GOVT. COLLEGE FOR MEN (A) KADAPA

NAAC Reaccredited with 'B' Grade

Kadapa-516001

BOARD OF STUDIES MEETING
IN
COMPUTER SCIENCE

w.e.f 2025-26

DEPARTMENT OF COMPUTER SCIENCE

Date: 15-09-2025

V SEMESTER

GOVERNMENT COLLEGE FOR MEN

(Autonomous)

Reaccredited with 'B' Grade by NAAC

Kadapa – 516004

B.Sc. HONOURS COMPUTER SCIENCE

Board of Studies

on

15th September 2025

with effect from **2025–26** Academic Year

DEPARTMENT

OF

COMPUTER SCIENCE & APPLICATIONS

BOARD OF STUDIES MEETING

IN

B.Sc. Honours COMPUTER SCIENCE

With effect from 2025–26 academic year

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

B.Sc. HONOURS COMPUTER SCIENCE

	Category	Name & Designation of the Person	Chairperson /Member
1.	Head Department of Computer Science and Applications	**Smt Y Anitha** Lecturer in Computer Science	Chairman
2.	Faculty Members	**Sri T Manohar Reddy,** Lecturer in Computer Science	Member
		Sri K H Sampath Kumar Raju Lecturer in Computer Science	Member
		Smt B Renuka Devi Lecturer in Computer Science	Member
		Sri M Mahaboob Subhani Lecturer in Computer Science	Member
		Smt.K.Deepthi Lecturer in Computer Science	Member
		Smt.P.Rama Lakshumma Lecturer in Computer Science	Member
3	Subject expert in the Subjectto be nominated by the Vice-Chancellor from a panel of six recommended by the principal	**Dr B Reddaiah,** Associate Professor, Dept. of CSE, YVCET of YVU, Proddatur, Andhra Pradesh.	Member
4	Subject Experts in the Subject from outside the college to be nominated by the Academic Council	**Dr C. Shoba Bindu,** Professor, Department of CSE, JNTUA Anantapuramu, Andhra Pradesh.	Member
		Dr A Sri Lakshmi, Lecturer in Computer Applications, Govt. Degree College, Nagari, Chittoor(dt), Andhra Pradesh.	Member
5	A representative from industry/ corporate sector related to placements nominated by the principal	**Sri. G Trivikram,** Senior project Manager, Kumaran Systems, Bangalore.	Member
6	One Meritorious Alumnus	**Sri K Krishna Geeth,** Senior Software Engineer, Wipro Technologies, Hyderabad.	Member

BOS Chairman

Principal

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

B.Sc. HONOURS COMPUTER SCIENCE

Minutes of Board of Studies

Date: 15-09-2025

Members of the board of studies attended meeting Online through Google Meet Video Conferencing tool under the chairmanship of **Smt. Y. Anitha**, Lecturer in-charge of the Department of Computer Science and Applications on **15-09–2025 at 03:00 PM** to discuss and finalize the following agenda.

Agenda:

1. To discuss the syllabus for 5th Semester of B.Sc. Honours Computer Science with effect from 2025-2026 academic year.
2. To discuss the internal and external question papers patterns for 5th Semester of B.Sc. Honours Computer Science with effect from 2025-2026 academic year.
3. To consider the list of question paper setters and list of examiners.

Resolution: All the members unanimously resolved to approved

1. The proposed syllabus for 5th Semester of B.Sc. Honours Computer Science with effect from 2025-26 academic year.
2. External and Internal Evaluation with the ratio of 60 and 40.
3. Internal and external question papers pattern and blueprint for external question paper for 5th Semester of B.Sc. Honours Computer Science are also finalized.

Internal Evaluation Pattern for 5th Semester of BSc Honours Computer Science

1st Internal Examination	: Max. 20 Marks
2nd Internal Examination	: Max. 15 Marks
Assignment	: Max. 05 Marks
Seminar	: Max. 05 Marks
Extra-curricular activities	: Max. 05Marks
Total	**: Max. 50Marks**

✍ *Should scale down 50 marks to 40 marks by using formula:*

$$scaled\ marks = \frac{total\ scored\ marks * 40}{50}$$

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

B.Sc. HONOURS COMPUTER SCIENCE

External Evaluation Pattern for 5th Semester of BSc Honours Computer Science

Time: 3 Hrs Model Question Paper Max. Marks: 60

Section – A **5 x 4 = 20 Marks**

Answer any **FIVE** questions from the following **1 to 8** questions.

Each question carries **4** marks.

[**At least one question should be given from each unit**]

Section – B **5 x 8 = 40 Marks**

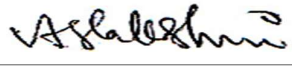
Answer any **FIVE** questions from the following **9 to 16** questions.

Each question carries **8** marks.

