

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

DEPARTMENT OF COMPUTER SCIENCE

Board of Studies

2019-2020

P R GOVERNMENT COLLEGE [AUTONOMOUS] KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
BOARD OF STUDIES 2019-2020

The sixteenth meeting of Board of Studies **COMPUTER SCIENCE** has been conducted in the Department of Computer Science on __15__ April, 2019 at _____ to discuss the following.

AGENDA

1. Department activities for 2019-20 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 2019-20.
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 2019-20.
11. Conduct practical examination semester wise for three years.

12. Any other matter.

RESOLUTIONS

- 1) The Seventeenth meeting of Board of Studies **COMPUTER SCIENCE** has been conducted in the Department of Computer Science on __15__April, 2019 at _____ to discuss the following.
- 2) Department action plan 2019-20 submitted in annexure.
- 3) Pedagogy implementation w.e.f admitted batch 2019-20.
- 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 2019-20.
- 6) Resolved to conduct practical examination semester wise for all Three years.

MEMBERS PRESENT

1 Mr. G.B.V.Padmanadh
Lecturer In-charge (Computers Science)
P. R. Govt College (A)
Kakinada

2 Smt. Dr.M. Kamala Kumari
Associate Professor
Dept of Computer Science
AKNU
Rajahmundry

3 Smt .N.Naga Subrahmanyesweri
Lecturer In Computer Science
AS D Women's College
Kakinada

4 Dr. N. Sreenivas
Lecturer in Zoology
P R Govt (A) College
Kakinada

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

6 G. Aneetha
Lecturer in Computer Science
P R Govt (A) College
Kakinada

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

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

Chair man

University Nominee 15/4/19

Subject Expert N.N.S. Sengupta 14

Member

Member 15.04.19

G. Aneetha
Member 15/4/19

G. Sunitha
Member 15/4/19

Member 15/4/19

STUDENT REPRESENTATIVES

- | | |
|---------------------|---------------|
| 1. T Teja Kumar | III MCCS, 85% |
| 2. M R Ch K Sivani | III MCCS, 80% |
| 3. S Sravani | III MPCS, 80% |
| 4. M Raju | III MECS, 80% |
| 5. R Jeeveen | III MPCS, 84% |
| 6. A Bindhu Madhavi | III MCCS, 83% |

PANEL OF NAMES FOR APPOINTMENT OF EXAMINERS/PAPERSETTERS

2019-20

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	9 Years	C/o college

		0884-5592875		
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 2019-2020

Course: B.Sc (Computer Science)

Subject: Computer Science

S.No .	Semester	Course code	MODULE	Course Title	Hrs./W eek	Max. Marks			Credit s
						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	40	60	100	3
5	IV	CP4204	CORE-4	Data Structures Through Java	4	40	60	100	3
6	Practical	CP4204P	Practicals	Basics of Java Programming, Data Structures Through Java	3	40	60	100	2
7	V	CP5207	ADVANCED CORE-5	Database Management System	3	40	60	100	3
			Practical	DBMS-Lab	3		50	50	2
8		CP5208A	Theory	Software Engineering	3	40	60	100	3
			Practical	SE-Lab	3		50	50	2
			ELECTIVE-I						
10	VI		A. Operating Systems		3	40	60	100	3
			Operating Systems-Lab		3		50	50	2
11			B. Computer Networks		3	40	60	100	2
			Computer Networks-Lab		3		50	50	2
12			C. Web Technologies		3	40	60	100	3
			Web Technologies-Lab		3		50	50	2
			ELECTIVE-I(Cluster A)						
13			A1 Foundations of Data science		3	40	60	100	3
			A1 Foundations of Data		3		50	50	2

			science-Lab						
14			A2.Big Data Technology		3	40	60	100	3
			A2.Big Data Technology-Lab(Hadoop)		3		50	50	2
			ELECTIVE-II(Cluster B)						
			B1.Distributed Systems		3	40	60	100	3
			Distributed Systems-Lab		3		50	50	2
			B2.Cloud Computing		3	40	60	100	3
			Cloud Computing-Lab		3		50	50	2
			ELECTIVE-II(Cluster C)						
			C1.PHP-My Sql & Wordpress		3	40	60	100	3
			PHP-My Sql & Wordpress-Lab		3		50	50	2
			C2.Advanced Java Script:JQuery,Ajax,angular JS & JSON		3	40	60	100	3
			Advanced JavaScript -Lab		3		50	50	2
			Project		5	50	100	150	5
TOTAL					46	360	840	1200	30
16	II		Foundation Course	Foundation Course ICT-I	2		50	50	2
17	III		Foundation Course	Foundation Course ICT-II	2		50	50	2

I BSC
COMPUTER SCIENCE

I B.Sc. – Computer Science / Semester- I (W.E.F. 2019-2020)
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) **Types of Software:** system software, Application software, commercial, open source, domain and free ware software.
- 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) **Number systems:** working with binary, octal, decimal and Hexa decimal numbering system.
- 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, palettes, 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.
3. Photoshop: Beginner's Guide for Photoshop - Digital Photography, Photo Editing, Color Grading & Graphic...19 February 2016 by David Maxwell.

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

MODEL BLUE PRINT FOR THE YEAR 2019-2020

I B.SC (CS) 2019-2022 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 2019-2020
I B.Sc (CS) 2019-2022 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.GOV'T. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT FOR THE YEAR 2019-2020
I B.SC (CS) 2019-2022 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) 2019-2022 BATCH

SEMESTER-I

COURSE CODE:CP1204

COMPUTER FUNDAMENTALS AND PHOTOSHOP

Essay Questions:

MODULE--I:

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 input and output device of computer?
4. How many generations are there till date ? Explain in each generation in detail.

