KAKARAPARTI BHAVANARAYANA COLLEGE

(AUTONOMOUS)

Kothapeta, Vijayawada – 520 001

SYLLABUS (R20)

DEPARTMENT OF COMPUTER SCIENCE

KAKARAPARTI BHAVANARAYANA COLLEGE (Autonomous)

Department Of Computer Science & Applications

Class:	Semester	Title of The Paper	Paper Code:	W.E.F
I BCA	**I**	**Computer Fundamentals and Office Tools**	**R20BCA101**	**2020-2021**

Total No of Hours for Teaching - Learning	Instructional Hours for Week		Duration of Semester End Examination in Hours	Max Marks		Credits
60 Hours	Theory	Practical	3 Hours	CIA	SEE	
	4	3		25	75	

Course Objectives:

- To introduce the concepts of computer fundamentals and their applications for the efficient use of office technology in a business environment.
- To introduce the fundamentals of computing devices and reinforce computer vocabulary, particularly with respect to personal use of computer hardware and software.
- To provide hands-on use of Word, Excel and PowerPoint.

Course Outcomes:

- Describe the usage of computers and why computers are essential components in business and society.
- Identify categories of programs, system software and applications. Organize and work with files and folders.

- Compose, format and edit a word document and working with macros.
- Create work sheets and using various functions.
- Make presentations and inserting multimedia in them.

UNIT – I

Introduction: Characteristics of Computer, The evolution of Computers, The Computer Generations.

Basic Computer Organization: Input Unit, Output Unit, Storage Unit, Arithmetic Logic Unit, Control Unit, Central Processing Unit.

Secondary Storage Devices: Magnetic Disk, Optical Disk. Magneto optical Disk, Mass Storage Devices, Flash Drive and Other related Concepts.

UNIT – II

Computer Software: Types of Software, Logical systems Architecture, Acquiring Software, Software developmental Steps, Software Engineering.

Computer Languages: Machine Language, Assembly Language, High Level Language, Some High Level Languages, Characteristics of good Programming Language.

Operating Systems: What is an Operating System, Process Management, Some Popular Operating Systems.

UNIT –III

MS-Word: Features of MS-Word, MS-Word Window components, working with formatted text, Shortcut keys, Formatting documents: Selecting text, Copying & moving data, Formatting characters, changing cases, Paragraph formatting, Indents, Drop Caps, Using format painter, Page formatting, Header & footer, Bullets & numbering, Tabs, Forming tables. Finding & replacing text, go to (F5) command, proofing text (Spell check, Auto correct), Reversing actions, Macros, Inserting pictures, Hyperlinks, Mail merging, Printing documents.

UNIT IV

MS-Excel: Excel Features, Spreadsheets, workbooks, creating, saving & editing a workbook, Renaming sheet, cell entries (numbers, labels, and formulas), spell check, find and replace, Adding and deleting rows and columns Filling series, fill with drag, data sort, Formatting worksheet, Functions and its parts, Some useful Functions in excel (SUM, AVERAGE,

COUNT, MAX, MIN, IF), Cell referencing (Relative, Absolute, Mixed), What-if analysis Introduction to charts: types of charts, creation of charts, printing a chart, printing worksheet.

UNIT V

MS-PowerPoint: Features of PowerPoint, Uses, components of slide, templates and wizards, using template, choosing an auto layout, using outlines, adding subheadings, editing text, formatting text, using master slide, adding slides, changing color scheme, changing background and shading, adding header and footer, adding clip arts and auto shapes. Various presentation, Working in slide sorter view (deleting, duplicating, rearranging slides), adding transition and animations to slide show, inserting music or sound on a slide, viewing slide show, Printing slides.

Text Books:

Computer Fundamentals – Pradeep .K.Sinha: BPB Publications.

Fundamentals of Computers -ReemaThareja, Oxford University Press India

References:

Fundamentals of Computers – V. Rajaraman, Prentice Hall of India

Introduction to Computers – Peter Norton Mcgraw Hill.

BLUE PRINT

Class:	Semester	Title of The Paper	Paper Code:	W.E.F
I BCA	**I**	**Computer Fundamentals and Office Tools**	**R20BCA101**	**2020-2021**

SECTION A (5*5=25 Marks)

- 5 Questions to be answered out of 8 Questions
- 1 Question must be given from each Unit

SECTION B (5*10=50 Marks)

- 2 Questions must be given from each Unit with an internal choice

Illustration of Model Question Paper

	Section A	Section B
UNIT I	1	2
UNIT II	2	2
UNIT III	2	2
UNIT IV	2	2
UNIT V	1	2
	8	10

Class:	Semester	Title of The Paper	Paper Code:	W.E.F
I BCA	**I**	**Computer Fundamentals and Office Tools**	**R20BCA101**	**2020-2021**

Model paper

Section-A

Answer any Five of the following questions **5*5=25M**

1. Explain characteristics of computers
2. Define software? Write about various types of software?
3. Explain about process Management
4. How to insert header and footer in MS-Word
5. Explain macro's in MS-Word
6. Explain find &replace options in MS-Excel
7. Explain the features of MS-Excel
8. How to insert and delete a slides in power point presentation

Section-B

Answer ALL of the following questions **5*10=50M**

9. A) Explain generations of computers

(Or)

B) What is memory and explain secondary storage devices

10. A) Explain about computer languages

(Or)

B) Define operating system and Explain functions of operating system

11. A) Draw and explain components of MS-Word window

(Or)

B) Write the procedure of mail merge

12. A) Explain different types functions available in excel

(Or)

B) Explain about cell reference techniques

13. A) Explain procedure to create power point presentation

(Or)

B) Explain slide animation and transition in power point

Class:	Semester	Title of The Paper	Paper Code:	W.E.F
I BCA	**I**	**Computer Fundamentals and Office Tools**	**R20BCA101**	**2020-2021**

Practical Syllabus

List of Experiments

1) Design a visiting card for managing director of a company as per the following specification.

