OPTIONAL – I

DTP

Samples should be provided to the students for designing the given list.

Page Maker

- 1. Design of ID card (3"X2") / Visiting card (3.5"X2").
- 2. Design of an attractive Invitation card (5.5"X8") / letter pad (7.5"X9").
- 3. Preparation of a small booklet with 6 pages (3.6"X4.5")
- 4. Design a handbill (5.5"X8.5") / advertisement.
- 5. Design your college progress card / a Receipt bill with counter foil.

Photoshop

- 1. Design of a brochure for an institution.
- 2. Seasonal greeting card.
- 3. Transporting an image from one background to another.
- 4. Design a web page poster (1004x750) / Textbook cover page.
- 5. Crop an image/ rotate an image.

MSU/2016-17/UG-Colleges/Part-IV (BCA) Semester-III/Ppr.no.21 (A)/Non Major Elective-1(A)

INTRODUCTION TO INFORMATION TECHNOLOGY

UNIT-I

Information Technology Basics: Introduction, Information, Technology, Information Technology, Present Scenario, Role of Information Technology, Information Technology and internet, Careers in IT Industry.

Computer Organization and Architecture: Central Processing Unit, inside a computer, Data representation in Computer, Coding Schemes.

UNIT-II

Computer Memory and Storage: Introduction, Memory Hierarchy, Random Access Memory (RAM), Read Only Memory (ROM), RAM, ROM and CPU interaction, Types of Secondary storage devices, Magnetic tape, Magnetic disk, types of magnetic disk, optical disk, type of optional disks.

UNIT -III

Input, Output Media: Introduction, types of input devices, types of output devices, Multimedia Essentials: Introduction, Multimedia definition, Building blocks of Multimedia, Multimedia system, Multimedia applications, Virtual reality.

UNIT-IV

The Internet: Introduction, Evolution of Internet – Basic Internet terms – Getting Connected to Internet – Internet Applications – Data over Internet.

Internet tools: Introduction – Web Browser – Browsing Internet using Internet Explorer – E-Mail – Search engines – Instant messaging.

UNIT -V

Emerging trends in IT: Introduction, E-Commerce – Electronic Data Interchange – Mobile Communication – Bluetooth – Global Positioning System – Infrared Communication – Smart Card – Imminent Technologies.

Text Book:

Introduction to computer and Information Technology, D.Glory Ratha Mary, S.Selvanayahi, Shekina Publications.

Reference Books:

1. Introduction to Information Technology ITL Education Solution Limited, Pearson Education.

2. Fundamental of Information Technology By Alexis Leaon & Mathews Leon Vikas Publication – New Delhi.

MSU/2016-17/UG-Colleges/Part-IV (BCA) Semester-III/Ppr.no.21(B)/Non Major Elective-1(B)

INTRODUCTION TO COMPUTERS

UNIT-I

Computer Basics: Introduction, Characteristics of Computers – Evolution of Computers, Generation of Computers, Classification of Computers, The Computer System, Application of Computers.

UNIT-II

Computer Organization and Architecture: Central Processing Unit, inside a computer, Data representation in Computer, Coding Schemes.

UNIT -III

Input/Output Units: Computer input units, Computer output units.

UNIT-IV

Computer Memory and Storage: Introduction, Memory Hierarchy, Random Access Memory (RAM), Read Only Memory (ROM), RAM, ROM and CPU interaction, Types of Secondary storage devices, Magnetic tape, Magnetic disk, types of magnetic disk, optical disk, type of optional disks.

UNIT-V

Operating System: Introduction, Operating System, Definition, Evolution of Operating System, Types of Operating System, Functions of Operating System.

Computer Software: Introduction, Computer Software, Definition, Categories of Software, Installing and Uninstalling software, Software piracy, Software terminologies.

Text Book:

Introduction to computer and Information Technology, D. Glory Ratha Mary, S. Selvanayahi, Shekina Publications.

Reference Books:

1. Introduction to computer, Peter Norton Tata McGraw Hill

2. Fundamental of Information Technology By Alexis Leaon & Mathews Leon Vikas Publication – New Delhi.

MSU/2016-17/UG-Colleges/Part-III (BCA) Semester-IV/Ppr.no.22/Core-5

VISUAL BASIC

UNIT-I

Getting started with Visual Basic 6.0: Introduction to Visual Basic, Visual Basic 6.0 Programming Environment, Working with Forms, Developing an Application, Variables, Data types and Modules, Procedure and Control Structures, Array in Visual Basic, Additional examples.

Working with Controls: Introduction, Creating and Using Controls, Working with Control Arrays, Additional examples.