MODULE--II:

1. Explain about different secondary storage devices
2. Explain about memory unit of computer in detail.
3. What is an octal number system? Explain the procedure to convert an octal number into its binary.
4. Explain various options in Start menu

MODULE--III:

1. Explain how to create, and save and close a document in Photoshop
2. Explain tool box in photoshop?
3. Explain how to change the image size and resolution in Photoshop
4. Explain how to crop and straighten an image in Photoshop

MODULE--IV:

1. Explain how to create, hide and delete layers in Photoshop.
2. Explain how to create ads in Photoshop
3. Explain the working procedure of the tools
 - a. Brushes.
 - b. Pencil and Erasers.
 - c. Painting with selections

Short Answer Questions:

MODULE--I:

1. Explain Write any five features of WINDOWS.
2. Explain briefly about micro computers
3. Explain about plotter ?
4. Explain about system software and application software

MODULE--II:

1. Explain about Hexa decimal number system.
2. Explain about RAM, ROM and EPROM.
3. Explain about Cache memory.

MODULE--III:

1. Explain how to change background in photoshop.
2. Explain how to revert files in photoshop.
3. Explain briefly about patch tool in photoshop.

MODULE--IV:

1. Explain briefly about rulers in photoshop.
2. Explain how to cut, copy and paste data in photoshop.
3. Explain briefly about blend modes in photoshop

Very Short Questions:

MODULE--I:

1. What is icon?
2. What is primary memory?
3. What is software?

MODULE--II:

1. Define application software?
2. Define computer?
3. Write about virus?

MODULE--III:

1. How can you open a new file in Photoshop?
2. How do you rotate an image?
3. How do you crop an image?

MODULE--IV:

1. How do you resize an image?
2. Define Gradient?
3. What is Drawing Palette?

I B.Sc. – Computer Science / Semester- II (W.E.F. 2019-2020)

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 2019-2020

I B.SC (CS) 2019-2022 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 2019-2020

I B.Sc (CS) 2019-2022 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.GOVT. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT FOR THE YEAR 2019-2020
I B.SC (CS) 2019-2022 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 2019-2020
I B.SC (CS) 2019-2022 BATCH
Course: Programming in C
Question Bank
Course Code:CP2204
Module I

Essay Questions

1. Explain various operators in C with example.
2. Explain various Conditional Control Statements in C with example.

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.

Very short Answer Questions

1. What is a keyword in C?
2. What is the use of go to statement give the syntax of it.
3. Write the syntax for switch statement?

Module II

Essay Questions

1. Explain various Looping Statements in C with example.
2. What is a function? Explain in detail
3. Write about different categories of functions in C.
4. Explain various string handling Functions in C.

Short Answer Question

1. Write I/O function in C language
2. Write briefly about any five character test function in C.
3. Explain two dimensional arrays to functions.
4. Explain how to pass arrays to functions.
5. Explain call by reference with example.
6. What is recursion? What advantage is there in its use?

Very short Answer Questions

1. Define an array.
2. What is call by value?
3. What is call by reference ?

Module III

Essay Questions

1. What is structure? Give declaration of structures. Explain structure within structure.
2. What is union? Explain in detail.
3. Explain the storage classes in c?

Short Answer Question

1. Write the difference between structure and union?.
2. Write about storage classes in C.

3. Write about structure arrays give example?

Very short Answer Questions

1. Define structure.
2. Define union.
3. What is extern variable?.

Module IV

Essay Questions

1. Explain in detail about pointers.
2. Explain about basic file operators in C.
3. Explain about pointer to functions with an example?

Short Answer Question

1. Write about pointers to arrays in C.
2. What is dynamic memory allocation?

Very short Answer Questions

1. Write the file opening and closing functions?
2. 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 2019-2020
I BSC (CS) 2019– 2022 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

P R GOVT COLLEGE (A):: KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
INFORMATION & COMMUNICATION TECHNOLOGY –1 (ICT-1)
SEMESTER-II (W.E.F 2019-20)
Computer Fundamentals and Office Tools
Common for all Degree Programmes

II Semester
(30 Hours of Teaching Learning including Lab)

Unit-I:

Basics of Computers :Definition of a Computer - Characteristics and Applications of Computers – Block Diagram of a Digital Computer – Classification of Computers based on size and working – Central Processing Unit – I/O Devices.

Unit-II:

Primary, Auxiliary and Cache Memory – Memory Devices. Software, Hardware, Firmware and People ware – Definition and Types of Operating System – Functions of an Operating System – MS-DOS – MS Windows – Desktop, Computer, Documents, Pictures, Music, Videos, Recycle Bin, Task Bar – Control Pane.

Unit-III:

MS-Word

Features of MS-Word – MS-Word Window Components – Creating, Editing, Formatting and Printing of Documents – Headers and Footers – Insert/Draw Tables, Table Auto format – Page Borders and Shading – Inserting Symbols, Shapes, Word Art, Page Numbers, Equations – Spelling and Grammar – Thesaurus – Mail Merge

Unit-IV:

MS-PowerPoint

Features of PowerPoint – Creating a Blank Presentation - Creating a Presentation using a Template - Inserting and Deleting Slides in a Presentation – Adding Clip Art/Pictures -Inserting Other Objects, Audio, Video - Resizing and Scaling of an Object – Slide Transition – Custom Animation

Unit-V:

MS-Excel

Overview of Excel features – Creating a new worksheet, Selecting cells, Entering and editing Text, Numbers, Formulae, Referencing cells – Inserting Rows/Columns –Changing column widths and row heights, auto format, changing font sizes, colors, shading.

Reference Books:

1. Fundamentals of Computers by ReemaThareja, Publishers : Oxford University Press, India
2. Fundamentals of Computers by V.Raja Raman, Publishers: PHI
3. Microsoft Office 2010 Bible by John Walkenbach, Herb Tyson, Michael R.Groh and FaitheWempen, Publishers : Wile.

