

P. R. GOVT. COLLEGE(A), KAKINADA

DEPARTMENT OF COMPUTER SCIENCE

Board of Studies

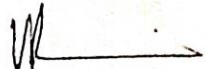
2018-2019

MEMBERS PRESENT

1 Smt. Dr K. V. Sobha Rani
Lecturer In-charge (Computers)
P. R. Govt College (A)
Kakinada


Chair man

2 Smt. V. Persis
Associate Professor
Dept of Computer Science
AKNU
Rajahmundry


University Nominee

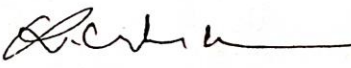
3 M A Sayeed
Lecturer In Computer Science
Ideal Degree College
Kakinada

M.A. Sayeed
Subject Expert

4 Dr. N. Sreenivas
Lecturer In-charge
Dept of Zoology
P R Govt (A) College
Kakinada


Member

5 R. N. Raghu Ram
Lecturer in Computer Science
P R Govt (A) College
Kakinada


Member

6 P. Chakradhara Rao
Lecturer in Computer Science
P R Govt (A) College
Kakinada


Member

7 G. Sunitha
Lecturer in Computer Science
P R Govt (A) College
Kakinada

G. Sunitha
Member

8 G. Anitha
Lecturer in Computer Science
P R Govt (A) College
Kakinada

G. Anitha
Member

9 G.V.N.Kishore
Lecturer in Computer Science
P R Govt (A) College
Kakinada


Member

0 N.Havilah
Lecturer in Computer Science
P R Govt (A) College

Havilah Neal
Member

STUDENT REPRESENTATIVES

- | | |
|----------------------|---------------|
| 1. A Mounika | II MSCS, 85% |
| 2. K.Bhargavi | II MPCS, 80% |
| 3. D Sai Teja | II MECS, 80% |
| 4. R Venkata Lakshmi | II MSCS, 80% |
| 5. Y Srinu | II M CCS, 84% |
| 6. A Bindhu Madhavi | II M CCS, 83% |

P R GOVERNMENT COLLEGE [AUTONOMOUS] KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
BOARD OF STUDIES 2018-2019

The sixteenth meeting of Board of Studies *COMPUTER SCIENCE* has been conducted in the Department of Computer Science on ____10_ April, 2018 at _____ to discuss the following.

AGENDA

1. Department activities for 2018-19 academic year.
2. Organizing National/State level Seminars / Workshops / Conferences / /Training programmes etc., with topics and other details
3. Plan for utilization of funds for Autonomous/CPE/other grants available for arranging guest lecturers, faculty improvement programmes, study tours, equipping laboratories, reference books & other necessary teaching-learning material.
4. Plan for organizing subject oriented community outreach programmes & allocation of necessary funds.
5. Institution of new medals/incentives/prizes etc., from alumni, philanthropists, parents, faculty etc.,
6. Any other programme that enhances the learning capacity of students and their employable & knowledge skills.
7. Suggest panel of examiners / paper setters & other experts / nominees for BOS deliberations.
8. Pedagogy implementation w.e.f admitted batch 2018-19.
9. Internal Assessment weightage 40%.
10. End Semester Examinations 2hrs .30 min and for 60 Marks, and Mid Semester Examinations 1 hr 30 min for 40 marks w.e.f admitted batch 2018-19.
11. Conduct practical examination semester wise for three yaers.
12. Any other matter.

RESOLUTIONS

- 1) The Sixteenth meeting of Board of Studies **COMPUTER SCIENCE** has been conducted in the Department of Computer Science on __10__April, 2018 at _____ to discuss the following.
- 2) Department action plan 2018-19 submitted in annexure.
- 3) Pedagogy implementation w.e.f admitted batch 2018-19.
- 4) Resolved to approve panel of names for appointment of examiners/ paper setters annexed to these resolutions.
- 5) Resolved to conduct End Semester Examinations 2hrs .30 min and for 60 Marks, and Mid Semester Examinations 1 hr 30 min for 40 marks w.e.f admitted batch 2018-19.
- 6) Resolved to conduct practical examination semester wise for first and final years only.

PANEL OF NAMES FOR APPOINTMENT OF EXAMINERS/PAPERSETTERS

2018-19

S.No	NAME & DESIGNATION	COLLEGE	EXPERIENCE	Address
1.	Sri M A Sayeed	Ideal College, Kakinada 0884-2384382	27 Years	C/o college
2.	Sri L. Diwakar Rao	Aditya College, Kakinada 0884-2376665	16 Years	C/o college
3.	Sri M. Satyanarayana	V.S.Laxmi Degree college, Kakinada 08842300200 7893365011	14 Years	C/o college
4.	Smt K. Surekha	V.S.M.College, Ramachandrapuram 08851242309	16 Years	C/o college
5.	Sri M. Kameshwara Rao	Chaitanya PG & Degree college, Chaitanya Nagar, Kakinada 0884-2344444	14 Years	C/o college
6.	Sri D. V. Mahesh	V.S.Lakshmi Degree college, Sasikanth Nagar, Kakinada 0884 - 2300228	14 Years	C/o college
7.	Sri Ch. Venkata Veerendra	Suryaraya Degree College, Pithapuram, East Godavari District- 533450 0884-5592875	9 Years	C/o college
8.	Smt V Naga Mani	VSL Womens College	8 Years	C/o college
9.	Smt. R. Monica Shirin	Ideal College, Kakinada 0884-2384382	10 Years	C/o college
10.	Ch Tulasi Bhavani	ASD Womens College, Kakinada	6 Years	C/o college

P.R.GOVERNMENT COLLEGE (AUTONOMOUS), KAKINADA – 533 001
DEPARTMENT OF COMPUTER SCIENCE
ALLOCATION OF CREDITS AT SUBJECT LEVEL
Under CBCS from 2014-2015
Course: B.Sc (Computer Science)
Subject: Computer Science

S.No.	Semester	Course code	MODULE	Course Title	Hrs./ Week	Max. Marks			Credits
						Int.	Ext.	Tot.	
1	I	CP1204	CORE-1	Computer Fundamentals and Photoshop	4	40	60	100	3
2	II	CP2204	CORE-2	Programming in C	4	40	60	100	3
3	Practical	CP2204P	Practicals	Photoshop And C Language Lab	3	40	60	100	2
4	III	CP3204	CORE-3	Basics of Java Programming	4	30	70	100	3
5	IV	CP4204	CORE-4	Data Structures Through Java	4	30	70	100	3
6	Practical	CP4204P	Practicals	Basics of Java Programming, Data Structures Through Java	3	30	70	100	2
7	V	CP5207	ADVANCED CORE	Relational Database Management System	3	30	70	100	3
8		CP5208A	ADV. ELECTIVE-1	Programming in VB.NET	3	30	70	100	2
9		CP5208B	ADV. ELECTIVE-2	E-Commerce	3				
10	VI	CP6207	SKILL BASED CORE	Software Engineering	3	30	70	100	3
11		CP6208A	SKILL BASED ELECTIVE-1	Internet And Web Designing	3	30	70	100	2
12		CP6208B	SKILL BASED ELECTIVE-2	Multimedia Technology	3				
13	Practical	CP6207P	Adv. Core Practicals	Adv. Core Practicals	3	30	70	100	2
14	Practical	CP6208P	Elective Practicals	Elective Practicals	3	30	70	100	2
TOTAL					46	360	840	1200	30
15				Project	2	-	-	100	2
16	II		Foundation Course	<u>Foundation Course</u> ICT-I	2		50	50	2
17	III		Foundation Course	<u>Foundation Course</u> ICT-II	2		50	50	2

I BSC
COMPUTER SCIENCE

I B.Sc. – Computer Science / Semester- I (W.E.F. 2018-2019)
Course: COMPUTER FUNDAMENTALS AND PHOTOSHOP
COURSE CODE: CP1204

Total Hrs. of Teaching-Learning: 52 @ 4 h / Week Total Credits: 03

Objective: This course is designed to basic computer knowledge with PHOTOSHOP package. In this course Create compositions with different placements, styles, and visibility Learn to select parts of images for a composition Learn to use layer blending modes and layer effects Learn to create different arrangements

Outcome: After the successful completion of course the student should have thorough knowledge about concept and principles of computer fundamentals and Photoshop

MODULE--I: 12hr

- a) **Introduction to computers:** Characteristics and limitations of computer, Block diagram of computer, types of computers, uses of computers, computer generations.
- b) **Number systems:** working with binary, octal, decimal and Hexa decimal numbering system.
- c) **Input and Output devices:** Keyboard and mouse, inputting data in other ways, Pointing Devices, Handheld Devices, Optical Devices, Audio-Visual Input Devices. Output Devices: Monitors, Projectors, Speakers, Printers, Plotters.

MODULE--II: 10hr

- a) **Types of Software:** system software, Application software, commercial, open source, domain and free ware software.
- b) **Memories:** Primary, Secondary and cache memory. Secondary Storage Devices: Magnetic Tapes, Floppy Disks, Hard Disks.
- c) **Windows basics:** Start menu, icons, MSWindows-Desktop, My Computer, My Documents, Pictures, Music, Videos, Recycle Bin, and Task Bar - Control Panel.

MODULE- -III 12hr

- a) **Introduction to Adobe photoshop:** Getting started with photoshop, creating and saving a document in photoshop, page layout and back ground, photoshop program window-title bar, menu bar, option bar, image window, image title bar, status bar, ruler, paletts, tool box, screen modes, saving files, reverting files, closing files.
- b) **Images:** working with images, image size and resolution, image editing, colour modes and adjustments, Zooming & Panning an Image, Rulers, Guides & Grids- Cropping & Straightening an Image, image backgrounds, making selections.
- c) **Working with tool box:** working with pen tool, save and load selection-working with erasers-working with text and brushes-

MODULE—IV 18hr

- a) **Colour manipulations:** colour modes- Levels – Curves - Seeing Colour accurately
Patch tool – Cropping-Reading your palettes - Dust and scratches- Advanced Retouching- smoothing skin. **Layers:** Working with layers- layer styles- opacity- adjustment layers
- b) **Filters:** The filter menu, Working with filters- Editing your photo shoot, presentation – how to create adds, artistic filter, blur filter, brush store filter, distort filters, noise filters, pixelate filters, light effects, difference clouds, sharpen filters, printing.
Menus: purpose of menus – new file- open file- print file – copying data – cut data- paste data- saving custom shape- working with modes- define brushes.