UNIT-II

Menus, Mouse Events and Dialog Boxes: Introduction, Mouse Events, Dialog Boxes, Additional examples.Graphics, MDI and Flex Grid: Introduction, Graphics for Applications, Multiple Document Interface (MDI), using the flex Grid Control, Additional examples.

UNIT-III

ODBC and Data Access Objects: Evolution of Computer Architecture, Data Options, Additional examples.ODBC Using Data Access Objects and Remote Data objects: Open Database Connectivity (ODBC), Remote Data objects, Additional examples.

UNIT-IV

Data Environment and Data Report: Introduction, Data Environment Designer, Data Report, Additional examples.

Object Linking and Embedding: Introduction, OLE Fundamentals, Using OLE Container Controls, Using OLE Automation Objects, OLE Drag and Drop, Additional examples. **UNIT-V**

JNII-V Duilt in Active

Built – in Active X Controls: Working with Built – In Active X Controls, Additional examples. Working with Active X Data objects; An Overview of ADO and OLE DB, ADO Object Model, Additional examples.

Files and File System Controls: Introduction, File System Controls, Accessing Files, Interface with Windows, Additional examples.

Text Book:

Visual Basic 6.0 Programming – Content Development Group – Tata McGraw hill Publishing Company Limited, New Delhi.

Reference Books:

- 1. Microsoft Visual Basic 6.0 Professionals, Michael Halvorson PHI
- 2. Visual Basic 6 in Record Time by Steve Brown, BPB Publications.
- 3. Visual Basic 6 from the Ground UP Gary Cornell Tata McGraw hill

MSU/2016-17/UG-Colleges/Part-III (BCA) Semester-IV/Ppr.no.23/Major Practical -IV

VISUAL BASIC

- **1.** Design of an Analog Clock.
- 2. Design of a Desktop Calculator.
- 3. Design of a Color Mixer using basic colors.
- 4. Create an application to format text inside a text box.
- 5. Create an application using File controls and use two option buttons to show and hide a picture in the picture box.
- 6. Create an Application to do Matrix Addition using Flex Grid Control.
- 7. Create an Editor with File and Edit menus using Menu Editor Tool.
- 8. Create an MDI application with tile and cascade child forms.
- 9. Create an Application to implement OLE Drag and Drop
- 10. Create a mailing address database in Access and view the records using Data Control
- 11. Create a student database Application using ADO
- 12. Create a student database in Access and prepare a Report using Data Report Control

MSU/2016-17/UG-Colleges/Part-III (BCA) Semester-IV/Ppr.no.24 (A) /Major Elective-1(A)

MICROPROCESSOR

UNIT-I

Microprocessors, Microcomputer and Assembly Language: Microprocessors – Microprocessors Instruction set and Computer Languages – Computers to single chip microcontrollers.

Mention to 8085 assembly language Programming: The 8085 Programming model action Classification – Instruction, data format and storage – How to write, store and execute simple program, Overview of 8085 instruction set – Writing and assembling a program.

UNIT-II

Microprocessor Architecture and Micro Computer Systems: Microprocessor Architecture and its operations – Memory – Input and Output (I/O) – Example of a Micro Computer System. **Microprocessor Architecture and Memory interfacing:** The 8085 MPU – Example 8085 based microcomputer - Memory interfacing - Interfacing the 8155 memory

UNIT-III

Data transfer operation: Arithmetic operations – Logic operations – Branch operations – Writing assembling Language programs – Debugging a program.

Programming techniques with additional Instruction: Programming techniques – Counting and Indexing – Additional data transfer and 16 bit arithmetic operations – Arithmetic operations related to memory - Logic operations related to memory - Logic operations – Rotate – Dynamic debugging.

UNIT-IV

Counters and Time Delays: Counters Time Delays – Hexadecimal counter - Modulo ten counters – Pulse Wave forms – Debugging counter and time Delay programs.

Subroutine: Stack – Subroutine – Restart – Conditional call and Return subroutine concepts.

UNIT-V

BCD to Binary conversion – Binary to BCD conversion - BCD to seven segment LED code conversion – BCD addition – BCD Subtraction – Multiplication- Subtraction with carry.

Text Books:

1. Ramesh S. Goanker - Microprocessor Architecture Programming and Applications with the 8085 – 5th Edition, Penram International Publiser

2. Microprocessor and Microcontrollers N.Senthil Kumar, M.Saravanan, S.Jeevananthan. Oxford University Press.

Reference Book:

1.8085 Microprocessor Programming and Interfacing N.K.Srinath, PHI Publication.

MSU/2016-17/UG-Colleges/Part-III (BCA) Semester-IV/Ppr.no.24 (B)/Major Elective-1(B)

ELECTRONIC COMMERCE

UNIT-1

What is Electronic Commerce? – Types of Electronic Commerce Technology.