P.R. GOVT COLLEGE (AUTONOMOUS), KAKINADA
MODEL PAPER (W.E.F. 2019-20)
I B.A/B.Sc/B.Com (Common for All Degree)

SEMESTER –II

Sub: ICT- I
Time: 2 hrs

Paper: I
Marks: 50

SECTION – A

Answer any FOUR questions the following

4 x 5= 20 M

1. Write about characteristics of Computer?
2. Explain types of computers?
3. Explain Primary and Secondary memory devices?
4. Explain Desktop and Recycle bin?
5. Explain feature of MS-Word?
6. Explain header and Footer in MS-Word?
7. Explain features of MS-Power point?
8. How to inserting Rows and Columns in MS-Excel?

SECTION – B

Answer any THREE questions the following

3 x 10= 30 M

9. Draw and explain block diagram of Computer in details?
10. Explain various input and output devices?
11. Explain types of operating system?
12. What is Mail-Merge? Explain Mail-Merge concept in MS-Word?
13. Explain Types of Views in MS-Power point?
14. Explain features of MS-Excel?

P.R. GOVT COLLEGE (AUTONOMOUS), KAKINADA
QUESTION BANK (W.E.F. 2019-20)
I B.A/B.Sc/B.Com (Common for All Degree)

SEMESTER-II

INFORMATION AND COMMUNICATION TECHNOLOGY-I

QUESTION BANK

UINT-I

Short Answer Questions:

1. Write about characteristics of Computer?
2. Explain types of computers?

Essay Answer Questions:

3. Draw and explain block diagram of Computer in details?
4. Explain various input and output devices?

UINT-II

Short Answer Questions:

1. Explain Primary and Secondary memory devices?
2. Explain Desktop and Recycle bin?
3. Explain feature of MS-Windows?

Essay Answer Questions:

4. Explain types of operating system?
5. Define operating system? Explain Function of operating system.

UINT-III

Short Answer Questions:

1. Explain feature of MS-Word?
2. Explain header and Footer in MS-Word?

Essay Answer Questions:

3. What is Mail-Merge? Explain Mail-Merge concept in MS-Word?
4. Explain How to Creating Table in MS-Word?

UINT-IV

Short Answer Questions:

1. Explain features of MS-Power point?
2. How to Inserting and Deleting in Slides in MS-Power point?

Essay Answer Questions:

3. Explain Types of Views in MS-Power point?
4. What is Presentation? How to create a presentation in MS-Power point?

UINT-V

Short Answer Questions:

1. How to inserting Rows and Columns in MS-Excel?
2. How to entering and editing text and numbers in Excel?
3. Explain Auto numbering and Auto Filling in MS-Excel?
4. How to changing column widths and rows heights in MS-Excel?

Essay Answer Questions:

5. Explain features of MS-Excel?
6. Define worksheet and Cell? Explain Cell address and Cell Referencing in MS-Excel.

P. R.GOV.T. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT (W.E.F. 2019-20)
I B.A/B.Sc/B.Com (Common for All Students)

SEMESTER -II

INFORMATION AND COMMUNICATION TECHNOLOGY-I

SUBJECT: ICT
PAPER- I

Time: 2 Hrs
Marks: 50

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 Short Questions	8	5	40	4	5	20
2	Section-B Essay Questions	6	10	60	3	10	30
TOTAL MARKS				100	TOTAL MARKS		50

P. R.GOVT. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT (W.E.F. 2019-20)
I B.A/B.Sc/B.Com (Common for All Degree)
SEMESTER- II

INFORMATION & COMMUNICATION TECHNOLOGY – I

SUBJECT: ICT-I
PAPER- I

Time: 2 Hrs
Marks :50

Model Blue print for the question paper setter

Chapter Name	Essay Questions 10 Marks	Short Questions 5 Marks	Marks allotted to the chapter
UNIT-I, II	2	2	30
UNIT-III	2	2	30
UNIT-IV	1	2	20
UNIT- V	1	2	20
Total No. of questions	6	8	
Total Marks Including choice			100

II BSC
COMPUTER SCIENCE

P R GOVT COLLEGE(A), KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
II B.Sc (CS) - Semester- III (W.E.F. 2019-2020)
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. 2019-2020)
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	6	5	30	3	5	15
3	Section-C Essay Questions	8	10	80	4	10	40
TOTAL MARKS				115	TOTAL MARKS		60

115 - 60 55

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

115

115

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

MODEL PAPER (W.E.F. 2019-2020)

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 3 questions

3 x 5 =15M

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

Section –III

Answer all the questions

4 x 10 = 40M

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

(OR)

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

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

(OR)

B. How is Multiple Inheritance handled in Java Programming?

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

(OR)

B. Explain about Life cycle of a Thread?.

15. 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. 2019-2020)
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 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	1	1	26
Module-5	2	1	1	26
Total No. of questions	8	6	5	
Total Marks Including choice				115

P R GOVERNMENT (AUTONOMOUS) COLLEGE, KAKINADA

QUESTION BANK (W.E.F. 2019-2020)

II B.Sc (CS) Course code: CP3204

SEMESTER-III

Subject: OBJECT ORIENTED PROGRAMMING USING JAVA

Max.Marks:60

Paper-II

Question Bank

Module I

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.

Short Questions: (5M)

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?

Essay Questions: (10M)

1. Explain the features of Object Oriented Programming.
2. Explain the features of Java Programming.
3. What is a token? List and explain the various types of tokens supported by java?
4. Explain about JVM in details.

Module II

Very Short Questions: (1M)

1. What is an Operator?
2. Define Expression.
3. Mention any three relational operators.
4. Define class and Object.
5. What is Constructor?

Short Questions: (5M)

1. Explain the Evaluation of Expressions.
2. Explain the Conditional Statements in Java.
3. Discuss Abstract classes and Methods.
4. Explain about Final variables and Methods.

Essay Questions: (10M)

1. What is an Operator? Explain the Types of Operators in Java.
2. Explain the Decision Making and Looping Statements in Java.
3. Explain the Decision Making and Branching Statements in Java

Module III

Very Short Questions: (1M)

1. Define Interface.
2. What is Inheritance?
3. Write any two string methods?
4. What is a vector?

Short Questions: (5M)

1. Discuss Method Overloading.
2. Discuss Method Overriding.
3. How can you implement Interfaces?
4. Discuss the types of Polymorphism.