- Size of visiting card is 3 ½ ×2
- Name of the company with big font
- Phone number, Fax number and E-mail address with appropriate symbols.
- Office and Residence address separated by a line

2) Create a table with following columns and display the result in separate cells for the following

- Emp Name, Basic pay, DA, HRA, Total salary.
- Sort all the employees in ascending order with the name as the key
- Calculate the total salary of the employee
- Calculate the Grand total salary of the employee
- Find highest salary and
- Find lowest salary

3) Prepare an advertisement to company requiring software professional with the following

- Attractive page border
- Design the name of the company using Word Art
- Use at least one clipart.
- Give details of the company (use bullets etc)
- Give details of the Vacancies in each category of employee's (Business manager, Software engineers, System administrators, Programmers, Data entry operators) qualification required.

4) Create a letterhead of a company with the following specifications

- Name of the company on the top of the page 2 with big font and good style
- Phone no, Fax no and E-mail address with symbols.
- Main products manufactured by the company
- Slogans if any should be specify in bold at the bottom

5) Create two pages of curriculum vitae of a graduate with the following specifications

- Table to show qualifications with proper headings
- Appropriate left and right margins
- Format ½ page using two-column approach about your self
- Name on each page at the top right side
- Page no. in the footer on the right side.

6) Write a macro format document as below

- Line spacing "2" (double)
- Paragraph indent of 0.1
- Justification formatting style
- Arial font and Bold of 14 pt-size

7) Create a letter as the main document and create 10 records for the 10 persons use mail merge

to create letter for selected persons among 10.

8) Create an electronic spread sheet in which you enter the following decimal numbers and convert them into octal, Hexadecimal and binary numbers and vice-versa.

Decimal Numbers: 35,68,95,78,165,225,355,375,465

Binary Numbers: 101,1101,11101,11111,10001,11101111

9) Calculate the net pay of the employees following the conditions below.

	A	B	C	D	E	F	G	H	I
1	Employee Number	Employee name	Basic pay	DA	HRA	GPF	Gross pay	Income tax	Net pay
2									

DA: - 56% of the basic pay if Basic pay is greater than 20000 or else 44%.

HRA: - 15% of the Basic pay subject to maximum of Rs.4000.

GPF: - 10% of the basic pay.

INCOME TAX: - 10% of basic if Basic pay is greater than 20000.

Find who is getting highest salary & who is get lowest salary?

10) The ABC Company shows the sales of different product For 5 years. Create BAR Graph, 3D

and Pie chart for the following.

A	B	C	D	E	F
S.No.	Year	Pro 1	Pro 2	Pro 3	Pro 4
1	1989	1000	800	900	1000
2	1990	800	80	500	900
3	1991	1200	190	400	800
4	1992	400	200	300	1000
5	1993	1800	400	400	1200

11) Create a suitable examination database and find the sum of the marks (total) of each student and respective, class secured by the student.

Pass: if marks in each subject >=35

Distinction: if average >=75

First class: if average >=60 but <75

Second class: if average >=50 but less than 60

Third class: if average>=35 but less than 50

Fail: if marks in any subject <35

12) Enter the following data into the sheet.

Name	Department	Salary
Anusha	Accounts	12000
Rani	Engineering	24000
Lakshmi	Accounts	9000
Purnima	Marketing	20000
Bindu	Accounts	4500
Tejaswi	Accounts	11000
Swetha	Engineering	15000
Saroja	Marketing	45000

Sunitha	Accounts	5600
Sandhya	Engineering	24000
Harika	Marketing	8000

- Extract records for department in Accounts and Salary >10000
- Sort the data by salary with the department using “sort commands”.
- Calculate total salary for each department using Subtotals

13) Enter the following data into the sheet.

	Raju	Rani	Mark	Rosy	Ismail	Reshma
English	76	89	43	51	76	87
2nd Lang	55	85	78	61	47	33
Maths	65	82	34	58	52	65
Computers	45	91	56	72	49	56
Human Values	51	84	54	64	32	64

Apply the conditional formatting for marks

- 35 below Red
- 35 to 50 Blue
- 51 to 70 Green
- 71 to 100 Yellow

14) Create a presentation using templates.

15) Create a Custom layout or Slide Master for professional presentation.

16) Create a presentation with slide transitions and animation effects.

17) Create a table in PPT and apply graphical representation on it.