UNIT-II

Types of E-Business Models and Markets - Types of E-Commerce Providers and Vendors - E-Commerce website Creation

UNIT-III

Managing E-Commerce website Development – Building Shopping Cart Applications – Mobile Electronic Commerce.

UNIT-IV

Enhancing a web server with E-Commerce Application Development – Strategies, Techniques and tools – Implementing Merchandising Strategies – Implementing E-Commerce Databases

UNIT-V

Applying and Managing E-Business Intelligence Tools for Application Development – Types of Security Technologies – protocols for the Public Transport of Private Information

Text Books:

1. Electronic Commerce, by Pete Loshin and John Vacca, Fourth edition, Firewall Media, New Delhi.

2. E-Business Parag Kulkarni, Sunita Jahirabadkar, and Pradip Chande. Oxford University Press.

Reference Books:

1. Electronic Commerce, by Gary O.Schnelder James T.Perry, First edition 2000, Thomson Learning.

2. Electronic Commerce, by Elias M.Awad, Prentice Hall of India 2002.

MSU/2016-17/UG-Colleges/Part-III (BCA) Semester-IV/Ppr.no.24 (C) /Major Elective-1(C)

SYSTEM PROGRAMMING

UNIT -I ASSEMBLERS

General design procedure – design of assembler – statement of problem – Data structure – Format of database – Algorithm – Look for modularity – table processing – Searching and Sorting – Liner search – Binary search – Interchange sort – shell sort – Radix exchange sort – Address Calculation sort – Comparison of sorts – hash or random entry searching.

UNIT-II MACROLANGUAGE AND MACROPROCESSOR

Macro instructions – Features of macro facilities – Macro instruction arguments – conditional macro expansion – Macro calls within macro – macro instruction – defining macro – implementation – Two – pass – Algorithm – Single – pass – Algorithm – implementation of macro calls within macros – implementation within an assembler.

UNIT-III LOADERS

Loader schemes – Compile and Go General – Absolute Loaders – Subroutine Linkages – Relocating – Direct Linking Loader – Binders - Linking Loaders – Overlay – Dynamic binder – Design of an absolute Loader - Design of direct Linking Loader – specification of problem - specification of Data structure - Format of database – Algorithm.

UNIT -IV COMPILER

Statements of problem – recognizing basic elements – recognizing syntactic units and interpreting meaning – Intermediate form – storage allocation – Code generation – General model of compiler.

PHASES OF THE COMPILER

Lexical Phase – Syntax phase – Interpretation phase – optimization – storage assignment – code generation – assembly phase – passes of a compiler.

UNIT -V

Statement of problem – Implementation – Recursion, call and return statements – storage classes – use - static storage – Automatic storage – Internal controlled storage – External controlled storage – Based storage - Implementation – static storage – Automatic storage - controlled and based storage – Block structure – accessing information for block structure – storage allocation for block structure – Non – local Goto's – Interrupts – pointers.

Text Book:

John J.Donavan "System programming" Tata McGraw Hill Edition (1991)

Reference Book:

D.M.DHAMDDHERE "System programming and Operating system". Tata McGraw Hill Publishing Company Limited.

MSU/2016-17/UG-Colleges/Part-III (BCA) Semester-IV/Ppr.no.25/Allied-4

RESOURCE MANAGEMENT TECHNIQUES

UNIT-I

Linear Programming I: Introduction – Advantages and disadvantages of LP – Basic characteristics of LP – General linear Programming problem – Algebraic solution of a LP(Simplex Method), Linear Programming II: Duality in LPP – Dual Simplex method.

UNIT -II

Assignment Problem: Introduction – Definition and Mathematical formulation – Methods of solutions – Application area of AP – Comparison between AP and TP – Basic theorems – Hungarian method – Exceptional cases of AP – AP with restrictions – Multiple optimal solution of an AP.

UNIT -III

Job sequencing problems: Introduction, Basic terms and Notations used in Sequencing – Priority sequencing rules – Gantt Chart – Types of Job sequencing problems.

Network models: Introduction – Basic features of Network models – Main advantages of Network models – Network models – Minimum spanning tree algorithm – Shortest route problem – Maximum flow and minimum cost flow problems – Travelling salesman problem as a network model – Unifying model: Minimum cost flow network – Linear programming approach to a network model.