Essay Questions: (10M)

1. What is Inheritance? Explain the Types of Inheritance that are supported by java.
2. How is Multiple Inheritance handled in Java Programming?
3. What is an array? Explain the process of declaration and initialization of one dimensional and two dimensional arrays in java?
4. Explain any five string methods with examples?

Module IV

Very Short Questions: (1M)

1. What is a Thread?
2. What is Compile time error?
3. What is exception handling?
4. What is synchronization?

Short Questions: (5M)

1. Explain types of errors?
2. Explain thread priority?
3. Explain syncrnization in java ?
4. Explain the Thread methods yield(),sleep() and stop()?

Essay Questions: (10M)

11. Explain how handling Exceptions in Java?
12. Explain about Life cycle of a Thread?
13. Explain about Life cycle of an Applet?
14. Explain thread priorities in java with an example?

Module IV

Very Short Questions: (1M)

1. What is an applet?
2. What is a package?
3. Write the syntax for creating a package?
4. What is an applet tag?.

Short Questions: (5M)

1. Explain the process of creating an executable Applet?
2. Explain the process of adding Applet to HTML file?
3. What are the Applications of OOPS?
4. Write any three Java API packages and briefly explain them?

Essay Questions: (10M)

1. What is a Package? Explain the creation of Package in Java.
2. Explain the life cycle of applet?
3. Discuss the various levels of access protection available for packages and their implementation?
4. Discuss the steps involved in developing and running a local 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 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. 2019-2020)

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 1 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. 2019-2020)

II B.SC (CS)

SEMESTER-IV

Course Code: CP4204

SUBJECT: Data Structures

PAPER- II

Time: 2½ Hrs

Marks: 60

<u>Model blue print for the model paper and choice</u> 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 MARKS				115	TOTAL MARKS		60

$$115 - 60 = 55$$

Percentage of choice given = $\frac{\text{Marks allotted to choice}}{\text{Total Marks}} \times 100 = \frac{60}{115} \times 100 = 47.82\%$

$$\frac{60}{115} \times 100 = 47.82\%$$

P. R. GOVT COLLEGE (AUTONOMOUS), KAKINADA

MODEL PAPER (W.E.F. 2019-2020)

II B.SC (CS)

SEMESTER –IV

Course Code: CP4204

Subject: Data Structures

Paper: IV

Time: 2½ hrs

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 THREE Questions

3 x 5 = 15M

6. Explain the Primitive Data Structures.
7. Explain Stack operations.
8. Explain about Tree implementations and applications.
9. Explain Minimal Spanning Trees?
10. Explain about Binary Searching.
11. 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 Spanning 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 2019-2020
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	31
Module-2	1	1	1	16
Module-3	1	1	1	16
Module-4	2	1	1	26
Module-4	2	1	1	26
Total No. of questions	8	6	5	
Total Marks Including choice				115

P. R. GOVT COLLEGE (AUTONOMOUS), KAKINADA

QUESTION BANK (W.E.F. 2019-2020)

II B.SC (CS)

SEMESTER –IV

Course Code: CP4204

QUESTION BANK

Subject: Data Structures

Max.Marks:60

Paper-II

Module I

Very Short Questions:

1. What is ADT?
2. Define Array.
3. What is sparse matrix?
4. Define single linked list.

Short Answer Questions

1. Explain the Primitive Data Structures.
2. Write a java Program to add two matrices.
3. Distinguish primitive and Non-primitive Data Structure. Give an example for each.
4. Write the advantages and disadvantages of array and linked list.

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 single linked list? Explain the algorithm to insert and delete items in a single linked list.

Module II

Very Short Questions:

1. Define Stack.
2. Define Queue
3. Define circular queue
4. Define priority

Short Answer Questions

1. Explain Stack operations.
2. Explain Priority Queue.
3. Write the advantages and disadvantages of array and linked list.
4. Write a note on stacks and its applications.

Essay Questions:

1. What is a stack? Explain the algorithm to create and delete items In stack.
2. What is a queue? Explain the algorithms to create and delete Items in a circular queue.
3. Explain the implementation and applications of stack?.

Module III**Very Short Questions:**

1. What is BST?
2. Define Tree?
3. What is Heap Trees
4. What is Binary Tree?

Short Answer Questions

1. Explain about Tree implementations and applications.
2. Write a neat diagram explain the linked storage representation of a Binary tree.
3. Write a note on threaded binary trees?
4. Write a note on heap trees?

Essay Questions:

5. Write an algorithm to delete operation in any binary search tree.
6. Explain the below: i) Binary search tree ii) Heaps.
7. Write about implementation and applications of BST?

Module IV**Very Short Questions:**

1. What is Graph?
2. What is minimal spanning tree?
3. What are connected components?
4. What is a simple Graph?

Short Answer Questions

1. Write the matrix representation of a Graph?.
2. Explain Minimal Spanning Trees?
3. Write about connected components?
4. Explain Basic searching techniques in graph?

Essay Questions:

1. What is Minimal Spinning tree? Write about breadth first search Technique.
2. What is a graph? How a graph can be represented in memory? Write an algorithm to delete an edge from a graph?
3. What is a Graph? Briefly Graph traversal techniques?

Module V

Very Short Questions:

1. Define Sorting?
2. Define Searching?
3. What is Merge Sort
4. What is Quick sort

Short Answer Questions

1. Explain about Binary Searching.
2. Explain Insertion Sort.
3. Explain about Bubble Sort
4. Explain about selection sort

Essay Questions:

1. Explain Merge sort algorithm with an example?
2. Explain Quick sort algorithm with an example?
3. Briefly Explain linear and binary search algorithms?

P. R.GOVT. COLLEGE (AUTONOMOUS), KAKINADA
II B.Sc (CS) SEMESTER-IV
Course Code: CP4204P

SCHEME OF VALUATION (W.E.F. 2019-2020) – PAPER II

Time: 2 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. 2019-2020)
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.