[**At least one question should be given from each unit**]

4. The list of Question paper setters and the list of examiners.

Members Present:

	Name of the Member	Signature with date
1.	Smt Y. Anitha (Chairman)	
2.	Dr B. Reddaiah (Nominee from the University)	
3	Dr C. Shoba Bindu (Subject Expert)	
4	Dr A. Sri Lakshmi (Subject Expert)	
5	Sri. G Trivikram (Industrialist)	
6	Sri K Krishna Geeth (Alumnus)	
7	Sri T. Manohar Reddy (Member)	
8	Sri K. H. Sampath Kumar Raju (Member)	
9	Smt B Renuka Devi (Member)	
10	Sri M Mahaboob Subhani (Member)	
11	Smt K. Deepthi (Member)	
12	Smt P. Rama Lakshumma (Member)	

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

Revised UG Syllabus under CBCS with effect from 2025–2026

Structure for 3rd Year B.Sc. Honours Computer Science

MAJOR SUBJECTS

Year	Semester	Course Code	Course Name	Hours per week			Credits
				L	T	P	
III	V		Web Interface Designing Technologies -(T)	3	0	0	3
			Web Interface Designing Technologies(p)	0	0	2	1
			Web Applications Development using PHP & MYSQL -(T)	3	0	0	3
			Web Applications Development using PHP & MYSQL -(p)	0	0	2	1
			Internet of Things (T) OR Foundations of Data Science -(T)	3	0	0	3
			Internet of Things(p) OR Foundations of Data Science -(p)	0	0	2	1
			IoT Applications Development and Programming -(T) OR Application development using Python -(T)	3	0	0	3
			IoT Applications Development and Programming (p) OR Application development using Python -(p)	0	0	2	1
						Total	16

MINOR SUBJECTS

Year	Semester	Course Code	Course Name	Hours per week			Credits
				L	T	P	
III	V		Web Applications Development using PHP & MYSQL -(T)	3	0	0	3
			Web Applications Development using PHP & MYSQL -(p)	0	0	2	1
			Foundations of Data Science -(T)	3	0	0	3
			Foundations of Data Science -(p)	0	0	2	1
						Total	8

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

B.Sc. Honours COMPUTER SCIENCE

Course Code	Web Interface Designing Technologies	Program & Semester III B.Sc. Honours CS - V Semester			
Teaching	Hours Allocated:	L	T	P	C
Pre-requisites	Computer Fundamentals	3	0	0	3

Learning Objectives:

To enable students to understand web architecture, develop aesthetic websites, create static and dynamic web pages, implement user interactivity, and gain proficiency in installing and utilizing WordPress and plugins

Learning Outcomes: On successful completion of the course, students will be able to

1. Understand and appreciate the web architecture and services along with its basic building blocks
2. Gain knowledge about various components of a website related to aesthetics
3. Demonstrate skills regarding creation of a static website and addition of dynamic behavior to a website
4. Get experience on making user-interactive web pages.
5. Learn how to install word press and gain the knowledge of installing various plugins to use in their websites.

UNIT - I

HTML: Introduction to web designing, difference between web applications and desktop applications, introduction to HTML, HTML structure, elements, attributes, headings, paragraphs, images, tables, lists, blocks, symbols, embedding multi-media components in HTML, HTML forms .

UNIT – II

CSS: CSS home, introduction, syntax, CSS combinators, colors, background, borders, margins, padding, height/width, text, fonts, tables, lists, position, overflow, float, pseudo class, pseudo elements, opacity, tool tips, image gallery, CSS forms, CSS counters.

UNIT – III

Java Script: What is DHTML, JavaScript, basics, variables, operators, statements, string manipulations, mathematical functions, arrays, functions. objects, regular expressions, exception handling.

UNIT-IV

Client-Side Scripting: Accessing HTML form elements using Java Script object model, basic data validations, data format validations, generating responsive messages, opening windows using java script different kinds of dialog boxes, accessing status bar using java script, embedding basic animative features using different keyboard and mouse events.

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS
B.Sc. Honours COMPUTER SCIENCE

UNIT – V

Word press: Introduction to word press, features, and advantages, installing and configuring word press and understanding its admin panel (demonstration only), working with posts, managing pages, working with media - Adding, editing, deleting media elements, working with widgets, using menus, working with themes, defining users, roles and profiles, adding external links, extending word press with plug-ins.