UNIT-IV

Project management: Introduction – Basic concepts – Project planning techniques – CPM & PERT techniques – Critical path method –The PERT approach – Expected length of a project - Probability of project completion by due date – cost consideration in project scheduling – similarities and differences in CPM & PERT.

UNIT -V

Game theory: Introduction – Definitions and Terminology – Basic game theory models – Fundamental Principles of game theory – Assumptions underlying game theory – Pure strategies: Games with saddle point – The rules of Dominance – mixed strategies: Games without saddle point – Solution of 2xn and mx2 Games(graphical approach) – Linear programming solutions of Games.

Inventory control: Fundamentals of Inventory theory – Basic terminology – Advantages & disadvantages of Inventory – formula for the quantity to order and lead time – EOQ with price-breaks.

Text Book:

Operations Research Models & Methods – Chandrasekhar Salimath, Bhupender parashar – Universities press 2014.

Reference Books:

 Operations Research – Nita H.Shah, Ravi M. Gor, Hardik Soni – PHI Learning Private Limited, New Delhi, 2009
 Operations Research – P.K.Gupta
 Operations Research - Taha

MSU/2016-17/UG-Colleges/Part-III (BCA) Semester-III & IV/Ppr.no.26/Allied Practical –III

DATA STRUCTURES LAB

- 1. Write a C++ program to implement sequential search and Binary search in array.
- 2. Write a C++ program to implement linked list and perform the following operations
 - c) Add a node as first node.
 - d) Add a node as last node.
- 3. Write a C++ program to implement linked list and implement the following Objects.
 - c) Delete the first node.
 - d) Delete the last node.
- 4. a. Write a C++ program to implement a stack linear list perform the push and pop Operations.
 - b. Write a C++ program to implement a queue using circular list and implement add and delete operations.
- 5. Write a C++ program to implement binary tree using Linked and perform the following traversal
 - d. In order traversal
 - e. Pre order traversal
 - f. Post order traversal
- 6. Write a C++ program to implement graph using Adjacency matrix and perform the following operations
 - a. Depth first search
 - b. Breath first search
- 7. Write a C++ program to implement merge sort.
- 8. Write a C++ program to implement quick sort.

MSU/2016-17/UG-Colleges/Part-III (BCA) Semester - IV /Ppr.no.27/ Skill Based - II

SKILLED BASED SUBJECTS SYLLABUS

Skill based subjects are practical oriented; One hour should be assigned for tutorial class and three hours of practical to do the given practical list.

OPTIONAL - 2

FLASH

- 1. Create a SIMPLE Presentation.
- 2. End a movie clip using script.
- 3. Start a graphic animation at a specific frame.
- 4. Text animation using motion twining
- 5. Activate a new window / page using buttons.
- 6. Bouncing ball with sound effect.
- 7. Create a scrolling gallery in a page

MSU/2016-17/UG-Colleges/Part-IV (BCA) Semester-IV/Ppr.no.28(A)/Non Major Elective-II (A)

INTRODUCTION TO INTERNET WITH HTML

UNIT-I

Introduction to Internet: Computer is business-networking-internet- e-mail-gopher-world wide web, Internet Technologies – Internet Browsers.

UNIT-II

Introduction to HTML: History of HTML - HTML generation and Documents – Tags and Links – Head and Body Section.

UNIT-III

Designing Body Section – Ordered and Unordered List – Table Handling

UNIT-IV

Introduction to DHTML: Features of DHTML – Defining styles – Working with Colors – Text and Fonts with Style.

UNIT-V

Frames – Frame set Definition – Nested frames – A web design project – forms.

Text Book:

World Wide Design with HTML by C.XAVIER – TMH Publications.

Reference Book:

Fundamental of the internet and the World Wide Web by Greenlaw and Hepp. TMH Publications.

MSU/2016-17/UG-Colleges/Part-IV (BCA) Semester-IV/Ppr.no.28(B)/Non Major Elective-II(B)

MS WORD

UNIT-I Introduction to Microsoft Word 2003

UNIT- II Creating a document in Microsoft Word 2003

UNIT -III Working with tables, Charts and Graphics – MAILMERGE.

UNIT- IV Additional Commands of Microsoft Word 2003

UNIT- V Menu Commands of Microsoft Word 2003

Text Book: Straight to the Point Microsoft Word 2003, Firewall Media

Reference Books:

 Gini Courter & Annette Marquls – Microsoft Office 2000 No Experience required, BPB Publications.
 Stephen L. Nelson - Office 2000: The complete reference, Tata McGraw Hill Publishing Company Limited.