P. R.GOV.T. COLLEGE (AUTONOMOUS), KAKINADA
SYLLABUS PAPER (W.E.F. 2019-20)
II B.Sc/B.Com/B.A (Common for All UG Programs)
INFORMATION & COMMUNICATION TECHNOLOGY –2 (ICT-2)

INTERNET FUNDAMENTALS AND WEB TOOLS
(30 Hours of Teaching Learning including Lab)
SEMESTER-III

Total hrs. Of teaching-learning: 30 @ 2 Hrs / week Total credits: 02

Module -I:

Fundamentals of Internet : Networking Concepts, Data Communication – Types of Networking, Internet and its Services, Internet Addressing – Internet Applications – Computer Viruses and its types – Browser –Types of Browsers.

Module -II: Internet applications: Using Internet Explorer, Standard Internet Explorer Buttons, Entering a Web Site Address, Searching the Internet – Introduction to Social Networking: Twitter, LinkedIn, Facebook, Flickr, Skype, Yahoo!, Google+, Youtube, WhatsApp, etc.

Module -III: E-mail :Definition of E-mail - Advantages and Disadvantages – User Ids, Passwords, Email Addresses, Domain Names, Mailers, Message Components, Message Composition, Mail Management, Email Inner Workings.

Module -IV:

WWW- Web Applications, Web Terminologies, Web Browsers, URL – Components of URL, Searching WWW – Search Engines and Examples

Module -V:

Basic HTML: Basic HTML – Web Terminology – Structure of a HTML Document – HTML, Head and Body tags – Semantic and Syntactic Tags – HR, Heading, Font, Image and Anchor Tags –Different types of Lists using tags – Table Tags, Image formats – Creation of simple HTML Documents.

Reference Books:

1. In-line/On- line: Fundamentals of the Internet and the World Wide Web, 2/e - by Raymond Greenlaw and Ellen Hepp, Publishers: TMH

P. R. GOVT. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT (W.E.F. 2019-20)
II B.Sc/B.Com/B.A (Common for All UG Programs)
INFORMATION & COMMUNICATION TECHNOLOGY –2 (ICT-2)

INTERNET FUNDAMENTALS AND WEB TOOLS
(30 Hours of Teaching Learning including Lab)
SEMESTER-III

Time: 2 Hrs
PAPER- II

Marks: 50

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 Short Questions	8	5	40	4	5	20
2	Section-B Essay Questions	6	10	60	3	10	30
TOTAL MARKS				100	TOTAL MARKS		50

P. R.GOV'T. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT (W.E.F. 2019-20)
II B.Sc/B.Com/B.A (Common for All UG Programs)
INFORMATION & COMMUNICATION TECHNOLOGY –2 (ICT-2)

INTERNET FUNDAMENTALS AND WEB TOOLS
(30 Hours of Teaching Learning)
SEMESTER-III

SUBJECT: INFORMATION & COMMUNICATION TECHNOLOGY –2 (ICT-2)

Time: 2 Hrs

Marks: 50

Model Blue print for the question paper setter

Chapter Name	Essay Questions 10 Marks	Short Questions 5 Marks	Marks allotted to the chapter
Module-I	2	2	30
Module-II	1	2	20
Module-III	1	1	15
Module-IV	1	1	15
Module-V	1	2	20
Total No. of questions	6	8	100

P.R.COLLEGE (AUTONOMOUS), KAKINADA
MODEL PAPER (W.E.F 2019-20)
II B.Sc/B.Com/B.A (Common for All UG Programs)
INFORMATION & COMMUNICATION TECHNOLOGY –2 (ICT-2)

INTERNET FUNDAMENTALS AND WEB TOOLS
(30 Hours of Teaching Learning including Lab)
SEMESTER-III

Sub: ICT- II

Time: 2 hrs

Paper: II

Marks: 50

SECTION – A

Answer any FOUR questions the following

4 x 5= 20 M

1. What is a Browser? Explain the different types of browsers?
2. Explain various application of internet.
3. Explain the Procedure for composing an E-mail.
4. Explain about WhatsApp.
5. Explain the procedure for searching in WWW.
6. Explain about WWW, Web Server, Website, and URL?
7. Explain about heading tag in HTML.
8. Discuss about Font, Image tags in HTML.

SECTION – B

Answer any THREE questions the following

3 x 10= 30 M

1. What is a Network? Explain the different types of Networks.
2. What is a Computer Virus? Explain types of viruses and its effects.
3. What is Social Networking? Explain about its advantages and disadvantages
4. What is an E-Mail? List the advantages and disadvantages of E-mail.
5. What is a Search Engine? List some of the popular search engines? What are various types of Search Engines? Explain
6. What is HTML? What is the structure of an HTML document? Create a simple web page using HTML tags.

P. R.GOV.T. COLLEGE (AUTONOMOUS), KAKINADA
QUESTION BANK (W.E.F. 2019-20)
II B.Sc/B.Com/B.A (Common for All UG Programs)
INFORMATION & COMMUNICATION TECHNOLOGY –2 (ICT-2)
INTERNET FUNDAMENTALS AND WEB TOOLS
(30 Hours of Teaching Learning)
SEMESTER-III

QUESTION BANK

MODULE-I

Short Answer Questions:

1. What is a Browser? Explain the different types of Browsers?
2. Explain Internet and Its services.
3. Define Internet? Difference between Internet and Intranet
4. Explain different types of networking.

Essay Answer Questions:

5. What is a Network? Explain the different types of Networks.
6. What is a Computer Virus? Explain types of viruses and its effects.
7. What is a Browser? Explain the different types of Browsers?

MODULE-II

Short Answer Questions:

1. Explain various Applications of Internet?
2. Explain about WhatsApp?
3. Explain about Social Networking sites with an example.