Reference Books:

1. Fundamentals of Computers by Reema Thareja from Oxford University Press
2. Adobe Photoshop Class Room in a Book by Adobe Creative Team.

P. R.GOV'T. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT FOR THE YEAR 2018-2019
I B.SC (CS) 2018-2021 BATCH

Computer Science Course: COMPUTER FUNDAMENTALS AND PHOTOSHOP
COURSE CODE:CP1204

Time : 2.30 Hrs.

SEMESTER-I

Max. Marks: 60

Model blue print for the model paper and choice

S.NO	Type of Question	To be given in the Question Paper			To be answered		
		No. of Questions	Marks allotted to each question	Total Marks	No. of Questions	Marks allotted to each question	Total Marks
F1	Section-A Very Short Questions	5	1	5	5	1	5
2	Section-B Short Questions	6	5	30	3	5	15
3	Section-C Essay Questions	8	10	80	4	10	40
TOTAL		19		115	TOTAL MARKS		60

$$\text{Percentage of choice given} = \frac{115 - 60}{115} \times 100 = \frac{55}{115} \times 100 = 47.82\%$$

P.R.GOV.T.COLLEGE (AUTONOMOUS), KAKINADA
MODEL PAPERS FOR THE YEAR 2018-2019
I B.Sc (CS) 2018-2021 BATCH

Computer Science Course: COMPUTER FUNDAMENTALS AND PHOTOSHOP
COURSE CODE:CP1204

Time : 2.30 Hrs.

SEMESTER-I

Max. Marks: 60

Section-I

Answer ALL Questions (Very Short answer questions) (5x1=5M)

1. Write about system softwares?
2. Write any four I/O devices.
3. Define File and Folder.
4. How do you crop an image?
5. What is Drawing Palette?

SECTION-II

Answer any 3 Questions (Short answer questions) (3x5=15M)

6. Differentiate between primary memory and secondary memory.
7. Explain the generations of computers.
8. Explain the various types of number system.
9. How to manage software?
10. Explain briefly about patch tool in photoshop.
11. Explain briefly about rulers in photoshop.

SECTION-III

Answer all Questions (4x10=40)M

12. Explain the Logical Organization of a Digital Computer with the help of Block Diagram.

(or)

Write about the classification of computer in detail.

13. What is an octal number system? Explain the procedure to convert an octal number into its binary

(or)

Explain various options in Start menu

14. Explain how to change the image size and resolution in Photoshop

(or)

Explain how to create, hide and delete layers in Photoshop

15. Explain how to create ads in Photoshop.

(or)

Explain the working procedure of the tools

- a. Brushes.
- b. Pencil and Erasers.
- c. Painting with selections

P. R.GOVT. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT FOR THE YEAR 2018-2019
I B.SC (CS) 2018-2021 BATCH

Computer Science Course: COMPUTER FUNDAMENTALS AND PHOTOSHOP
COURSE CODE:CP1204

Time : 2.30 Hrs.

SEMESTER-I

Max. Marks: 60

Model Blue print for the question paper setter

Chapter Name	Essay Questions 10 Marks	Short Questions 5 Marks	Very Short Questions 1 Marks	Marks allotted to the chapter
MODULE -I	2	2	2	32
MODULE -II	2	2	1	31
MODULE -III	2	1	1	26
MODULE -IV	2	1	1	26
Total No. of questions	8	8	5	
Total Marks Including choice				115

P. R.GOV.T. COLLEGE (AUTONOMOUS), KAKINADA
I B.SC (CS) 2018-2021 BATCH
SEMESTER-I
COURSE CODE:CP1204

COMPUTER FUNDAMENTALS AND PHOTOSHOP

Essay Questions:

1. Draw a block diagram to illustrate the basic organization of a computer system and explain the functions of various units.
2. Write about the classification of computer in detail.
3. Explain about memory unit of computer in detail.
4. Explain about different secondary storage devices
5. Explain input and output device of computer?
6. How many generations are there till date? Explain in each generation in detail.
7. What is an octal number system? Explain the procedure to convert an octal number into its binary.
8. Explain various options in Start menu
9. Explain how to create, and save and close a document in Photoshop
10. Explain how to change the image size and resolution in Photoshop
11. Explain how to crop and straighten an image in Photoshop
12. Explain how to create, hide and delete layers in Photoshop.
13. Explain how to create ads in Photoshop
14. Explain the working procedure of the tools
 - a. Brushes.
 - b. Pencil and Erasers.
 - c. Painting with selections

Short Answer Questions:

1. Explain Write any five features of WINDOWS.
2. Explain about RAM, ROM and EPROM.
3. Explain about Cache memory.
4. Explain about window Explorer
5. Explain about Hex a decimal number system.
6. Explain briefly about micro computers
7. Explain how to change background in Photoshop.
8. Explain how to revert files in Photoshop.
9. Explain briefly about patch tool in Photoshop.
10. Explain briefly about rulers in Photoshop.
11. Explain how to cut, copy and paste data in Photoshop.
12. Explain briefly about blend modes in Photoshop

Very Short Questions:

1. What is icon?
2. What is primary memory?
3. What is software?
4. How can you open a new file in Photoshop?
5. What are the options in menu bar of Photoshop?
6. Define computer?
7. Define application software?
8. How do you rotate an image?
9. How do you crop an image?
10. How do you resize an image?
11. Define Gradient?
12. What is Drawing Palette?

Course: Programming in C

Course Code: CP2204

Total Hrs. of Teaching-Learning: 52 @ 4 h / Week

Total Credits: 03

Objectives – This course is designed to understand C programming language. To gain knowledge on using programming structure and its elements.

Outcomes: After this course student will able to

- 1) Know how to implement Logics in C program
- 2) using if-else construct, Loops and Data Structures
- 3) Functions in C, Recursion, Arrays,
- 4) Strings in C.

MODULE I:

12Hrs

- a) **Introduction to Algorithms and Programming Languages:** Algorithm – Key features of Algorithms – Some more Algorithms – Flow Charts – Pseudo code – Programming Languages – Generation of Programming Languages – Structured Programming Language Design and Implementation of Correct, Efficient and Maintainable Programs
- b) **Introduction to C-**Introduction, historical development of C, sample C program, Constants, variables and data types.
- c) **Operators and expressions-**arithmetic, unary, relational, logical, assignment, the conditional operator etc., Arithmetic expressions. Managing input and output operations: Reading, writing, formatted
- d) **I/O. Decision making and branching:** Introduction, if, if-else, nested-if, switch statement.

MODULE II:

12Hrs

- a) **Decision making and looping arrays:** While, Do-while, for statements.
- b) **Arrays:** Introduction, One-dimensional arrays, two-dimensional array, Multi dimensional arrays.
- c) **Functions:** definition, form of C functions, function declaration, accessing a function, categories of functions, passing arguments to a function, call by value, call by reference. Recursion, function with arrays. Strings: String handling functions.

MODULE -III:

HRS: 10

- a) **Storage Classes:** Auto, register, static, extern.
- b) **Structures and unions:** structure definition, initialization, arrays of structures within structures, structures and functions, unions.

MODULE -IV:

HRS: 12

- a) **Pointers, File Management in C:** Introduction to pointer, pointer declarations, pointer and arrays, passing pointers to functions, pointer and structures, pointers to pointers.
- b) **File Management in C:** Introduction, defining and opening of a file, closing a file. Input/output Operations on files.

Prescribed Books:

1. Programming with C by Byron S. Gottfried, Schaum's out line series.
2. Programming in ANSCI C by E. Balaguruswamy (2nd edition)

P. R.GOV'T. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT FOR THE YEAR 2018-2019
I B.SC (CS) 2018-2021 BATCH
Course: Programming in C
Course Code:CP2204

Time : 2.30 Hrs.

SEMESTER-II

Max. Marks:60

Model blue print for the model paper and choice

S.NO	Type of Question	To be given in the Question Paper			To be answered		
		No. of Questions	Marks allotted to each question	Total Marks	No. of Questions	Marks allotted to each question	Total Marks
1	Section-A Very Short Questions	5	1	5	5	1	5
2	Section-B Short Questions	6	5	30	3	5	15
3	Section-C Essay Questions	8	10	80	4	10	40
TOTAL		19		115	TOTAL MARKS		60

$$\text{Percentage of choice given} = \frac{115 - 60}{115} \times 100 = \frac{55}{115} \times 100 = 47.82\%$$

P.R.GOV.T.COLLEGE (AUTONOMOUS), KAKINADA
MODEL PAPERS FOR THE YEAR 2018-2019
I B.Sc (CS) 2018-2021 BATCH
Computer Science Course: Programming in C
Course Code:CP2204

Time : 2.30 Hrs.

SEMESTER-II

Max. Marks: 60

(Model Question Paper)

Section-I

Answer ALL Questions

(Very Short answer questions)

(5x1=5)M

1. Write the syntax and flow chart of if-else statement.
2. Write any two features of C language.
3. Define function.
4. What is pointer?
5. Define array.

Section-II

Answer any 5 Questions

(3x5=15)M

1. List out various operators in C.
2. Distinguish between Structures and Unions.
3. Explain call by reference with an example.
4. Explain about recursion with example.
5. Write about storage classes in C.
6. Explain various data types in C.

Section-III

Answer all Questions

(4x10=40)M

1. Explain various conditional control statements in 'C' with examples.
(or)
Explain different input and output statements in 'C' with examples
2. Explain different categories of functions with examples.
(or)
Explain the difference between arrays and pointers in C.
3. Explain different input/output functions in file handling.
(or)
Explain various string handling Functions in C.
4. Write a C program to find multiplication of two matrices.
(or)
Explain about basic file operation in C.

P. R.GOV'T. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT FOR THE YEAR 2018-2019
I B.SC (CS) 2018-2021 BATCH
Course: Programming in C
Course Code:CP2204

Time : 2.30 Hrs.