KAKARAPARTI BHAVANARAYANA COLLEGE (Autonomous)

Department Of Computer Science & Applications

Class:	Semester	Title of The Paper	Paper Code:	W.E.F
I BCA/B.Sc(MPCS,MECS,MSCS,MCCS,DATA SCIENCE,IOT)	**I**	**Programming with 'C'**	**R20BCA102/ R20-CSC101**	**2020-2021**

Syllabus

Total No of Hours for Teaching - Learning	Instructional Hours for Week		Duration of Semester End Examination in Hours	Max Marks		Credits
60 Hours	Theory	Practical	3 Hours	CIA	SEE	
	4	3		25	75	

Course Objectives: The objective of the course is to learn programming in 'C'.

Course Outcomes:

1. To understand the meaning and basic components of a programming language.
2. To learn about data types and operators.
3. To learn about decision making statements.
4. To Gain knowledge about functions.
5. To learn how to work with arrays.
6. To gain knowledge about strings.
7. To learn about structures.
8. To understand character arrays.
9. To understand the concept of pointers.
10. To understand the concept of files.

Unit I

Introduction to Algorithms and Programming Languages. Compiling Programs, Language Interpreters. Compiling your first program. Running your program .understanding your first

program, comments, variables, Data types, and Arithmetic Expressions: working with variables. Understanding Data types and constants, working with Arithmetic Expressions. The Assignment operators. The printf function. The scanf function.

Unit II

Decision making: The if statement, if else, Nested if statements, else if. The switch statement. The conditional operator program looping: for statement. Relational operators. Nested for loops, while statement, do statement. The break statement. The continue statement.

Working with Functions: Defining a Function-Arguments and Local variables. Returning Function Results. Function calling. Declaring Return Types and Argument types. Top Down programming. Functions and Arrays. The global variables. Automatic and static variables. Recursive Functions.

Unit III

Working with Arrays: Defining an array. Initializing Arrays. Character Arrays. Multidimensional arrays- variable length Arrays.

Strings: Creating string variable, string functions.

Unit – IV

Working with structures :Defining structure . Functions and structures . Initializing structures . Array of structures structures containing structures .structures containing Arrays. Structure variants . Character strings : Array of characters. variable length character strings . Escape characters .character strings, structures and arrays - character operations.

Pointers: Defining a pointer variable. Using pointers in Expressions. Pointers and structures (Exclude Linked List). Pointers and Functions. Pointers and Arrays. Operations on pointers. Pointers and Memory address.

Unit – V

Files: file manipulating functions, file opening modes, file creating.

TEXT BOOK:

1. “Computer Fundamentals and Programming in C” by REEMA THAREJA from OXFORD UNIVERSITY PRESS

REFERENCE BOOK:

1. E Balagurusamy: ―COMPUTING FUNDAMENTALS & C PROGRAMMING‖ – Tata McGraw- Hill, Second Reprint 2008, ISBN 978-0-07-066909-3.
2. Ashok N Kamthane: Programming with ANSI and Turbo C, Pearson Edition Publ, 2002.

3. Henry Mullish & Huubert L.Cooper: The Sprit of C, Jaico Pub. House,1996.

Class:	Semester	Title of The Paper	Paper Code:	W.E.F
I BCA/ B.Sc(MPCS,MECS,MSCS,MCCS,DATA SCIENCE,IOT)	**I**	**Programming with 'C'**	**R20BCA102/ R20-CSC101**	**2020-2021**

SECTION-A

(Instructions to the paper setter: Set minimum ONE question from each unit, max Eight from all.)

Answer any *five* of the following questions 5 x 5 = 25M

1. Explain different programming languages.
2. Explain data types in 'C'.
3. Explain different types of arrays with syntax.
4. Explain difference between while and do-while.
5. Explain I/O Functions.
6. What is recursion? Explain with example.
7. Write a program to swap of two strings.
8. Explain different types of translators.

SECTION-B

(Instructions to the paper setter: Set minimum ONE question from each unit, max Eight from all)

Answer ALL of the following questions 5x10=50M

9. A) Explain the structure of C.
   (OR)
   B) Explain different operators available in C
10. A) Explain different decision making statements.
    (OR)
    B) Write the difference between call by value and call by reference with example.
11. A) Write a program for addition of two matrices.
    (OR)
    B) Write different string functions.
12. A) Explain malloc(),calloc() with example.
    (OR)
    B) Explain the difference between structure and union with an example.
13. A) Explain different file handling functions.
    (OR)
    B) Write an example program using fwrite(),fread().

BLUE PRINT

Class:	Semester	Title of The Paper	Paper Code:	W.E.F
I BCA/ B.Sc(MPCS,MECS,MSCS,MCCS,DATA SCIENCE,IOT)	**I**	**Programming with 'C'**	**R20BCA102/ R20-CSC101**	**2020-2021**

SECTION A (5*5=25 Marks)

- 5 Questions to be answered out of 8 Questions
- 1 Question must be given from each Unit

SECTION B (5*10=50 Marks)

- 2 Questions must be given from each Unit with an internal choice

Illustration of Model Question Paper

	Section A	Section B
UNIT I	1	2
UNIT II	2	2
UNIT III	2	2
UNIT IV	2	2
UNIT V	1	2
	8	10

KAKARAPARTI BHAVANARAYANA COLLEGE (Autonomous)

Department Of Computer Science & Applications

Class:	Semester	Title of The Paper	Paper Code:	W.E.F
I BCA	**II**	**OBJECT ORIENTED ANALYSIS AND DESIGN**	**R20BCA201**	**2020-2021**

Syllabus

Total No of Hours for Teaching - Learning	Instructional Hours for Week		Duration of Semester End Examination in Hours	Max Marks		Credits
60 Hours	Theory	Practical	3 Hours	CIA	SEE	
	4	3		25	75	

Course Objectives:

- To provide a sound understanding of the fundamental concepts and historical evolution of the model.
- To facilitate a mastery of the notation and process of object-oriented analysis and design.