Essay Answer Questions:

4. What is Social Networking? Explain about its advantages and disadvantages

MODULE-III

Short Answer Questions:

1. Explain the Procedure for composing an E-mail?

Essay Answer Questions:

2. What is an E-Mail? List the advantages and disadvantages of E-mail.
3. Explain the Procedure for composing and sending an E-mail.

MODULE-IV

Short Answer Questions:

1. Explain the procedure for searching in WWW?
2. Explain about WWW, Web Server, Website, and URL?

Essay Answer Questions:

3. What is a Search Engine? List some of the popular search engines? What are various types of Search Engines? Explain.

MODULE-V

Short Answer Questions:

1. Explain about heading tag in HTML?
2. Discuss about Font, Image tags in HTML.
3. Explain about Multimedia tags in HTML

Essay Answer Questions:

4. What is HTML? What is the structure of an HTML document? Create a simple web page using HTML tags.
5. Discuss about Font, Image and Anchor tags in HTML.

III BSC COMPUTER SCIENCE

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

Time: 3 Hrs

Marks:60

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	6	5	30	3	5	15
3	Section-C Essay Questions	8	10	80	4	10	40
TOTAL MARKS				115	TOTAL MARKS		60

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

Time:2^{1/2}Hrs

Max. Marks:60

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 THREE questions

3 x 5M= 15M

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 cursor statement in PL/SQL

SECTION - III

Answer ALL questions

4 x 10M = 40M

12. a) Explain about advantages and disadvantages of DBMS
(OR)
b) Explain about components and interfaces of DBMS
13. a) What is E-R diagram? What are the building blocks of E-R diagram
(OR)

b) Explain about relational operators in relational algebra

14. a) Explain about DDL,DML,DCL statements in SQL
(OR)

b) Explain about views in details

15. 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- III: Data Base Management System

Time: 2 1/2Hrs

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-1	2	2	1	31
Module-2	1	1	1	16
Module-3	1	1	1	16
Module-4	2	1	1	26
Module-5	2	1	1	26
Total No. of questions	8	6	5	
Total Marks Including choice				115

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

QUESTION BANK

LONG ANSWER QUESTIONS:

UNIT-I

1. Explain about characteristics of file-based system? Write about drawbacks of file-based systems?
2. Explain about advantages and disadvantages of DBMS?
3. Explain about of classification of DBMS?
4. Explain about components and interfaces of DBMS?
5. Explain the three-level architecture of data base system?

UNIT-II

6. What do you mean by E-R-Model? Explain the degree of relationship in E-R-Model?
7. Write about generalization, specialization in E-R-Model?
8. What is E-R Diagram? What are the building blocks of E-R Diagram?

UNIT-III

9. Explain about codd's relational data base rules ?
10. Explain about relational operators in relational algebra?
11. What is meant by a key? What are the different types of keys available in relational model?

UNIT-IV

12. Explain DDL, DML, DCL in SQL?
13. Write about different joins in SQL?
14. Explain about views in SQL in detail?

UNIT-V

15. Explain about PL/SQL block structure in detail.
16. Explain about loop control structures in PL/SQL.
17. What is meant by a cursor? Explain implicit and explicit cursors with examples.

SHORT ANSWERS

UNIT-I

1. write about objectives of DBMS ?

2. write about roles and responsibilities of SBMS ?
3. write about data Independence ?
4. write about classification of entity sets ?

UNIT-II

5. write about hierarchical data model ?
6. write about attribute classification in E-R model ?

UNIT-III

7. explain about relation model ?
8. what is Normalization ? when it is used in RDBMS ?
9. what is a constrains? Explain different types of constrains in relational model ?

UNIT-IV

10. explain about different datatypes in SQL ?
11. write about select statement with example ?
12. write about aggregate function in SQL ?

UNIT-V

13. write about trigger ?

VERY SHORT ANSWERS QUESTIONS

UNIT-I

14. Define DBMS ?
15. Define DBA ?

UNIT-II

16. Define an entity ?
17. Define an attribute ?

UNIT-III

18. Define constraint ?
19. Define foreign key ?
14. Define normalization ?

UNIT-IV

- 15. Define a relation ?
- 16. Define Join ?

UNIT-V

- 17. Define cursor ?
- 18. Define trigger ?
- 19. Define PL/SOL ?

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

- a. Draw ER diagrams for train services in a railway station
- b. Draw ER diagram for hospital administration
- c. Creation of college database and establish relationships between tables
- d. Write a view to extract details from two or more tables
- e. Write a stored procedure to process students results
- f. Write a program to demonstrate a function
- g. Write a program to demonstrate blocks, cursors & database triggers.
- h. Write a program to demonstrate Joins
- i. Write a program to demonstrate subqueries
- j. Write a program to demonstrate of Aggregate functions
- k. Creation of Reports based on different queries
- l. Usage of file locking table locking, facilities in applications.

P. R. GOVT. COLLEGE (AUTONOMOUS), KAKINADA
SYLLABUS PAPER W.E.F.2019-2020

III B.Sc.(CS) V SEMESTER

SOFTWARE ENGINEERING - PAPER- IV

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

MODULE-I

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

MODULE-II

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

MODULE-III

SOFTWARE DESIGN: Software design - Abstraction - Modularity - Software Architecture

- Effective modular design - Cohesion and Coupling - Architectural design and Procedural design - Data flow oriented design.

MODULE-IV

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

MODULE-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.**

III YEAR V SEMESTER

Software Engineering Lab

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 3 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 2019-2020
III B.SC (CS) 2017-2020 BATCH
Course Code: CP6207

SEMESTER-V

SUBJECT: SOFTWARE ENGINEERING

PAPER- IV

Time: 2 1/2 Hrs

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

$$115 - 60 = 55$$

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

$$\frac{55}{115}$$

P. R.GOV.T. COLLEGE (AUTONOMOUS), KAKINADA
III B.SC (CS) 2017-2020 BATCH
(Model paper W.E.F 2019-2020)

Subject: Software Engineering

Time: 2 1/2 Hrs

Paper: IV

Max. Marks: 60

SEMESTER – V

SECTION - I

Answer ALL

5 x 1= 5 M

1. What is Software Engineering process?
2. Define Feasibility Study?
3. Define Software Design?
4. Explain about Re-engineering?
5. Define Integration Testing?