SEMESTER-II

Max. Marks: 60

Model Blue print for the question paper setter

Chapter Name	Essay Questions 10 Marks	Short Questions 5 Marks	Very Short Questions 1 Marks	Marks allotted to the chapter
MODULE -I	2	2	2	32
MODULE -II	2	2	1	31
MODULE -III	2	1	1	26
MODULE -IV	2	1	1	26
Total No. of questions	8	8	5	
Total Marks Including choice				115

P. R.GOV'T. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT FOR THE YEAR 2018-2019
I B.SC (CS) 2018-2021 BATCH
Course: Programming in C
Question Bank
Course Code:CP2204

Essay Questions

1. Explain various operators in C with example.
2. Explain various Conditional Control Statements in C with example.
3. Explain various Looping Statements in C with example.
4. What is a function? Explain in detail.
5. Write about different categories of functions in C.
6. Explain various string handling Functions in C.
7. What is structure? Give declaration of structures. Explain structure within structure.
8. What is union? Explain in detail.
9. Explain in detail about pointers.
10. Explain about basic file operators in C.

Short Answer Question

1. Write the importance of C language
2. Explain about various constants in C.
3. Explain various data types in C.
4. How symbolic constants are defined? Explain with example.
5. Write I/O function in C language
6. Write briefly about any five character test function in C.
7. Explain two dimensional arrays to functions.
8. Explain how to pass arrays to functions.
9. Explain call by reference with example.
10. What is recursion? What advantage is there in its use?
11. Write about storage classes in C.
12. Write about pointers to arrays in C.
13. What is dynamic memory allocation?

Very short Answer Questions

1. What is a keyword in C?
2. Define an array.
3. Define structure.
4. Define union.
5. What is the use of goto statement give the syntax of it.
6. What is call by value?
7. What is pointer?

I B.Sc. – Computer Science / Semesters- I & II / Paper-I Syllabus

Practical Paper - I:

COMPUTER FUNDAMENTALS AND PHOTOSHOP and Programming in C

(Total Hours of Laboratory Exercises: 90 @ 3 h / Week in 30 Sessions)

Course Code: CP2204P

Practical-I/Laboratory-I

Computer Fundamentals & Photoshop and Programming in C.

Marks:50

Part A : Photo Shop Lab:

45Hrs

1. Create your Visiting card
2. Create Cover page for any text book
3. Create a Paper add for advertising of any commercial agency
4. Design a Passport photo
5. Create a Pamphlet for any program to be conducted by an organization
6. Create Broacher for you college
7. Create Titles for any forthcoming film
8. Custom shapes creation
9. Create a Web template for your college
10. Convert color photo to black and white photo

Part B: Programming in 'C':

45Hrs

1. Find out the given number is perfect number or not using c program.
2. Write a C program to check whether the given number is Armstrong or not.
3. Write a C program to find the sum of individual digits of a positive integer.
4. Write a C program to generate the first n terms of the Fibonacci sequence.
5. Write a C program to generate all the prime numbers between 1 and n, where n is a value supplied by the user.
6. Write a C program to find both the largest and smallest number in a list of integers.
7. Write a C program that uses functions to perform the following: a. Addition of Two Matrices b. Multiplication of Two Matrices
8. Write a program to perform various string operations
9. Write C program that implements searching of given item in a given list
10. Write a C program to sort a given list of integers in ascending order

P.R.GOV.T. COLLEGE (AUTONOMOUS), KAKINADA
SYLLABUS/MODEL PAPERS FOR THE YEAR 2018-2019

I BSC (CS) 2018– 2021 BATCH

SCHEME OF VALUATION FOR PRACTICAL-I

Practical/laboratory-Photoshop and C

Course Code: CP2204P

Algorithm	:	10 Marks
Synthetically correct program	:	15 Marks
Test data	:	15 Marks
Viva voice	:	20 Marks
Documentation/record	:	10 Marks
Internals	:	30 Marks

100 Marks

II BSC COMPUTER SCIENCE
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P R GOVT COLLEGE(A), KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
II B.Sc (CS) - Semester- III (W.E.F. 2018-2019)
Paper-II – OBJECT ORIENTED PROGRAMMING USING JAVA
Course code: CP3204

Total Hrs. of Teaching-Learning: 52 @ 4 h / Week

Total Credits: 03

Objective:

To develop proficiency in the specification, representation, and implementation of OOPS Concepts.

Outcomes: After completion of this course, student can able to understand:

1. The basic structure of Java Programming.
2. Object Oriented Programming features.

Module-1:

12 Hrs

FUNDAMENTALS OF OBJECT – ORIENTED PROGRAMMING: Introduction, Object Oriented paradigm, Basic Concepts of OOP, Benefits of OOP, Application's of OOP. OVERVIEW OF JAVA LANGUAGE: Introduction, java features Simple Java program structure, difference between C, C++ and java, java and internet, Java tokens, Java Statements, Implementing a Java Program, Java Virtual Machine, Command line arguments.

CONSTANTS, VARIABLES & DATA TYPES: Introduction, Constants, Variables, Data Types, Declaration of Variables, Giving Value to Variables, Scope of variables, Symbolic Constants, Type casting, Getting Value of Variables, Standard Default values;

Module-2

10 Hrs

OPERATORS AND EXPRESSIONS : Arithmetic operators Relational operators, logical operators, Assignment operators, Increment and decrement operators, Conditional operators, Bitwise operators, Special operators, Arithmetic operators, Precedence of Arithmetic operators.

DECISION MAKING & BRANCHING: Introduction, Decision making with if statement, Simple if statement, if Else statement, Nesting of if else statements, the else if ladder, the switch statement, the conditional operator.

DECISION MAKING & LOOPING: Introduction, The While statement, the do-while statement, the for statement, Jumps in loops. CLASSES, OBJECTS & METHODS: Introduction, Defining a class, Adding variables, Adding methods, Creating objects, Accessing class members, Constructors, Method overloading, Static members, Nesting of methods, visibility controls.

Module-3:

10 Hrs

INHERITANCE: inheritance and types of inheritances, Extending a class, Overloading methods, Final variables and methods, Final classes, Abstract methods and classes.

ARRAYS, STRINGS AND VECTORS: Arrays, One-dimensional arrays, Creating an array, Two – dimensional arrays, Strings, Vectors, Wrapper classes.

INTERFACES: MULTIPLE INHERITANCE: Introduction, Defining interfaces, Extending interfaces, Implementing interfaces, Assessing interface variables;

Module-4:

10 Hrs

MULTITHREADED PROGRAMMING: Introduction, Creating Threads, Extending the Threads, Stopping and Blocking a Thread, Lifecycle of a Thread, Using Thread Methods, Thread Exceptions, Thread Priority, Synchronization, Implementing the 'Runnable' Interface.

MANAGING ERRORS AND EXCEPTIONS: Types of errors: Compile-time errors, Run-time errors, Exceptions, Exception handling, Multiple Catch Statements, Using finally statement.

Module-5:

10 Hrs

APPLET PROGRAMMING: local and remote applets, difference between Applets and Applications, Building Applet code, Applet Life cycle: Initialization state, Running state, Idle or stopped state, Dead state, Display state Designing web page, adding applet to HTML file, Running the Applet.

PACKAGES: Introduction, Java API Packages, Using System Packages, Naming conventions, Creating Packages, Accessing a Package, using a Package, Adding class to a package, Hiding classes, static Import.

Prescribed Book:

1. E .Balaguru swamy, Programming with JAVA, A primer, 3e, TATA McGraw-Hill Company.

Reference Books: 1. John R. Hubbard, Programming with Java, Second Edition, Schaum's outline Series, TMH.

2. Deitel &Deitel. Java TM: How to Program, PHI (2007)

3. Java Programming: From Problem Analysis to Program Design- D.S Mallik

4. Object Oriented Programming Through Java by P. Radha Krishna, Universities Press (2008)

5. Java complete reference.

Reference Books:

1. Java for Programmers, P.J.Deital and H.M.Deital, Pearson Education

2. Object Oriented Programming Through Java, P.Radha Krishna, Universities Press.

P. R.GOV'T. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT (W.E.F. 2018-2019)
II B.Sc (CS) SEMESTER-III
Course code: CP3204

SUBJECT: OBJECT ORIENTED PROGRAMMING USING JAVA
PAPER- II

Time: 2½ Hrs
Marks: 60

Model blue print for the model paper and choice

S.NO	Type of Question	To be given in the Question Paper			To be answered		
		No. of Questions	Marks allotted to each question	Total Marks	No. of Questions	Marks allotted to each question	Total Marks
1	Section-A Very Short Questions	5	1	5	5	1	5
2	Section-B Short Questions	8	3	24	5	3	15
3	Section-C Essay Questions	8	10	80	4	10	40
TOTAL MARKS				109	TOTAL MARKS		60

P.R.GOV.T.COLLEGE (AUTONOMOUS), KAKINADA
MODEL PAPER (W.E.F. 2018-2019)

II B.Sc (CS) Course code: CP3204

SUBJECT: OBJECT ORIENTED PROGRAMMING USING JAVA **Time: 2½ Hrs**
PAPER-II **Marks: 60**

SEMESTER-III

Section – I

Answer any all questions

5 x 1 = 5M

1. Define JVM.
2. Define Constant.
3. What is an Operator?
4. Define class and Object.
5. Define Interface.

Section –II

Answer any 5 questions

5 x 3 =15M

6. What are the data types supported by Java?
7. Explain the Evaluation of Expressions.
8. Explain the Conditional Statements in Java.
9. Discuss Abstract classes and Methods.
10. Discuss Method Overloading.
11. Discuss Method Overriding.
12. Explain about Final variables and Methods.
13. How can you implement Interfaces?