Course Outcomes:

By the end of the course, student will be able to:

- Have Knowledge in evolution and foundations of OO Model and its elements.
- Identify relationship between classes and objects.
- Know importance of classification and can identify classes and objects.
- Have basic knowledge of UML.

- Knowledge in syntax and semantics of UML.

UNIT I:

The Object Model-The Evolution of the Object Model: The generations of programming languages, The topology of Programming languages. Foundations of the Object Model: Object Oriented Analysis, Object Oriented design, Object Oriented Programming. Elements of the Object Model: Programming Paradigm(programming style), The Major and Minor Elements of the Object Models, Abstraction, Encapsulation, Modularity, Hierarchy(single inheritance, multiple inheritance, Aggregation), Static and Dynamic Typing, Concurrency, Persistence.

UNIT II:

Classes and Objects-The Nature of an Object: What is and what is not an Object, State, Behavior, and Identity. Relationships among Objects: Links, Aggregation. The Nature of a Class: Interface and Implementation, Class Lifecycle. Relationships among Classes: Association: Semantic Dependencies, Multiplicity, Inheritance, Polymorphism, Aggregation, Dependencies. The Interplay of Classes and Objects: Relationship between Classes and Objects, On Building Quality Classes and Objects: Measuring the Quality of an Abstraction, Choosing Operations, Choosing Relationships, Choosing Implementations.

UNIT III:

Classification-The Importance of Proper Classification: The Difficulty of Classification, The Incremental and Iterative Nature of Classification. Identifying classes and Objects: Classical and Modern Approaches. Object Oriented Analysis: Classical Approaches, Behavior Analysis, Domain Analysis, Use Case Analysis, CRC Cards, Informal English Description, Structured Analysis. Key Abstractions and Mechanisms: Identifying Key Abstractions: Refining Key Abstractions, Naming Key Abstractions. Identifying Mechanisms.

UNIT IV:

The Unified Modeling Language: Diagram Taxonomy: Structure Diagrams, Behavior Diagrams. The Use of Diagrams in Practice: Conceptual, Logical and Physical Models, The Role of Tools. The Syntax and Semantics of the UML: The Package Diagrams, Component Diagrams, Deployment Diagrams, Use Case Diagrams.

UNIT V:

The Syntax and Semantics of the UML: Activity Diagrams, Class Diagrams, Sequence Diagrams, Interaction Diagrams, Composite Structure Diagrams, State Machine Diagrams, Timing Diagrams, Object Diagrams, Communication Diagrams.

TEXT BOOK:

1. Object-Oriented Analysis and Design with Applications, 3rd Edition, By: Robert A. Maksimchuk, Bobbi J. Young, Grady Booch, Jim Conallen, Michael W. Engel, Kelli A. Houston, Pearson education.

REFERENCE BOOKS:

1.James Rumbaugh, Jacobson and Booch, Unified Modeling Language reference manual,PHI.

2. Ali Bahrami, Object oriented system development-using the unified modeling language, Tata McGraw Hill international edition, computer science series.

BLUE PRINT

Class:	Semester	Title of The Paper	Paper Code:	W.E.F
I BCA	**II**	**OBJECT ORIENTED ANALYSIS AND DESIGN**	**R20BCA201**	**2020-2021**

SECTION A (5*5=25 Marks)

- 5 Questions to be answered out of 8 Questions
- 1 Question must be given from each Unit

SECTION B (5*10=50 Marks)

- 2 Questions must be given from each Unit with an internal choice

Illustration of Model Question Paper

	Section A	Section B
UNIT I	1	2
UNIT II	2	2
UNIT III	2	2
UNIT IV	2	2
UNIT V	1	2
	8	10

Class:	Semester:	Title of The Paper:	Paper Code:	W.E.F
I BCA	**II**	**OBJECT ORIENTED ANALYSIS AND DESIGN**	**R20BCA201**	**2020-2021**

Model Paper

Section – A

Answer Any FIVE of following **5 x 5 = 25M**

1. Explain about the Abstraction?
2. Explain about the Elements of abject Model?
3. What is the main advantage of object oriented development?
4. Explain about the object relationships and associations?
5. When to use CRC cards?
6. Discover the major difference between the component diagram and the Deployment Diagram?
7. Explain about package Diagrams?
8. Explain about State Machine Diagram?

Section - B

Answer ALL of the following **5 x 10 = 50M**

9. A) Explain about the foundation of object Model

   (OR)

   B) Explain about the Major and Minor Elements of the object Model
10. A)How could u make the relationships among objects?

    (OR)

    B)Explain about Class LifeCycle?
11. A) Explain the importance of proper classification?

    (OR)

    B)Explain about the Object Oriented Analysis?
12. A)Explain about the Diagram Toxonomy?