SECTION - II

Answer Any Three

3 x 5= 15 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. Write about Interface Standards?
11. Explain about Black Box testing?

SECTION - III

Answer ALL

4 x 10= 40 M

12. a) Explain Software Project Process and Metrics in detail

(OR)

- b) Discuss in detail about Software Requirement Analysis.

13. a) Explain in detail about the Software Architecture

(OR)

b) Discuss the Data Flow oriented design.

14. a) Describe the Human Computer Interaction and Computer Interface design.

(OR)

b) Explain in detail about Quality Assurance and Quality metrics.

15. a) Explain the importance Validation and System Testing.

(OR)

b) Explain about Programming tools and Testing tools.

P. R.GOVT. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT FOR MODULE_WISE FOR THE YEAR 2019-20
III B.SC (CS) 2017-2020 BATCH

Computer Science Course: Software Engineering

Time : 2.30 Hrs.

SEMESTER-V

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,V	2	1	1	26
Total No. of questions	8	8	5	
Total Marks Including choice				115

P.R. GOVERNMENT COLLEGE (AUTONOMOUS), KAKINADA
QUESTION BANK FOR THE YEAR 2019-2020

III B.SC (CS)

SEMESTER-V

Subject: SOFTWARE ENGINEERING

Essay Questions

MODULE-I

1. Describe about the Project Management.
2. Explain Software Project Process and Metrics in detail.

MODULE-II

3. Discuss in detail about Software Requirement Analysis.
4. Explain in detail about the Software Architecture.

MODULE-III

5. Discuss the Data Flow oriented design.

MODULE-IV

6. Describe the Human Computer Interaction and Computer Interface design.
7. Explain about Computer Interface Design Interface Standards.

MODULE-V

8. Explain about the Software Quality and Testing.
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

MODULE-I

1. Explain about Software Project Scheduling.

MODULE-II

2. Describe about Analysis Process.
3. Explain about Problem of Requirements.
4. Explain about Software Requirement processes

MODULE-III

5. What is Cohesion and Coupling.
6. Explain the Architectural design.

MODULE-IV

7. Write about Interface Standards.
8. Explain about Computer Interface Design
9. Describe various Human factors.

MODULE-V

10. Explain about Re-engineering
11. Explain about Black Box testing
12. Explain about Analysis Model

Very Shot Questions.

MODULE-I

1. What is Software Estimation
2. What is Software Engineering process

MODULE-II

3. Define Feasibility Study
4. Define System Analysis

MODULE-III

5. Define Data Flow Diagram

MODULE-IV

6. Define User Interface Design.

MODULE-V

7. Define Testing.
8. Define Verification.
9. Define Path Testing
10. Define Software Reliability.
11. Define Integration. Testing

P.R.GOVERNMENT COLLEGE (AUTONOMOUS), KAKINADA

III B.SC (CS) 2019-20

Course Code: CP6207

SEMESTER-V

Subject: Software Engineering

Credits: 02

Project Work : 50Marks

Internal Viva 15 Marks

External Viva 35 Marks

PR GOVT COLLEGE (A) :: KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
III BSC (CS) -SEMESTER –VI
(Cluster 2) Paper-VIII : Elective – II(Cluster-B1)

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 : 2:30 Hours

Max.Marks:60

SECTION-A

Answer the following questions:

5x 1=5M

1. Define Distributed System?
2. Define RPC?
3. Define DSM?
4. What is Thread?
5. What is File?

SECTION – B

Answer any **Three** of the following questions

3x5=15M

6. Write the Advantages of DS over Centralized systems.
7. Write about Dis advantages of DS.
8. Explain Group Communication.
9. What is Distributed Shared Memory(DSM)? Write the advantages of DSM.
10. Explain about Deadlock.
11. Write about Process Migra

SECTION - C

Answer **ALL** the following questions.

4 x10 = 40 M

12. a) Write about Challenges of Distributed System
(or)

b) Describe the issues in Distributed Operating System.

13. a) Explain RPC Protocols
(or)

b) Explain about the working of RPC .

14. a) Explain about Implementation of Distributed File
Systems. (or)

b) Write about Election Algorithm.

15. 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 2019-2020
III B.Sc Semester- VI

SUBJECT: (Cluster B) DISTRIBUTED SYSTEMS

Time: 2:30 Hrs

PAPER- VIII

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-1	2	2	1	31
Module-2	2	1	1	26
Module-3	1	2	1	21
Module-4	1	0	1	11
Module-5	2	1	1	26
Total No. of questions	8	6	5	
Total Marks Including choice				115

$$\text{Percentage of choice given} = \frac{\quad}{115} \times 100 = \frac{55.5}{115} \times 100 = 48.72\%$$

DISTRIBUTED SYSTEMS QUESTION BANK

Unit -1

Essay Questions

1. What is Distributed Computing System? Explain Issues in Designing a Distributed Operating System?
2. What is Distributed Computed System? Explain about examples of Distributed System?
3. What is Distributed System? Explain about Different System Models?

Short Answer Questions

1. What about the disadvantages of DS over centralized systems?
2. Write about disadvantages of DS over independent PC's?
3. Write about disadvantages of DS of Distributed systems?

Very short Answer Questions

1. Define Distributed Systems?
2. Define Transparency?

Unit-2

Essay Questions

1. Explain about Parameter passing in RPC?
2. What is RPC? Explain how RPC works?
3. Explain RPC Protocols?

Short Answer Questions

1. Explain about parameters passing in RPC?
2. Explain about buffering and unbuffering message passing?
3. Write about group communication?