Section –III

Answer all the questions

4 x 10 = 40M

14. A. Explain the features of Object Oriented Programming.

(OR)

B. What is an Operator? Explain the Types of Operators in Java.

15. A. Explain the Decision Making and Looping Statements in Java.

(OR)

B. How is Multiple Inheritance handled in Java Programming?

16. A..Explain how handling Exceptions in Java?

(OR)

B. Explain about Life cycle of a Thread?.

17. A. Explain about Life cycle of an Applet?

(OR)

B. What is a Package? Explain the creation of Package in Java.

P. R.GOV'T. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT (W.E.F. 2018-2019)
II B.SC (CS) SEMESTER-III
Course code: CP3204

SUBJECT: OBJECT ORIENTED PROGRAMMING USING JAVA
PAPER-II

Time: 2½ Hrs
Marks: 60

Model Blue print for the question paper setter

Chapter Name	Essay Questions 10 Marks	Short Questions 3 Marks	Very Short Questions 1 Marks	Marks allotted to the chapter
Module-1	2	2	1	27
Module-2	1	2	1	17
Module-3	1	2	1	17
Module-4	2	1	1	24
Module-4	2	1	1	24
Total No. of questions	8	8	5	
Total Marks Including choice				109

P R GOVERNMENT (AUTONOMOUS) COLLEGE, KAKINADA
QUESTION BANK (W.E.F. 2018-2019)
II B.Sc (CS) Course code: CP3204
SEMESTER-III

Subject: OBJECT ORIENTED PROGRAMMING USING JAVA
Paper-II

Max.Marks:60

Question Bank

Very Short Questions: (1M)

1. What is Internet?
2. What is WWW?
3. What is Web Browser?
4. Define Token.
5. Define JVM.
6. Define Constant.
7. What is a Variable?
8. Define Data type in Java.
9. What is an Operator?
10. Define Expression.
11. Mention any three relational operators.
12. Define class and Object.
13. What is Constructor?
14. Define Interface.
15. Give the syntax and definition for Package.
16. What is Polymorphism?
17. What is Inheritance?
18. Define Super Keyword.

Short Questions: (3M)

1. What are the Applications of OOPS?
2. Give the Structure for Java Program.
3. Explain the Declaration of variables and giving values to variables.
4. What are the data types supported by Java?
5. Explain the Evaluation of Expressions.
6. Explain the Conditional Statements in Java.
7. Discuss Abstract classes and Methods.
8. Discuss Method Overloading.
9. Discuss Method Overriding.
10. Explain about Final variables and Methods.
11. How can you implement Interfaces?
12. Discuss the types of Polymorphism.

Essay Questions: (10M)

1. Explain the features of Object Oriented Programming.
2. Explain the features of Java Programming.
3. What is an Operator? Explain the Types of Operators in Java.
4. Explain the Decision Making and Looping Statements in Java.
5. Explain the Decision Making and Branching Statements in Java
6. What is Inheritance? Explain the Types of Inheritance that are supported by java.
7. How is Multiple Inheritance handled in Java Programming?
8. What is a Package? Explain the creation of Package in Java.
9. Explain about JVM in details.
10. What is the difference between overriding and overloading by using programming?
11. Explain the difference between Interfaces and Abstract classes with an example Programs.
11. Explain how handling Exceptions in Java?
12. Explain about Life cycle of a Thread?
13. Explain about Life cycle of an Applet?

P. R.GOV.T. COLLEGE (AUTONOMOUS), KAKINADA
PRACTICALS (W.E.F. 2018—2019)
II B.Sc (CS) SEMESTER-III
PRACTICAL SYLLABUS
OBJECT ORIENTED PROGRAMMING USING JAVA
OBJECT ORIENTED PROGRAMMING USING JAVA LAB

Course code: CP3204P

1. Write a program to perform various String Operations
2. Write a program on class and object in java
3. Write a program to illustrate Function Overloading & Function Overriding methods in Java
4. Write a program to illustrate the implementation of abstract class
5. Write a program to implement Exception handling
6. Write a program to create packages in Java
7. Write a program on interface in java
8. Write a program to Create Multiple Threads in Java
9. Write a program to Write Applets to draw the various polygons
10. Write a program which illustrates the implementation of multiple Inheritance using interfaces in Java
11. Write a program to assign priorities to threads in java

P R GOVT COLLEGE(A), KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
II B.Sc (CS) SYLLABUS PAPER (W.E.F. 2018-2019)
Course Code: CP4204
SEMESTER-IV

Course: Data Structures

Paper: II

Total Hrs. of Teaching-Learning: 52 @ 4 h / Week

Total Credits: 03

Course Objectives

To introduce the fundamental concept of data structures and to emphasize the importance of data structures in developing and implementing efficient algorithms. Course Outcomes After completing this course satisfactorily, a student will be able to:

1. Describe how arrays, records, linked structures, stacks, queues, trees, and graphs are represented in memory and used by algorithms
 2. Describe common applications for arrays, records, linked structures, stacks, queues, trees, and graphs.
 3. Write programs that use arrays, records, linked structures, stacks, queues, trees, and graphs
 4. Demonstrate different methods for traversing trees
 5. Compare alternative implementations of data structures with respect to performance
 6. Compare and contrast the benefits of dynamic and static data structures implementations
 7. Describe the concept of recursion, give examples of its use, describe how it can be implemented using a stack .
 8. Discuss the computational efficiency of the principal algorithms for sorting, searching, and hashing.
-

SEMESTER – IV

Module-1

12 Hrs

Concept of Abstract Data Types (ADTs)-

Data Types, Data Structures, Primitive and Nonprimitive Data Structures, Linear and Non-linear Data Structures. Linear Lists– ADT, Array and Linked representations, Pointers.

Arrays:

One Dimensional-Two Dimensional-Multi Dimensional-Operations-Sparse Matrices. Linked Lists: Single Linked List, Double Linked List, Circular Linked List , applications

Module-2

10 Hrs

Stacks:

Definition, ADT, Array and Linked representations, Implementations and Applications

Queues:

Definition, ADT, Array and Linked representations, Circular Queues, Dequeues, Priority Queues, Implementations and Applications. UPDATED.

Module-3:

10 Hrs

Trees:

Binary Tree, Definition, Properties, ADT, Array and Linked representations, Implementations and Applications.

Binary Search Trees (BST) –

Definition, ADT, Operations and Implementations, BST Applications. Threaded Binary Trees, Heap trees.

Module-4:**10 Hrs**

Graphs –

Graph and its Representation, Graph Traversals, Connected Components, Basic Searching Techniques, Minimal Spanning Trees

Module-5:**10 Hrs**

Sorting and Searching:

Selection, Insertion, Bubble, Merge, Quick, Heap sort, Sequential and Binary Searching.

REFERENCE BOOKS

1. D S Malik, Data Structures Using C++, Thomson, India Edition 2006.
2. Sahni S, Data Structures, Algorithms and Applications in C++, McGraw-Hill, 2002.
3. SamantaD, Classic Data Structures, Prentice-Hall of India, 2001.
4. Heilman G I, Data Structures and Algorithms with Object-Oriented Programming, Tata McGraw-Hill, 2002. (Chapters I and 14).
5. Tremblay P, and Sorenson P G, Introduction to Data Structures with Applications, Tata McGraw-Hill,

Student activity: 1. Create a visible stack using C-graphics

2. Create a visible Queue using C-graphics

P. R.GOV'T. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT (W.E.F. 2018-2019)
II B.SC (CS)
SEMESTER-IV
Course Code: CP4204

SUBJECT: Data Structures
PAPER- II

Time: 2½ Hrs
Marks: 60

Model blue print for the model paper and choice

S.NO	Type of Question	To be given in the Question Paper			To be answered		
		No. of Questions	Marks allotted to each question	Total Marks	No. of Questions	Marks allotted to each question	Total Marks
1	Section-A Very Short Questions	5	1	5	5	1	5
2	Section-B Short Questions	8	3	24	5	3	15
3	Section-C Essay Questions	8	10	80	4	10	40
TOTAL MARKS				109	TOTAL MARKS		60

P. R. GOVT COLLEGE (AUTONOMOUS), KAKINADA
MODEL PAPER (W.E.F. 2018-2019)
II B.SC (CS)
SEMESTER –IV
Course Code: CP4204

Subject: Data Structures

Time: 2½ hrs

Paper: IV

Marks: 60

SECTION – I

Answer all Questions

5×1 = 5M

1. What is ADT?
2. Define Array.
3. Define Stack.
4. What is BST?
5. What is Graph?

SECTION – II

Answer any FIVE Questions

5 x 3 = 15M

6. Explain the Primitive Data Structures.
7. Write a java Program to add two matrices.
8. Explain Stack operations.
9. Explain Priority Queue.
10. Explain about Tree implementations and applications.
11. Explain Minimal Spanning Trees?
12. Explain about Binary Searching.
13. Explain Insertion Sort.

SECTION – III

Answer all the Questions

4 x 10 = 40 M

14. A. What are the goals of data structure? Write note on linear and Non Linear data structure with examples.

OR

- B. What is Array? Explain about types of Arrays with syntax and suitable examples
15. A. What is a stack? Explain the algorithm to create and delete items In stack.

OR

- B. What is a queue? Explain the algorithms to create and delete Items in a circular queue.
16. A. Write an algorithm to delete operation in any binary search tree.

OR

- B. Explain the below: i) Binary search tree ii) Heaps
17. A. What is Minimal Spinning tree? Write about breadth first search Technique?

OR

- B. What is a graph? How a graph can be represented in memory? Write an algorithm to delete an edge from a graph.

P. R.GOV'T. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT FOR THE YEAR 2018-2019
II B.SC (CS)
SEMESTER-IV
Course Code: CP4204

SUBJECT: Data Structures
PAPER-II

Time: 2½ Hrs
Marks: 60

Model Blue print for the question paper setter

Chapter Name	Essay Questions 10 Marks	Short Questions 3 Marks	Very Short Questions 1 Marks	Marks allotted to the chapter
Module-1	2	2	1	27
Module-2	1	2	1	17
Module-3	1	2	1	17
Module-4	2	1	1	24
Module-4	2	1	1	24
Total No. of questions	8	8	5	
Total Marks Including choice				109

P. R. GOVT COLLEGE (AUTONOMOUS), KAKINADA
QUESTION BANK (W.E.F. 2018-2019)
II B.SC (CS)
SEMESTER –IV
Course Code: CP4204

Subject: Data Structures
Paper-II

Max.Marks:60

QUESTION BANK

Very Short Questions:

1. What is ADT?
2. Define Array.
3. Define Stack.
4. What is BST?
5. What is Graph?
6. Define Sorting?
7. Define Searching?
8. What is Merge Sort
9. What is Heap Trees
10. What is Binary Tree?
11. What is List?
12. What is Sparse Matrices
13. What is Data Structure?
14. What is Linked List?