    (OR)

    B)Explain about Key Abstractions and Mechanisms?
13. A)Explain about the Activity Diagram and the Class Diagram in Detail?

    (OR)

    B)Explain about the object diagram and the Communication Diagram with example?

Class:	Semester	Title of The Paper	Paper Code:	W.E.F
I BCA	**II**	**UML LAB**	**R20BCA201P**	**2020-2021**

List of Lab Experiments

1. Demonstrate Package Diagram for Hydroponics Gardening system.
2. Demonstrate Component Diagram for the Environmental control system.
3. Demonstrate Deployment Diagram for Environmental control system.
4. Identify Use Cases and develop the Use Case Diagram for Hydroponics Gardening system.
5. Demonstrate Activity Diagram for Hydroponics Gardening system.
6. Demonstrate Class Diagram for the Environmental control system.
7. Demonstrate sequence diagram Environmental controller system.
8. Demonstrate sequence diagram for returning and removing books for the library system
9. Demonstrate use case for returning book with fine for library system.
10. Draw the State Machine Diagram for the Duration Timer.
11. Draw the Interaction Diagram for Library system.
12. Draw the Composite structure diagram for the Hydroponics Gardening system's water tank.
13. Draw the Timing Diagram for a valve object that is controlled to fill the Water storage tank object in Hydroponics Gardening system.
14. Demonstrate Object Diagram for the library system.
15. Draw the Communication Diagram for the Hydroponics Gardening system.

KAKARAPARTI BHAVANARAYANA COLLEGE (Autonomous)

Department Of Computer Science & Applications

Class:	Semester:	Title of The Paper:	Paper Code:	W.E.F
I BCA/ B.Sc(DATA SCIENCE,IOT)	**II**	**Data structures**	**R20BCA202/ R20-DSIOT201**	**2020-2021**

Syllabus

Total No of Hours for Teaching - Learning	Instructional Hours for Week		Duration of Semester End Examination in Hours	Max Marks		Credits
60 Hours	Theory	Practical	3 Hours	CIA	SEE	
	4	3		25	75	

COURSE OBJECTIVES:

1 To impart the basic concepts of data structures and algorithms

2 To understand concepts about searching and sorting techniques

3 To understand basic concepts about stacks, queues, lists, trees and graphs

4 To understanding about writing algorithms and step by step approach in solving problems with the help of fundamental data structures.

COURSE OUTCOMES:

1. Ability to analyze algorithms and algorithm correctness.
2. Ability to summarize searching and sorting techniques
3. Ability to describe stack, queue and linked list operation.
4. Ability to have knowledge of tree and graphs concepts

Unit I 14Hrs

Overview: Introduction, basic terminology, elementary data organization, data structures, data structures operations, algorithms: complexity, time-space tradeoff, algorithmic notations, Searching: linear search and binary search.

Unit II 10Hrs

Sorting: Bubble Sort – Selection Sort – Insertion Sort, Quick Sort and merge sort.

Unit III 15Hrs

Stacks, Queues: introduction, Stacks, arrays representation of stacks, arithmetic expression: polish notation, Queue and its types.

Linked List: introduction, linked list, traversing a linked list, searching a linked list, memory allocations and garbage collection, insertion and deletion in a linked list, two-way list

UNIT IV 10Hrs

Recursion: recursion, tower of Hanoi, implementation of recursive procedure of stacks Arithmetic Notation.

Linked representation: Linked representation of stacks and queues,

Unit V 11Hrs

Trees : Tree Terminology, Tree Traversals, searching, deleting and inserting in binary search trees, heap sort, general trees.

Graphs: introduction, terminology, Traversing a graph BFS, DFS.

Prescribed Text Book:

1. Data Structures by Lipschutz- Shaum's Outline Series

Reference: Data Structures and Algorithms in Java- Robert Laford.

BLUE PRINT

Class:	Semester:	Title of The Paper:	Paper Code:	W.E.F
I BCA/ B.Sc (DATA SCIENCE,IOT)	**II**	**Data structures**	**R20BCA202/ R20-DSIOT201**	**2020-2021**

SECTION A (5*5=25 Marks)

- 5 Questions to be answered out of 8 Questions
- 1 Question must be given from each Unit

SECTION B (5*10=50 Marks)

- 2 Questions must be given from each Unit with an internal choice

Illustration of Model Question Paper

	Section A	Section B
UNIT I	1	2
UNIT II	2	2
UNIT III	2	2
UNIT IV	2	2
UNIT V	1	2
	8	10

Class:	Semester:	Title of The Paper:	Paper Code:	W.E.F
I BCA/ B.Sc (DATA SCIENCE,IOT)	**II**	**Data structures**	**R20BCA202/ R20-DSIOT201**	**2020-2021**

MODEL PAPER

SECTION-A

Answer any five of the following question 5 x 5 = 25M

1. What is Data Structure? Explain data structure operations.
2. Explain complexity, time-space trade off.
3. Explain linear search with an example.
4. Explain bubble sort with an example.
5. Explain different types of queues.
6. What is recursion? Write a program to find the factorial of given number.
7. Explain the following
   a. Root b. leaf c. Sub tree
8. Write an algorithm for BFS with example.