Very short Answer Questions

1. Define RPC?
2. Define server?
3. Define client?

Unit-3

Essay Questions

1. What is DSM? Explain several kinds of Shared Memory Multiprocessors?
2. Write about Election Algorithm?
3. Write about Ring Algorithm and Bulli Algorithm?

Short Answer Questions

1. Write the advantages of DSM?
2. Write about Deadlocks in DS?

Very short Answer Questions

1. Define DSM?
2. Define Deadlock?

Unit-4

Essay Questions

1. Describe the Following in Distributed Systems?
 - a. Task Assignment Approach
 - b. Load-Balancing Approach
2. Describe about Load Sharing Approach & Process Migration in DS?

Short Answer Questions

1. Explain Threads in DS?

2. Write about process migration?

Very short Answer Questions

1. Define thread ?
2. Write the difference between thread and process?

Unit-5

Essay questions

1. Write about Implementation of Distributed File System?

Short Answer Questions

1. Write about Atomic Transactions in Distributed systems?

Very short Answer Questions

1. Define File Server?
2. Define cryptography?

PR GOVT COLLEGE (A) :: KAKINADA
DEPARTMENT OF COMPUTER SCIENCE
III BSC (CS) -SEMESTER –VI
(Cluster 2) Paper-VIII : Elective II(Cluster –B2)

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 Madisetti,
University Press
5. Mastering Cloud Computing, Foundations and Application Programming, Raj
Kumar Buyya, Christenvecctiola, S Tamarai 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 - B1) CLOUD COMPUTING

Time : 2 ½ Hours

Max.Marks:60

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 **THREE** of the following questions

3x5=15M

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

SECTION - C

Answer **ALL** the following questions.

4 x 10 = 40 M

12. a) What is Cloud Computing? Explain the components of Cloud Computing. (or)
b) Explain various characteristics of Cloud Computing.
13. a) Explain various Cloud scenarios.
(or)

b) What are the benefits and limitations of Cloud scenarios?

14. a) Explain about SPI framework.

(or)

b) Write a note on about the following SaaS providers

i) Google App Engine ii) Salesforce.com

15.a) Explain various Cloud deployment models

(or)

b) What are the advantages and disadvantages of Cloud Computing?

P. R.GOV.T. COLLEGE (AUTONOMOUS), KAKINADA
MODEL BLUE PRINT FOR THE YEAR 2019-2020
III B.Sc Semester- VI

SUBJECT: CLOUD COMPUTING (Elective-B)

Time: 2 ½

Hrs

PAPER- VIII

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-1	2	2	1	31
Module-2	2	1	1	26
Module-3	1	1	1	16
Module-4	1	1	1	16
Module-5	2	1	1	26
Total No. of questions	8	6	5	
Total Marks Including choice				115

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

Time: 2 ½ 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	6	5	30	3	5	15
3	Section-C Essay Questions	8	10	80	4	10	40
TOTAL MARKS				115	TOTAL MARKS		60

$$115 - 60 = 55$$

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

$$\frac{60}{115} \times 100 = 47.82\%$$

QUESTION BANK

MODULE – 1

Very Short Questions:

1. What is Cloud computing ?
2. What are the components of Cloud ?

Short Questions:

1. Explain the origins of Cloud Computing?
2. Explain about Rapid Elasticity?

Essay Questions:

1. What is Cloud computing? Explain the components of Cloud computing?
2. Explain various essential characteristics of Cloud Computing?
3. Briefly Explain (i) On demand self service (ii) Broad network access.

MODULE – 2

Very Short Questions:

1. Define Scalability?
2. Mention any one security concern in Cloud computing?

Short Questions:

1. What are the regularity issues in Cloud Computing?
2. What are the security concerns in Cloud computing?

Essay Questions:

1. Explain various Cloud Scenarios?
2. What are the Benefits and Limitations of Cloud Computing?
3. Briefly Explain about Government policies in Cloud computing?

MODULE – 3

Very Short Questions:

1. What is SPI frame work?
2. Give an example of PAAS provider ?

Short Questions:

1. Briefly Explain about SAAS providers?
2. Briefly explain about Google platform?

Essay Questions:

1. Explain about SPI frame work?
2. Write a note on the SAAS providers
i)Google App Engine ii) Salesforce.com
3. Explain about PAAS in detail?

MODULE – 4

Very Short Questions:

1. Give an example of IAAS provider ?
2. What are the Cloud deployment models?

Short Questions:

1. Explain about Amazon EC2?
2. Briefly Explain about Go Grid?

Essay Questions:

1. Explain various Cloud deployment models?
2. What are the advantages and disadvantages of cloud computing?
3. Explain about IAAS in detail.

MODULE – 5**Very Short Questions:**

1. What is Virtualization
2. What are the types of Hardware Virtualization?

Short Questions:

1. Write about thin client?
2. What is Virtualization? What is the need of Virtualization?

Essay Questions:

1. Explain about Hardware Virtualization in detail?
2. What is Virtualization? Explain the benefits and limitations of Virtualization?
3. What is VM Ware? Explain about VM Ware Infrastructure.

P.R. GOVERNMENT COLLEGE(A), KAKINADA
B.Sc. Computer Science: Project

Max Marks :150

Guidelines and Evaluation pattern of the Project of the Cluster

The student who wants to do the project should follow the following.

1. Select the topic with clear Aim & objectives.
2. Collect the previous information regarding the topic.
3. Student has to get the clear idea after getting the reference material ,i.e., how to proceed and what to do (methodology).
4. Before going to discuss the topic, every student has to do at least two Seminars on the chosen topic.
5. Finally student has to come with Results & Conclusions.
6. Bibliography (Reference Journals/books should be mentioned).
7. A group of 3-4 students per project

Seminars 50 Marks	Report of the project : 50Marks	Project Viva voce 50 Marks	
1 After 3 weeks(25M) 2 After 7 weeks(25M)	1.Introduction (Selection of the topic, Aim & objectives) 2.Review of Information 3.Methodology 4. Analysis& Discussion 5.Suggestions & Conclusion	Presentation & execution 30m	Viva 20 m