Short Answer Questions

1. Explain the Primitive Data Structures.
2. Write a java Program to add two matrices.
3. Explain Stack operations.
4. Explain Priority Queue.
5. Explain about Tree implementations and applications.
6. Explain Minimal Spanning Trees?
7. Explain about Binary Searching.
8. Explain Insertion Sort.
9. Distinguish primitive and Non-primitive Data Structure. Give an example for each.
10. Write the advantages and disadvantages of array and linked list.
11. Write a note on stacks and its applications.
12. Explain the below i) Dequeues ii) Circular queues
13. Write a neat diagram explain the linked storage representation of a Binary tree.
14. Write a note on threaded binary trees.
15. How to represent the Graph in memory? Explain in detail.
16. Write an algorithm for quick sort. Explain about insertion sort.
17. Explain about Selection Sort.
18. Explain about Insertion Sort
19. Explain about Bubble Sort

Essay Questions:

1. What are the goals of data structure? Write note on linear and Non Linear data structure with examples.
2. What is Array? Explain about types of Arrays with syntax and suitable examples
3. What is the importance of sparse matrix? Write an algorithm to Transpose a given matrix in sparse form.

4. What is a stack? Explain the algorithm to create and delete items In stack.
5. What is a queue? Explain the algorithms to create and delete Items in a circular queue.
6. Write an algorithm to delete operation in any binary search tree.
7. Explain the below: i) Binary search tree ii) Heaps.
8. What is Minimal Spinning tree? Write about breadth first search Technique.
9. What is a graph? How a graph can be represented in memory? Write an algorithm to delete an edge from a graph?
10. What are the different types of search techniques? Explain the One which is more efficient among them.
11. Explain the below: i) Selection Sort ii) Bubble Sort iii) Merge Sort iv) Insertion Sort v) Heap Sort.

P. R.GOV'T. COLLEGE (AUTONOMOUS), KAKINADA
II B.Sc (CS) SEMESTER-IV
Course Code: CP4204P

SCHEME OF VALUATION (W.E.F. 2018-2019) – PAPER II

Time: 2½ Hrs

Marks: 100

Practical/Laboratory – II

- | | |
|------------------------|----------|
| 1. Internal Practicals | 40 Marks |
| 2. External Practicals | 60 Marks |

P. R.GOV.T. COLLEGE (AUTONOMOUS), KAKINADA
PRACTICALS (W.E.F. 2018-2019)
II B.Sc (CS) Course Code: CP4204P

SEMESTER-IV

DATA STRUCTURES USING JAVA LAB

1. Write a Program to implement the Linked List operations
2. Write a Program to implement the Stack operations using an array.
3. Write Programs to implement the Queue operations using an array.
4. Write Programs to implement the Stack operations using a singly linked list.
5. Write Programs to implement the Queue operations using a singly linked list.
6. Write a program for arithmetic expression evaluation
7. Write a program to implement Double Ended Queue using a doubly linked list.
8. Write a program to search an item in a given list using Linear Search and Binary Search
9. Write a program for Quick Sort
10. Write a program for Merge Sort
11. Write a program on Binary Search Tree operations(insertion, deletion and traversals)
12. Write a program for Graph traversals.

III BSC COMPUTER SCIENCE

P. R. GOVT. COLLEGE (AUTONOMOUS), KAKINADA
SYLLABUS PAPER W.E.F.2018-19

III B.Sc.(CS) V SEMESTER

SOFTWARE ENGINEERING

Course Objectives

The Objective of the course is to assist the student in understanding the basic theory of software engineering, and to apply these basic theoretical principles to a group software development project.

Course outcomes

1. Ability to gather and specify requirements of the software projects.
2. Ability to analyze software requirements with existing tools
3. Able to differentiate different testing methodologies
4. Able to understand and apply the basic project management practices in real life projects
5. Ability to work in a team as well as independently on software projects

UNIT I

INTRODUCTION: Software Engineering Process paradigms - Project management - Process and Project Metrics – software estimation - Empirical estimation models - Planning - Risk analysis - Software project scheduling.

UNIT II

REQUIREMENTS ANALYSIS : Requirement Engineering Processes – Feasibility Study – Problem of Requirements – Software Requirement Analysis – Analysis Concepts and Principles – Analysis Process – Analysis Model

UNIT III

SOFTWARE DESIGN: Software design - Abstraction - Modularity - Software Architecture - Effective modular design - Cohesion and Coupling - Architectural design and Procedural design - Data flow oriented design.

UNIT IV

USER INTERFACE DESIGN AND REAL TIME SYSTEMS :User interface design - Human factors - Human computer interaction - Human - Computer Interface design - Interface design - Interface standards.

UNIT V

SOFTWARE QUALITY AND TESTING :Software Quality Assurance - Quality metrics - Software Reliability - Software testing - Path testing – Control Structures testing - Black Box testing - Integration, Validation and system testing - Reverse Engineering and Re- engineering.

CASE tools –projects management, tools - analysis and design tools – programming tools - integration and testing tool - Case studies.

REFERENCE BOOKS

1. Roger Pressman S., “Software Engineering: A Practitioner's Approach”, 7th Edition, McGraw Hill, 2010.
2. Software Engineering Principles and Practice by Deepak Jain Oxford University Press
2. Sommerville, “Software Engineering”, Eighth Edition, Pearson Education, 2007
3. Pfleeger, “Software Engineering: Theory & Practice”, 3rd Edition, Pearson Education, 2009
4. Carlo Ghazi, Mehdi Jazayari, Dino Mandrioli, “Fundamentals of Software Engineering”, Pearson Education, 2003

Student Activity:

1. **Visit any financial organization nearby and prepare requirement analysis report**
2. **Visit any industrial organization and prepare risk chart.**

I YEAR V SEMESTER

Software Engineering Lab

I **I**

1. Studying various phases of Water-Fall Model.
2. Prepare SRS for Banking or On line book store domain problem
3. Using COCOMO model estimate effort for Banking or on line book store domain problem.
4. Calculate effort using FP oriented estimation model
5. Analyze the Risk related to the project and prepare RMMM plan.
6. Develop Time-line chart and project table using PERT or CPM project scheduling methods.
7. Draw E-R diagram, DFD, CFD and STD for the project.
8. Design of the test cases.
9. Prepare FTR. Version control and change control for software configuration item.

PROJECT & VIVA-VOCE

The objective of the project is to motivate them to work in emerging/latest technologies, help the students to develop ability, to apply theoretical and practical tools/techniques to solve real life problems related to industry, academic institutions and research laboratories.

The project is of 2 hours/week for V & VI semester duration and a student is expected to do planning, analyzing, designing, coding, and implementing the project. The initiation of project should be with the project proposal. The synopsis approval will be given by the project guides.

The project proposal should include the following:

- Title
- Objectives
- Input and output
- Details of modules and process logic
- Limitations of the project
- Tools/platforms, Languages to be used
- Scope of future application

The Project work should be either an individual one or a group of not more than three members and submit a project report at the end of the semester. The students shall defend their dissertation in front of experts during viva-voce examinations.

P. R.GOV.T. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT FOR THE YEAR 2018-2019
III B.SC (CS) 2016-2019 BATCH
Course Code: CP6207
SEMESTER-V

SUBJECT: SOFTWARE ENGINEERING

Time: 3 Hrs

PAPER- IV

Max. Marks: 70

Model blue print for the model paper and choice

S.NO	Type of Question	To be given in the Question Paper			To be answered		
		No. of Questions	Marks allotted to each question	Total Marks	No. of Questions	Marks allotted to each question	Total Marks
1	Section-A Very Short Questions	5	1	5	5	1	5
2	Section-B Short Questions	8	5	40	5	5	25
3	Section-C Essay Questions	8	10	80	4	10	40
TOTAL		21		125	TOTAL MARKS		70

$$\text{Percentage of choice given} = \frac{125 - 70}{125} \times 100 = \frac{55}{125} \times 100 = 44.00\%$$

P. R.GOV.T. COLLEGE (AUTONOMOUS), KAKINADA

III B.SC (CS) 2016-2019 BATCH

(Model paper W.E.F 2018-2019)

Course Code:CP6207

Subject: Software Engineering

Time: 3 Hrs

Paper: IV

Max. Marks:70

SEMESTER – V

SECTION - I

Answer ALL Questions

5 x 1= 5 M

1. What is Software Engineering process?
2. Define Feasibility Study?
3. Define Software Design?
4. What is User Interface Design ?
5. Define Integration Testing?

SECTION - II

Answer Any Five questions

5 x 5= 25 M

6. Explain about Software Project Scheduling?
7. Explain about Problem of Requirements?
8. Explain about Analysis Model?
9. What is Cohesion and Coupling?
10. Explain about Computer Interface Design?
11. Write about Interface Standards?
12. Explain about Re-engineering?
13. Explain about Black Box testing?

SECTION - III

Answer All Questions

4 x 10= 40 M

14. a) Explain Software Project Process and Metrics in detail
(OR)
b) Discuss in detail about Software Requirement Analysis. (OR)
15. a) Explain in detail about the Software Architecture
(OR)
b) Discuss the Data Flow oriented design. (OR)
16. a) Describe the Human Computer Interaction and Computer Interface design.
(OR)
b) Explain in detail about Quality Assurance and Quality metrics. (OR)
17. a) Explain the importance Validation and System Testing.
(OR)
b) Explain about Programming tools and Testing tools.