SECTION-B

Answer ALL of the following questions 5 x 10 = 50M

9. A) What is an array? Explain types of arrays.
   (OR)
   B) Explain selection sort on the given data
   23, 45, 12, 3, 4, 17, 34
10. A) Write a program to search an element using binary search.
    (OR)
    B) Explain Linked list operations.
11. A) What is stack? Explain stack operations.
    (OR)
    B) Define Recursion, Write an algorithm for towers of Hanoi and explain.
12. A) Explain Quick sort with example.
    (OR)
    B) Convert the given arithmetic expression into postfix expressions.
    (A + B) * C / (D - E) * F / G + H
13. A) Write a C program for traversing a BST
    (OR)
    B) Explain DFS algorithm with example.

KAKARAPARTI BHAVANARAYANA COLLEGE (Autonomous)

Department Of Computer Science & Applications

Class:	Semester:	Title of The Paper:	Paper Code:	W.E.F
I B.Sc(MPCS,MECS,MSCS,MCCS)	**II**	**PROGRAMMING with JAVA**	**R20-CSC201**	**2020-2021**

Syllabus

Total No of Hours for Teaching - Learning	Instructional Hours for Week		Duration of Semester End Examination in Hours	Max Marks		Credits
60 Hours	Theory	Practical	3 Hours	CIA	SEE	
	4	3		25	75	

Course Objectives: The objective of the course is to introduce the concepts of OOPS.

Course Outcomes:

To learn Object-Oriented programming concepts and techniques using the Java programming language. To learn to write, test, and debug introductory level Object-Oriented programs using Java. In addition, the student will be introduced to the following concepts, which are important workforce activities:

- Design/Develop Program
- Design classes ,interfaces, packages
- Design the applet programs
- Understanding Inheritance.

Unit – I: Java Fundamentals

Fundamentals of Object Oriented programming*:*

Java Features – How Java differs from C and C++ , Simple Java Program – Java Program Structure – Java Tokens, Implementing a Java Program – Java Virtual Machine – Command Line Arguments. Constants, Variables and Data types: Constants – Variables – Data types – Scope of Variables, Type Casting.

Operators and Expressions: Arithmetic Operators – Relational Operators -Logical Operators – Assignment Operators – Increment and Decrement Operators – Conditional Operators – Bitwise Operators – Special Operators – Arithmetic Expressions – Operator Precedence and Associativity.

Unit-II

Decision Making and looping: Decision Making with If statement – Simple If Statement- If else Statement- Nesting If Else Statement- the Else If Ladder,-The switch Statement – The ?: operator. The while statement – The do statement – The for statement

Classes : Objects and Methods: Defining a Class – Fields Declaration – Methods Declaration – Creating Objects – Accessing class members – Constructors – Methods Overloading – Static Members – Nesting of Methods – Inheritance – Overriding Methods – Final Variables and Methods – Final Classes – Abstract Methods and Classes – Visibility Control.

Arrays, Strings and Vectors: One dimensional Arrays, creating an Array – Two dimensional Arrays – Strings – Vectors – Wrapper Classes – Enumerated Types.

Unit – III: Packages and Interfaces in Java

Interfaces: Multiple Inheritance : Defining Interfaces – Extending Interfaces – Implementing Interfaces – Accessing Interface Variables.

Packages: Java API Packages – Creating Packages – Accessing a Package – Using a Package – Adding a Class to a Package

Multithreaded Programming: Creating Threads – Extending the Thread Class – Stopping and Blocking a Thread – Life Cycle of a Thread – Using Thread Methods – Thread Exceptions – Thread Priority

Managing Errors and Exceptions: Types of Errors – Exceptions – Syntax of Exception Handling Code – Multiple Catch Statements – Using Finally Statement – Throwing our own Exceptions

Unit- IV

Applet Programming: How Applets differ from Applications – Preparing to write Applets – Building Applet Code – Applet Life Cycle – Creating an executable Applet – Designing a

Web Page – Applet Tag – Adding Applet to HTML file – Running the Applet – Passing parameters to Applets – Aligning the display – Displaying Numerical Values – Getting Input from the user.

Prescribed text books:

1. E. Balaguruswamy, Programming with Java, A primer, 3e, TATA Mc Graw Hill Company (2008).

References:

1. John R. Hubbard, Programming with Java, Second Edition, Schaum' soutline Series, Tata Mc Grawhill (2007).
2. Timothy Budd, Understanding Object Oriented Programming with Java, Pearson Education (2007).

BLUE PRINT

Class:	Semester:	Title of The Paper:	Paper Code:	W.E.F
I B.Sc (MPCS,MECS,MSCS,MCCS)	**II**	**PROGRAMMING with JAVA**	**R20-CSC201**	**2020-2021**

SECTION A (5*5=25 Marks)

- 5 Questions to be answered out of 8 Questions
- 1 Question must be given from each Unit

SECTION B (5*10=50 Marks)

- 2 Questions must be given from each Unit with an internal choice

Illustration of Model Question Paper

	Section A	Section B
UNIT I	1	2
UNIT II	2	2
UNIT III	2	2
UNIT IV	2	2
UNIT V	1	2
	8	10

Model Question paper

Class:	Semester:	Title of The Paper:	Paper Code:	W.E.F
I B.Sc (MPCS ,MECS, MSCS, MCCS)	**II**	**PROGRAMMING with JAVA**	**R20-CSC201**	**2020-2021**

SECTION-A

Answer any five of the following question 5 x 5 = 25M

1. Difference between java and c?
2. Explain java program structure
3. Explain data types in java.
4. Explain different types of arrays
5. Explain Visibility Controls in Java.
6. How can we create a class and object in java with an example.
7. Explain polymorphism in java with an example.
8. Explain procedure to create and run applet.