P. R.GOV'T. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT FOR THE YEAR 2016-2017
III B.SC (CS) 2014-2017 BATCH
Course Code: CP6207
SEMESTER-V

SUBJECT: SOFTWARE ENGINEERING

Time: 3 Hrs

PAPER- IV

Marks: 70

Model Blue print for the question paper setter

Chapter Name	Essay Questions 10 Marks	Short Questions 5 Marks	Very Short Questions 2 Marks	Marks allotted to the chapter
Module-1	2	3	1	31
Module-2	2	2	1	31
Module-3	2	1	1	21
Module-4	1	1	1	16
Module-5	1	1	1	26
Total No. of questions	8	8	5	
Total Marks Including choice				125

P.R. GOVERNMENT COLLEGE (AUTONOMOUS), KAKINADA
QUESTION BANK FOR THE YEAR 2018-19

III B.SC (CS) 2016-2019 BATCH

Course Code: CP6207

SEMESTER-V

Subject: SOFTWARE ENGINEERING

Essay Questions

1. Discuss in detail about Software Requirement Analysis.
2. Explain Software Project Process and Metrics in detail.
3. Describe about the Project Management.
4. Explain in detail about the Software Architecture.
5. Discuss the Data Flow oriented design.
6. Describe the Human Computer Interaction and Computer Interface design.
7. Explain about the Software Quality and Testing.
8. Explain about Computer Interface Design Interface Standards.
9. Discuss in detail about CASE tools in Software Engineering.
- 10 Explain the importance Validation and System Testing.
- 11 Explain about Programming tools and Testing tools .

Short Questions

1. Explain about Software Project Scheduling.
2. Describe about Analysis Process.
3. Explain about Problem of Requirements.
4. What is Cohesion and Coupling.
5. Explain about Software Requirement processes.
6. Explain the Architectural design.
7. Write about Interface Standards.
8. Explain about Computer Interface Design
9. Describe various Human factors.
10. Explain about Re-engineering
11. Explain about Black Box testing
12. Explain about Analysis Model

Very Shot Questions.

1. What is Software Estimation
2. What is Software Engineering process
3. Define Feasibility Study
4. Define Integration Testing
5. Define System Analysis
6. Define Testing.
7. Define Verification.
8. Define User Interface Design.
9. Define Path Testing

10. Define Software Reliability.
11. Define Data Flow Diagram.

P.R.GOVERNMENT COLLEGE (AUTONOMOUS), KAKINADA
III B.SC (CS) 2016-2019 BATCH
Course Code: CP6207
SEMESTER-V

Subject: Software Engineering

Credits: 01

Project Work : 50Marks

Internal Viva 15 Marks

External Viva 35 Marks

PR GOVT COLLEGE (A)::KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
III B.Sc(CS)-SEMESTER-V
Paper-V: Data Base Management System

Course Objective:

Design & develop database for large volumes & varieties of data with optimized data processing techniques.

Course Outcomes

On completing the subject, students will be able to:

1. Design and model of data in database.
2. Store, Retrieve data in database.

UNIT I

Overview of Database Management System: Introduction, file-based system, Drawbacks of file-Based System ,Data and information, Database, Database management System, Objectives of DBMS, Evaluation of Database management System, Classification of Database Management System, DBMS Approach, advantages of DBMS, data models, Components and Interfaces of Database Management System. Database Architecture, Situations where DBMS is not Necessary.

UNIT II

Entity-Relationship Model: Introduction, the building blocks of an entity relationship diagram, classification of entity sets, attribute classification, relationship degree, relationship classification, reducing ER diagram to tables, enhanced entity-relationship model (EER model), generalization and specialization, **IS A** relationship and attribute inheritance, multiple inheritance, constraints on specialization and generalization, aggregation and composition, entity clusters, connection types, advantages of ER modelling.

UNIT III

Relational Model: Introduction, CODD Rules, relational data model, concept of key, relational integrity, relational algebra, relational algebra operations, advantages of relational algebra, limitations of relational algebra, relational calculus, tuple relational calculus, domain relational Calculus (DRC). QBE

UNIT IV

Structured Query Language: Introduction, History of SQL Standard, Commands in SQL, Data Types in SQL, Data Definition Language, Selection Operation, Projection Operation, Aggregate functions, Data Manipulation Language, Table Modification Commands, Table Truncation, Imposition of Constraints, Join Operation, Set Operation, View, Sub Query, Embedded SQL,

UNIT V

PL/SQL: Introduction, Shortcoming in SQL, Structure of PL/SQL, PL/SQL Language Elements, Data Types, Operators Precedence, Control Structure, Steps to Create a PL/SQL, Program, Iterative Control, Cursors, Steps to create a Cursors, Procedure, Function, Packages, Exceptions Handling, Database Triggers, Types of Triggers.

Reference Books

1. “Database System Concepts” by Abraham Silberschatz, Henry Korth, and S. Sudarshan, McGrawhill, 2010, 9780073523323
2. “Database Management Systems” by Raghu Ramakrishnan, McGrawhill, 2002,
3. Fundamentals of Relational Database Management Systems by S. Sumathi, S. Esakkirajan, Springer Publications
4. “An Introduction to Database Systems” by Bipin C Desai
5. “Principles of Database Systems” by J. D. Ullman
6. “Fundamentals of Database Systems” by R. Elmasri and S. Navathe

Student Activity:

1. **Create your college database for placement purpose.**
2. **Create faculty database of your college with their academic performance scores**

PR GOVT COLLEGE (A)::KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
III B.Sc(CS)-SEMESTER-V
DATABASE MANAGEMENT SYSTEMS LAB

1. Draw ER diagrams for train services in a railway station
2. Draw ER diagram for hospital administration
3. Creation of college database and establish relationships between tables
4. Write a view to extract details from two or more tables
5. Write a stored procedure to process students results
6. Write a program to demonstrate a function
7. Write a program to demonstrate blocks, cursors & database triggers.
8. Write a program to demonstrate Joins
9. Write a program d
10. Write a program to demonstrate of Aggregate functions
11. Creation of Reports based on different queries
12. Usage of file locking table locking, facilities in applications.

PR GOVT COLLEGE (A)::KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
III B.Sc(CS)-SEMESTER-V
Paper-V: Data Base Management System

Time: 3 Hrs

Marks:70

Marks: 70

Model blue print for the model paper and choice

S.NO	Type of Question	To be given in the Question Paper			To be answered		
		No. of Questions	Marks allotted to each question	Total Marks	No. of Questions	Marks allotted to each question	Total Marks
1	Section-A Very Short Questions	5	1	5	5	1	5
2	Section-B Short Questions	8	5	40	5	5	25
3	Section-C Essay Questions	8	10	80	4	10	40
TOTAL MARKS				125	TOTAL MARKS		70

PR GOVT COLLEGE (A)::KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
III B.Sc(CS)-SEMESTER-V
Paper-V: Data Base Management System

Time:3Hrs

Max. Marks: 70

SECTION - I

Answer ALL questions

5 x 1M= 5 M

1. Define DBMS
2. Define an entity set
3. Define foreign key
4. Define Sub Query
5. Define Cursor

SECTION - II

Answer ANY FIVE questions
5M= 25M

5 x

6. Write about objectives of DBMS
7. Write about Data Independance
8. Write about attribute classification in ER Model
9. Explain about relational model
10. Explain about different datatypes in SQL
11. Write about select statement with an example
12. Write about trigger
13. Write about cursor statement in PL/SQL

SECTION - III

Answer ALL questions
40M

4 x 10M =

14. a) Explain about advantages and disadvantages of DBMS
(OR)
b) Explain about components and interfaces of DBMS
15. a) What is E-R diagram? What are the building blocks of E-R diagram
(OR)
b) Explain about relational operators in relational algebra
16. a) Explain about DDL,DML,DCL statements in SQL
(OR)
b) Explain about views in details

17. a) Explain about loop control structures in PL/SQL?

(OR)

b) What is meant by a cursor? Explain about implicit and explicit cursors with examples

PR GOVT COLLEGE (A)::KAKINADA
DEPARTMENT OF COMPUTER SCIENCE

III B.Sc(CS)-SEMESTER-V

Paper-V: Data Base Management System

Time:3Hrs

Max. Marks: 70

Model Blue print for the question paper setter

Chapter Name	Essay Questions 10 Marks	Short Questions 5 Marks	Very Short Questions 1 Marks	Marks allotted to the chapter
Module-1	2	2	1	31
Module-2	1	1	1	16
Module-3	1	1	1	16
Module-4	2	2	1	31
Module-5	2	2	1	31
Total No. of questions	8	8	5	
Total Marks Including choice				125

PR GOVT COLLEGE (A)::KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
III B.Sc(CS)-SEMESTER-V
Paper-V: Data Base Management System

QUESTION BANK

ESSAY QUESTIONS

1. Explain the advantages of DBMS over conventional file processing?
2. Explain DBMS Architecture in detail?
3. What is meant by DBMS? Explain advantages of DBMS?
4. Explain the components of Database System with neat diagram?
5. What is Data Model? Explain about relational data model in detail?
6. What is E-R model? What are the symbols used? Explain with an example?
7. Distinguish between Network and Hierarchical data model?
8. What is Normalization? Explain 1 NF, II NF and III NF with examples?
9. What is a Constraint? Explain Different types Constraints?
10. Explain about Relational keys with examples?
11. Explain about Relational Algebra and explain different operations available in it?
12. What is a Transaction? Why concurrency control is needed for Transactions?
13. Explain concurrency control based on serializability?
14. Explain Lock based protocols for concurrency control?
15. Define query? Explain select, where, order by, group by and having clauses with suitable examples?
16. Explain DDL, DML and DCL in SQL?
17. Explain about aggregate functions in SQL with examples?
18. a) Write about different joins in SQL?
b) What are different data types in SQL?

Short Questions

- 19 Define DBMS?
- 20 Explain about Database Users.
- 21 What are the Advantages of DBMS.?
- 22 Explain about Data independency?
- 23 Describe the three levels of data abstraction?
- 24 Explain about Concurrency control?
- 25 What is Join? Explain about left outer join.
26. Explain about Sub Queries?
27. Explain the Set operators?
28. Write about ACID Properties?
29. Explain Serializability?
30. Write about Select Statement?
31. Explain about Data constraints?

Very Short Questions:

32. Explain the functions of DBA.
- 33) Advantages of DBMS.
- 34) Define E-R diagrams.
- 35) Define Normal form.
- 36) Define foreign key.

- 37) Define Transaction properties.
- 38) Define Concurrency control.
- 39) What is Join?
- 40) Define set operators?

P.R.GOV.T.COLLEGE (A)::KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
III B.Sc (CS) Semester -VI
Paper-VII: Elective-A
Operating Systems

Course Objectives

1. To understand the services provided by and the design of an operating system.
2. To understand the structure and organization of the file system.
3. To understand what a process is and how processes are synchronized and scheduled.
4. To understand different approaches to memory management.
5. Students should be able to use system calls for managing processes, memory and the file system.

Course Outcomes

1. Analyze the concepts of processes in operating system and illustration of the scheduling of processor for a given problem instance.
2. Identify the dead lock situation and provide appropriate solution so that protection and security of the operating system is also maintained.
3. Analyze memory management techniques, concepts of virtual memory and disk scheduling.

UNIT - I

Operating System Introduction: Operating Systems Objectives and functions, Computer System Architecture, OS Structure, OS Operations, Evolution of Operating Systems - Simple Batch, Multi programmed, time shared, Parallel, Distributed Systems, Real-Time Systems, Operating System services.

UNIT - II

Process and CPU Scheduling - Process concepts - The Process, Process State, Process Control Block, Threads, Process Scheduling - Scheduling Queues, Schedulers, Context Switch, Preemptive Scheduling, Dispatcher, Scheduling Criteria, Scheduling algorithms, Case studies: Linux, Windows.

Process Coordination - Process Synchronization, The Critical section Problem, Synchronization Hardware, Semaphores, and Classic Problems of Synchronization, Monitors, Case Studies: Linux, Windows.

UNIT - III

Memory Management and Virtual Memory - Logical & physical Address Space, Swapping, Contiguous Allocation, Paging, Structure of Page Table. Segmentation, Segmentation with Paging, Virtual Memory, Demand Paging, Performance of Demanding Paging, Page Replacement Page Replacement Algorithms, Allocation of Frames.

UNIT - IV

File System Interface - The Concept of a File, Access methods, Directory Structure, File System Mounting, File Sharing, Protection, File System Structure, Mass Storage Structure - Overview of Mass Storage Structure, Disk Structure, Disk Attachment, Disk Scheduling.

UNIT - V

Deadlocks - System Model, Deadlock Characterization, Methods for Handling Deadlocks, Deadlock Prevention, Deadlock Avoidance, Deadlock Detection and Recovery from Deadlock.

. REFERENCES BOOKS:

1. Operating System Principles, Abraham Silberchatz, Peter B. Galvin, Greg Gagne 8th Edition, Wiley Student Edition.
2. Principles of Operating Systems by Naresh Chauhan, OXFORD University Press
3. Operating systems - Internals and Design Principles, W. Stallings, 6th Edition, Pearson.
4. Modern Operating Systems, Andrew S Tanenbaum 3rd Edition PHI.
5. Operating Systems A concept - based Approach, 2nd Edition, D. M. Dhamdhare, TMH.
6. Principles of Operating Systems, B. L. Stuart, Cengage learning, India Edition.
7. Operating Systems, A. S. Godbole, 2nd Edition, TMH

Student Activity:

1. Load any new operating system into your computer.
2. Partition the memory in your system
3. Create a semaphore for process synchronization

Operating Systems Lab

Objectives:

- To use linux operating system for study of operating system concepts.
- To write the code to implement and modify various concepts in operating systems

Outcomes:

- The course objectives ensure the development of students applied skills in operating systems related areas.
- Students will gain knowledge in writing software routines modules or implementing various concepts of operating system.

List of Experiments:

1. Usage of following commands
Ls,pwd,ttty,cat,who,who am I,rm, mkdir,rmdir,touch,cd.
2. Usage of following commands
Cal,cat(append),cat(concatenate),mv,cp,man,date.
3. Usage of following commands
Chmod,grep,tput(clear,highlight),bc.
4. Write a shell script to check if the number entered at the command line is Prime or not
5. Write a shell script to modify “cal” command to display calendars of the specified months.
6. Write a shell script to modify “cal” command to display calendars of the specified range of months.
7. Write a shell script to accept a login name. If not a valid login name display message “entered login name is invalid”
8. Write a shell script to display date in the mm/dd/yy format.
9. To implement the FCFS Algorithm.
10. To implement the shortest job First Algorithm.

11. To implement the priority algorithm.
12. To implement the round robin Algorithm.
13. To implement the FIFO page replacement algorithm

PR GOVT COLLEGE (A)::KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
III B.Sc(CS)-SEMESTER-VI
Paper-VII: Operating System (Elective-A)

Time: 3 Hrs

Marks:70

Marks: 70

Model blue print for the model paper and choice

S.NO	Type of Question	To be given in the Question Paper			To be answered		
		No. of Questions	Marks allotted to each question	Total Marks	No. of Questions	Marks allotted to each question	Total Marks
1	Section-A Very Short Questions	5	1	5	5	1	5
2	Section-B Short Questions	8	5	40	5	5	25
3	Section-C Essay Questions	8	10	80	4	10	40
TOTAL MARKS				125	TOTAL MARKS		70

PR GOVT COLLEGE (A)::KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
III B.Sc(CS)-SEMESTER-VI

Paper-VII: Operating System (Elective-A)

Time:3Hrs

Max. Marks: 70

SECTION - I

Answer ALL questions

5 x 1M= 5 M

1. Define operating system
2. Define a processing?
3. Define deadlock?
4. Define DMA?
5. Define File?

SECTION - II

Answer ANY FIVE questions

5 x 5M= 25M

6. Define Operating System and Explain Operating System Functions.
7. What are the differences between Real Time and typical Operating System?
8. Explain process scheduling.
9. Explain about semaphores.
10. What are the differences between paging and segmentation?
11. Write about allocation of frames in virtual memory management.
12. Discuss various file access methods.
13. Explain about Deadlock and Recovery.

SECTION - III

Answer ALL questions

4 x 10M = 40M

14. a) Explain Computer System Architecture.
(Or)
b) Explain the various operating system services.
15. a) Explain preemptive scheduling algorithms.
(Or)
b) Write about classic problems of synchronization.
16. a) Briefly explain about paging and segmentation in memory management.
(Or)
b) Explain page replacement algorithms.
17. a) Write about Directory Structure.
(Or)
b) Explain Disk Scheduling.
18. a) Define Deadlock. Explain Deadlock characterization and methods for handling Deadlocks.
(Or)
b) Explain about Deadlock Avoidance.

PR GOVT COLLEGE (A)::KAKINADA
DEPARTMENT OF COMPUTER SCIENCE

III B.Sc(CS)-SEMESTER-V

Paper-V Operating System (Elective-A)

Time:3Hrs

Max. Marks: 70

Model Blue print for the question paper setter

Chapter Name	Essay Questions 10 Marks	Short Questions 5 Marks	Very Short Questions 1 Marks	Marks allotted to the chapter
Module-1	2	2	1	31
Module-2	1	1	1	16
Module-3	1	1	1	16
Module-4	2	2	1	31
Module-5	2	2	1	31
Total No. of questions	8	8	5	
Total Marks Including choice				125

P.R. GOVT. COLLEGE (A), KAKINADA
III B.Sc(CS) QUESTION BANK (W.E.F 2018-19)

Subject: Operating Systems

Paper: VII Elective-A

SEMESTER – VI

Essay Questions:

1. Explain the features of an Operating system?
2. Explain any four types of Operating systems?
3. Explain the structure of an Operating system?
4. Define processing and explain process management ?
5. What is time sharing operating system and write advantages of time sharing systems?
6. What is virtual memory and explain its advantages?
7. Write about file access methods?
8. Define deadlock and explain its?
9. Explain classification of virus?
10. Explain direct memory access concept?

SHRT:

1. Explain the purpose of operating system?
2. How to manage software?
3. How can you get the security status of PC?
4. Explain about services of an operating system?
5. Difference between multi programming and multiprocessing?
6. Explain CPU Scheduling?
7. Explain time sharing system?
8. What is linux and explain its?
9. Write the disadvantage of virtual memory?
10. What are the file operations?
11. Explain about type of viruses?
12. Explain about software security?

VERY SHORT

1. Define operating system?
2. Define booting?
3. Define processing ?
4. Define file?
5. Define privacy?
6. Define virus?
7. What is multi tasking?
8. What is multi programming ?
9. What is segmentation?
10. What is user interface?
11. What is paging?
12. Define deadlock?

PR GOVT COLLEGE (A) :: KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
III BSC (CS) -SEMESTER –VI
(Cluster 2) Paper-VIII : Elective –B-1

Distributed Systems

Course Objectives

To expose the fundamentals of distributed computer systems, assuming the availability of facilities for data transmission.

To discuss multiple levels of distributed algorithms, distributed file systems, distributed databases, security and protection.

Course Outcomes

Create models for distributed systems.

Apply different techniques learned in the distributed system.

UNIT I

Introduction to Distributed Computing Systems, System Models, and Issues in Designing a Distributed Operating System, Examples of distributed systems.

UNIT II

Features of Message Passing System, Synchronization and Buffering, Introduction to RPC and its models, Transparency of RPC, Implementation Mechanism, Stub Generation and RPC Messages, Server Management, Call Semantics, Communication Protocols and Client Server Binding.

UNIT III

Introduction, Design and implementation of DSM system, Granularity and Consistency Model, Advantages of DSM, Clock Synchronization, Event Ordering, Mutual exclusion, Deadlock, Election Algorithms.

UNIT IV

Task Assignment Approach, Load Balancing Approach, Load Sharing Approach, Process Migration and Threads.

UNIT V

File Models, File Accessing Models, File Sharing Semantics, File Caching Schemes, File Replication, Atomic Transactions, Cryptography, Authentication, Access control and Digital Signatures.

Reference Books

1. Pradeep. K. Sinha: “ Distributed Operating Systems: Concepts and Design ” , PHI, 2007.
2. George Coulouris, Jean Dollimore, Tim Kindberg: “ Distributed Systems” , Concept and Design, 3rd Edition, Pearson Education, 2005.