SECTION-B

Answer ALL of the following questions 5 x 10 = 50M

9. A) Explain different types of operators in Java
   (OR)
   B) Explain OOP concepts.

10. A) Explain Constructors with example.
    (OR)
    B) Explain Control structures in java

11. A) What is a vector? Explain vector class methods with an example.
    (OR)
    B) Explain different types of inheritances in java.

12. A) What is Thread? Explain thread life cycle methods with example.
    (OR)
    B) Explain procedure to create user defined packages in java.

13. A) What is Exception? How can we define user defined exception with an example?
    (OR)
    B) Explain applet life cycle with an example.

KAKARAPARTI BHAVANARAYANA COLLEGE (Autonomous)
Department Of Computer Science & Applications

Class:	Semester:	Title of The Paper:	Paper Code:	W.E.F
I BCom(comp)	I	INFORMATION TECHNOLOGY	R20COMC103	2020-21

Syllabus

Total No of Hours for Teaching – Learning	Instructional Hours for Week		Duration of Semester End Examination in Hours	Max Marks		Credits
60 Hours	Theory	Practical	3 Hours	CIA	SEM	
	5	3		25	75	

Course Objectives: -Give students an in-depth understanding of why computers are essential components in business, education and society.

Outcomes for the course

Upon completion of the course students will be able to:

1. Recognize when to use each of the Microsoft Office programs to create professional and academic documents.
2. Use Microsoft Office programs to create personal, academic and business documents following current professional and/or industry standards.
3. Apply skills and concepts for basic use of computer hardware, software, networks, and the Internet in the workplace and in future coursework as identified by the internationally accepted Internet and Computing Core (IC3) standards.

UNIT I

Introduction to computers: Definition, Characteristic and limitation of computers

Elements of Computer-Hardware-CPU-Primary and Secondary Memory-Input and Output devices.IT enabled services-BPO, KPO, Call centers.

Modern communications:(Concepts only)-communication-FAX, Voice mail, and information services-E Mail-Creation of email id-group communication-Tele conferencing-Video Conferencing-Network-topologies-Network types LAN, MAN, WAN

UNIT-II:

Operating System and windows: Operating System: meaning, Definition, functions and types of operating Systems-Booting Process-Disk Operating System: Internal and external Commands-Wild Card Characters-Computer Virus, Cryptology.

Windows operating system-Desktop, Start menu, control panel, Windows accessories

UNIT-III:

MS OFFICE I: MS Word: Word Processing: Meaning and features of word processing-Toolbars-Creating, Saving and closing a document -Opening and editing a document-Moving and copying text-Text and paragraph formatting, applying Bullets and Numbering-Find and Replace-Insertion of objects, Date and time, Headers, Footers and page breaks-Auto Correct-Spelling and Grammar Checking-Graphics, Templates and wizards-Mail Merge: Meaning, purpose and advantages-creating merged letters, mailing labels, -Format Painter

UNIT-IV

MS EXCEL: Features of MS Excel-Spread sheet, worksheet, workbook, cell, , cell address etc., -Parts of MS Excel window-Saving, Opening and Closing Workbook-Insertion and deletion of worksheet-Entering and editing data in worksheet-cell range-Formatting-Auto Fill-Formulas and its advantages of functions, different types of functions available in Excel-Templates-Charts-Graphs-Macros: Meaning and Advantages of Macros, Creation, Editing and deletion of macros-Data Sorting, Filtering, Validation, Pivot table and pivot chart Reports.

UNIT-V

MS PowerPoint: Features, Advantages and application of MS Power Point-Parts of MS Power Point Window- and manually-slide show-saving, opening and closing a presentation-Insertion of Objects and Charts in slides-Custom Animation and Transition Multimedia: Meaning, purpose, Usage and application-Images, Graphics, Sounds and music-Video presentation devices-Multimedia on web

References:

1.information Technology : Dennis P. Curtin, McGraw Hill International

2.fundamentals of Computers : P. Mohan, Himalaya Publishing House

3.Fundamentals of Computers : Atul Kahate, Tata McGraw Hill

4.Fundamentals of computers : V. Srinivas, Kalyani Publications

5.MS Office : Sanjay Saxsena

6.MS Office : BPB Publications

BLUE PRINT

Class:	Semester:	Title of The Paper:	Paper Code:	W.E.F
I BCom(comp)	I	INFORMATION TECHNOLOGY	R20COMC103	2020-21

SECTION A (5*5=25 Marks)

- 5 Questions to be answered out of 8 Questions
- 1 Question must be given from each Unit

SECTION B (5*10=50 Marks)

- 2 Questions must be given from each Unit with an internal choice

Illustration of Model Question Paper

	Section A	Section B
UNIT I	1	2
UNIT II	2	2
UNIT III	2	2
UNIT IV	2	2
UNIT V	1	2
	8	10

KAKARAPARTI BHAVANARAYANA COLLEGE (Autonomous)
Department Of Computer Science & Applications

Class:	Semester:	Title of The Paper:	Paper Code:	W.E.F
I BCom(comp)	I	INFORMATION TECHNOLOGY	R20COMC103	2020-21

MODEL PAPER

SECTION – A

Answer any *five* of the following questions **5 x 5 = 25M**

1. Explain characteristics of computers.
2. Explain the procedure for creating E-MAIL ID.
3. Write about Control Panel.
4. Explain features of MS-WORD?
5. Explain about Auto Fill option in MS -Excel.
6. Explain features of power point.
7. Explain Views in power point.
8. Explain Spelling and Grammar in MS-word?

SECTION-B

Answer ALL of the following questions **5 x 10 = 50M**

9. A) Explain Different types of Memories.

   (OR)

   B) Explain different types of network topologies.
10. A) Explain DOS Internal Commands.

    (OR)

    B) Explain different types of Operating Systems.
11. A) Explain Header and Footer in MS WORD?

    (OR)

    B) Explain Mail Merge Option in MS WORD.
12. A) Explain types of charts in MS Excel.

    (OR)

    B) Explain PIVOT table in MS Excel.
13. A) Explain Parts of Power Point Window.

    (OR)

    B). Explain Working with Multi Media Objects in Power Point.

KAKARAPARTI BHAVANARAYANA COLLEGE (Autonomous)
Department Of Computer Science & Applications

Class:	Semester:	Title of The Paper:	Paper Code:	W.E.F
I BCOM COMP	II	E-COMMERCE&WEB DESIGNING	R20COMC203	2020-21

Syllabus

Total No of Hours for Teaching - Learning	Instructional Hours for Week		Duration of Semester End Examination in Hours	Max Marks		Credits
60 Hours	Theory	Practical	3 Hours	CIA	SEM	
	5	3		25	75	

- **Course Objectives:** Assess e-commerce strategies and applications, including online marketing, global e-commerce and the basics of HTML, CSS and JAVASCRIPT languages.
- **Course Outcomes:**

1. Insert a graphic, table, form, links within a web page.
2. Use cascading style sheets.
3. Create, validate a web page.
4. Ability to build a website.
5. Use operators, variables, arrays, control structures, functions and objects in JavaScript.
6. Use regular expressions for form validation.

UNIT-I

E commerce: Meaning, advantages and limitations, applications of E commerce- trading stocks online, ordering products/journals/books etc., online, travel and tourism services, employment placement and job market, internet banking auctions, online publishing, advertising-Online payment system.

UNIT-II

HTML: Overview of HTML, Formatting text, Adding Graphics, Creating Tables, Setting Body and background attributes, Frame-set.

UNIT-III

Cascading Style Sheets: Introduction, Defining your own styles, properties and values in styles, Formatting blocks of information.

UNIT-IV

Java Script: Data Types, Functions, Operators, Control Flow Statements, DOM (Document Object Model), Events and Event Handling.

UNIT-V

Dynamic HTML with Java Script: Data validation, Opening a new window, Messages and Confirmations, Status bar, Writing to a different frame, Rollover Buttons, Moving Images.

References:

E commerce : CSV Murthy,Himayalaya Publishing House

Chris Bates, Web Programming Building Internet Application, Second Edition, Wiley (2007)

Head First Servlets and JSP 2nd Edition, Bryan Basham, Kathy Sierra

BLUE PRINT

Class:	Semester:	Title of The Paper:	Paper Code:	W.E.F
I BCom(comp)	II	E-COMMERCE &WEB DESIGNING	R20COMC203	2020-21

SECTION A (5*5=25 Marks)

- 5 Questions to be answered out of 8 Questions
- 1 Question must be given from each Unit

SECTION B (5*10=50 Marks)

- 2 Questions must be given from each Unit with an internal choice

Illustration of Model Question Paper

	Section A	Section B
UNIT I	1	2
UNIT II	2	2
UNIT III	2	2
UNIT IV	2	2
UNIT V	1	2
	8	10

KAKARAPARTI BHAVANARAYANA COLLEGE (Autonomous)
Department of Computer Science & Applications

Class:	Semester:	Title of The Paper:	Paper Code:	W.E.F
I BCom(comp)	II	E-COMMERCE &WEB DESIGNING	R20COMC203	2020-21

SECTION – A

Answer any *five* of the following questions **5 x 5 = 25M**

1. Explain Advantages of E-Commerce
2. Explain how to Adding Graphics in HTML.
3. Explain the procedure Formatting Text in HTML.
4. Explain how to define your own Styles
5. Explain Data Types in Java Script.
6. Explain Operators available in Java Script.
7. Write about Data Validation.
8. Explain Messages and Confirmations in Java Script.

SECTION-B

Answer ALL of the following questions **5 x 10 = 50M**

9. A) Explain Applications of E-Commerce.

   (OR)

   B) Write about Internet Banking.
10. A) Explain Working with Tables in HTML.

    (OR)

    B) Explain Frame Set in HTML with Example.
11. A) Explain Types of CSS.

    (OR)

    B) Explain Formatting blocks of Information.
12. A) Explain Control Flow Statements in Java Script.

    (OR)

    B) Explain Event Handling with an example.
13. A) Explain Rollover Buttons.

    (OR)

    B). Explain Moving Images with an example.