Student Activity

1. Implementation of Distributed Mutual Exclusion Algorithm.
2. Create a Distributed Simulation Environment.

Distributed Systems Lab

Objective:

It covers all the aspects of distributed system. It introduce its readers to basic concepts of middleware, states of art middleware technology

Outcomes:

1. Students will get the concepts of Inter-process communication
 2. Students will get the concepts of Distributed Mutual Exclusion and Distributed Deadlock Detection algorithm.
-
1. To study client server based program using RPC.
 2. To study Client server based program using RMI.
 3. To study Implementation of Clock Synchronization (Logical/Physical)
 4. To study Implementation of Election algorithm.
 5. To study Implementation of Mutual Exclusion algorithms.
 6. To write program multi-threaded client/server processes.
 7. To write program to demonstrate process/code migration.

PR GOVT COLLEGE (A):: KAKINADA

B.Sc(Computer Science)

III B.Sc Computer Science VI-Semester

MODEL QUESTION PAPER

Paper - VIII : Elective – II : (Cluster B) DISTRIBUTED SYSTEMS

Time : 3 Hours

Max.Marks:70

SECTION-A

Answer the following questions:

5x

1=5M

1. Define Distributed System?
2. Define Implementation mechanism?
3. Define DSM?
4. What is Load Balancing approach?
5. What is Access control?

SECTION – B

Answer any **FIVE** of the following questions

5x5=25M

6. What is a Distributed Computing System? Write its characteristics.
7. Write about various features of a message passing system.
8. Explain Synchronization.
9. What is Distributed Shared Memory(DSM)? Write the advantages of DSM.
10. Explain about Deadlock.
11. Write about the features of Process Migration.
12. Write about File Models.
13. Write about Authentication.

SECTION - C

Answer **ALL** the following questions.

4 x 10 M = 40 M

14. a) Write about various Distributed Computing System Models. (or)
b) Describe issues in designing a Distributed Operating System.
15. a) Explain RPC implementation mechanism.
(or)
b) Write about Communication Protocols.
16. a) Explain about Event Ordering in Distributed Systems. (or)
a. Write about Election Algorithm.
17. a) Explain about Thread in Distributed System.
(or)
b) Write about Load Balancing Approach.

P. R.GOV'T. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT FOR THE YEAR 2018-2019
III B.Sc Semester- VI

SUBJECT: (Cluster B) DISTRIBUTED SYSTEMS
PAPER- VIII

Time: 3 Hrs
Marks: 70

Model Blue print for the question paper setter

Chapter Name	Essay Questions 10 Marks	Short Questions 5 Marks	Very Short Questions 1 Marks	Marks allotted to the chapter
Module-1	2	2	1	31
Module-2	2	2	1	31
Module-3	1	2	1	21
Module-4	1	1	1	16
Module-5	2	1	1	26
Total No. of questions	8	8	5	
Total Marks Including choice				125

PR GOVT COLLEGE (A)::KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
III B.Sc(CS)-SEMESTER-VI

Paper - VIII : Elective – II : (Cluster B) DISTRIBUTED SYSTEMS

Time: 3 Hrs

Marks:70

Model blue print for the model paper and choice

S.NO	Type of Question	To be given in the Question Paper			To be answered		
		No. of Questions	Marks allotted to each question	Total Marks	No. of Questions	Marks allotted to each question	Total Marks
1	Section-A Very Short Questions	5	1	5	5	1	5
2	Section-B Short Questions	8	5	40	5	5	25
3	Section-C Essay Questions	8	10	80	4	10	40
TOTAL MARKS				125	TOTAL MARKS		70

PR GOVT COLLEGE (A) :: KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
III BSC (CS) -SEMESTER –VI
(Cluster 2) Paper-VIII : Elective –B-2

Cloud Computing

Course Objectives:

The student will learn about the cloud environment, building software systems and components that scale to millions of users in modern internet, cloud concepts capabilities across the various cloud service models including Iaas, Paas, Saas, and developing cloud based software applications on top of cloud platforms.

Course Outcomes

1. Compare the strengths and limitations of cloud computing
2. Identify the architecture, infrastructure and delivery models of cloud computing
3. Apply suitable virtualization concept.
4. Choose the appropriate cloud player , Programming Models and approach.
5. Address the core issues of cloud computing such as security, privacy and interoperability
6. Design Cloud Services and Set a private cloud

Unit 1

Cloud Computing Overview – Origins of Cloud computing – Cloud components - Essential characteristics – On-demand self-service , Broad network access , Location independent resource pooling , Rapid elasticity , Measured service

Unit II

Cloud scenarios – Benefits: scalability , simplicity , vendors ,security. Limitations – Sensitive information - Application development – Security concerns - privacy concern with a third party - security level of third party - security benefits Regularity issues: Government policies

Unit III

Cloud architecture: Cloud delivery model – SPI framework , SPI evolution

Software as a Service (SaaS): SaaS service providers – Google App Engine, Salesforce.com and google platfrom – Benefits – Operational benefits - Economic benefits

– Evaluating SaaS **Platform as a Service (PaaS)**: PaaS service providers –Salesforce.com
– Services and Benefits

Unit IV

Infrastructure as a Service (IaaS): IaaS service providers – Amazon EC2 , GoGrid —
– Benefits

Cloud deployment model : Public clouds – Private clouds – Community clouds -
Hybrid clouds - Advantages of Cloud computing

Unit V

Virtualization: Virtualization and cloud computing - Need of virtualization – cost ,
administration , fast deployment , reduce infrastructure cost - limitations

Types of hardware virtualization: Full virtualization - partial virtualization - para
virtualization

Desktop virtualization: Software virtualization – Memory virtualization - Storage
virtualization – Data virtualization – Network virtualization **Microsoft Implementation:**
Microsoft Hyper V – Vmware features and infrastructure – Virtual Box - Thin client

Reference Books

1. Cloud computing a practical approach - Anthony T.Velte , Toby J. Velte Robert
Elsenpeter TATA McGraw- Hill , New Delhi - 2010
2. Cloud Computing: Web-Based Applications That Change the Way You Work and
Collaborate Online - Michael Miller - Que 2008
3. Cloud Computing, Theory and Practice, Dan C Marinescu, MK Elsevier.
4. Cloud Computing, A Hands on approach, Arshadeep Bahga, Vijay Madiseti,
University Press
5. Mastering Cloud Computing, Foundations and Application Programming, Raj Kumar
Buyya, Christenvecctiola, S Tammarai selvi, TMH

Student Activity:

1. Prepare the list of companies providing cloud services category wise.
2. Create a private cloud using local server

Cloud Computing Lab

Outcomes: Learner will be able to...

1. Appreciate cloud architecture
2. Create and run virtual machines on open source OS
3. implement Infrastructure , storage as a Service.

Use Eucalyptus or Open Nebula or equivalent to set up the cloud and demonstrate.

1. Find procedure to run the virtual machine of different configuration. Check how many virtual machines can be utilized at particular time.
2. Find procedure to attach virtual block to the virtual machine and check whether it holds the data even after the release of the virtual machine.
3. Install a C compiler in the virtual machine and execute a sample program.
4. Show the virtual machine migration based on the certain condition from one node to the other.
5. Find procedure to install storage controller and interact with it.

1. Introduction to cloud computing.
2. Creating a Warehouse Application in Sales Force.com.
3. Creating an Application in Sales Force.com using Apex programming Language.
4. Implementation of SOAP web services in C#/ JAVA Applications.
5. Implementation of Para- Virtualization using VM ware's workstation/ Oracle's Virtual Box and Guest O.S.

PR GOVT COLLEGE (A):: KAKINADA

DEPT OF COMPUTER SCIENCE

B.Sc(Computer Science)

III B.Sc Computer Science VI-Semester

MODEL QUESTION PAPER

Paper - VIII : Elective – II : (Cluster B) B1. CLOUD COMPUTING

Time : 3 Hours

Max.Marks:70

SECTION-A

Answer the following questions:

5x 1=5M

1. What is cloud computing?
2. Define scalability.
3. Define SPI evolution.
4. What is rapid elasticity?
5. What is data virtualization?

SECTION – B

Answer any FIVE of the following questions

5x5=25M

6. Explain the design of cloud computing?
7. What are the regularity issues?
8. Explain security concerns in cloud
9. Explain the cloud computing architecture
10. Write about various PaaS providers
11. What is IaaS? List various IaaS providers
12. What is virtualization? What is the need for virtualization?
13. Write about thin client

SECTION - C

Answer ALL the following questions.

4 x 10 = 40 M

14. a) What is Cloud Computing? Explain the components of Cloud Computing. (or)
b) Explain various characteristics of Cloud Computing.
15. a) Explain various Cloud scenarios.
(or)
b) What are the benefits and limitations of Cloud scenerios?
16. a) Explain about SPI frames work.
(or)
b) Write a note on about the following SaaS providers
i) Google App Engine ii) Salesforce.com
17. a) Explain various Cloud deployment models (or)
b) What are the advantages and disadvantages of Cloud Computing?

P. R.GOVT. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT FOR THE YEAR 2018-2019
III B.Sc Semester- VI

SUBJECT: CLOUD COMPUTING (Elective-B)

Time: 3

Hrs

PAPER- VIII

Marks: 70

Model Blue print for the question paper setter

Chapter Name	Essay Questions 10 Marks	Short Questions 5 Marks	Very Short Questions 1 Marks	Marks allotted to the chapter
Module-1	2	2	1	31
Module-2	2	2	1	31
Module-3	1	2	1	21
Module-4	1	1	1	16
Module-5	2	1	1	26
Total No. of questions	8	8	5	
Total Marks Including choice				125

PR GOVT COLLEGE (A)::KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
III B.Sc(CS)-SEMESTER-VI
Paper-VIII: CLOUD COMPUTING (Elective-B)

Time: 3 Hrs

Marks:70

Model blue print for the model paper and choice

S.NO	Type of Question	To be given in the Question Paper			To be answered		
		No. of Questions	Marks allotted to each question	Total Marks	No. of Questions	Marks allotted to each question	Total Marks
1	Section-A Very Short Questions	5	1	5	5	1	5
2	Section-B Short Questions	8	5	40	5	5	25
3	Section-C Essay Questions	8	10	80	4	10	40
TOTAL MARKS				125	TOTAL MARKS		70