Text Book(s)

1. Chris Bates, Web Programming Building Internet Applications, Second Edition, Wiley (2007)

2. Paul S.WangSanda S. Katila, an Introduction to Web Design plus Programming, Thomson

Reference Books

1. Head First HTML and CSS, Elisabeth Robson, Eric Freeman, O'Reilly Media Inc.

2. An Introduction to HTML and JavaScript: for Scientists and Engineers, David R. Brooks. Springer, 2007

3. Schaum's Easy Outline HTML, David Mercer, Mcgraw Hill Professional.

4. Word press for Beginners, Dr.Andy Williams.

5. Professional word press, Brad Williams, David damstra, Hanstern.

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS
B.Sc. Honours COMPUTER SCIENCE

Course Code	Web Interface Designing Technologies	Program & Semester: III B.Sc. Honours-CS V Semester			
Teaching	Hours Allocated:	L	T	P	C
Pre-requisites	Fundamental Programming	0	0	2	1

List of Experiments:

1. Create an HTML document with the following formatting options: (a) Bold, (b) Italics, (c) Underline, (d) Headings (Using H1 to H6 heading styles), (e) Font (Type, Size and Color), (f) Background (Colored background/Image in background), (g) Paragraph, (h) Line Break, (i) Horizontal Rule, (j) Pre tag
2. Create an HTML document which consists of: (a) Ordered List (b) Unordered List (c) Nested List (d) Image
3. Create a Table with four rows and five columns. Place an image in one column.
4. Using "table" tag, align the images as follows:
5. Create a menu form using html.
6. Style the menu buttons using CSS.
7. Create a form using HTML which has the following types of controls: (a) Text Box (b) Option/radio buttons (c) Check boxes (d) Reset and Submit buttons
8. Embed a calendar object in your web page.
9. Create a form that accepts the information from the subscriber of a mailing system.

Word press:

10. Installation and configuration of word press
11. Access admin panel and manage posts
12. Access admin panel and manage pages
13. Add widgets and menus
14. Create users and assign roles
15. Create a site and add a theme to it

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE/APPLICATIONS

Model Question Paper

III B.Sc. Honours (Computer Science)- V Semester

Paper Title: Web Interface Designing Technologies

Time: 3 hours **Max. Marks: 60**

SECTION – A

Answer any Five of the following questions. **5 x 4 = 20 M**

1. Differentiate between web applications and desktop applications.
2. Explain the structure of an HTML document with an example.
3. Write short notes on CSS combinators with examples.
4. What are JavaScript regular expressions? Give examples.
5. Explain different types of dialog boxes in JavaScript.
6. What are WordPress themes? Explain their importance.
7. List and explain the attributes of HTML <form>.
8. Write short notes on Widgets in WordPress.

SECTION – B

Answer any Five of the following questions. **5 × 8 = 40 M**

9. Discuss HTML elements for embedding multimedia with suitable examples.
10. Explain different CSS properties related to text and fonts with examples.
11. Describe JavaScript arrays and objects with suitable examples.
12. Explain exception handling in JavaScript with examples
13. Explain how form validation is implemented using JavaScript.
14. Discuss different mouse and keyboard events in JavaScript with examples.
15. Explain the process of installing and configuring WordPress.
16. Discuss in detail how posts, pages, and plugins are managed in WordPress.

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE/APPLICATIONS

III B.Sc. Honours (COMPUTER SCIENCE)- V Semester

BLUE PRINT

Unit	Section – A (4 Marks)	Section – B (8 Marks)	Total Marks
Unit I	3	1	20M
Unit II	1	1	12M
Unit III	1	2	20M
Unit IV	1	2	20M
Unit V	2	2	24M

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

B.Sc. Honours COMPUTER SCIENCE

Course Code: 13	Web Applications Development using PHP & MYSQL	Program & Semester: III B.Sc. Honours-CS V Semester			
Teaching	Hours Allocated:	L	T	P	C
Pre-requisites	Basic Programming	3	0	0	3

Learning Objectives:

To enable students to understand open-source tools to create dynamic web pages, implement user interactivity, and gain proficiency in developing web sites.

Learning Outcomes: On successful completion of the course, students will be able to

1. Write simple programs in PHP.
2. Understand how to use regular expressions, handle exceptions, and validate data using PHP.
3. Apply In-Built functions and Create User defined functions in PHP programming.
4. Write PHP scripts to handle HTML forms.
5. Know how to use PHP with a MySQL database and can write database driven web pages.

UNIT-I

The building blocks of PHP: Variables, Data Types, Operators and Expressions, Constants.
Flow Control Functions in PHP: Switching Flow, Loops, Code Blocks and Browser Output.
Working with Functions: Creating functions, Calling functions, Returning the values from User- Defined Functions, Variable Scope, Saving state between Function calls with the static statement, arguments of functions .

UNIT-II

Working with Arrays: Creating Arrays, Some Array-Related Functions.
Working with Objects: Creating Objects, Accessing Object Instances, **Working with Strings**, **Dates and Time:** Formatting strings with PHP, Manipulating Strings with PHP, Using Date and Time Functions in PHP.

UNIT-III

Working with Forms: Creating Forms, Accessing Form Input with User defined Arrays,
Combining HTML and PHP code on a single Page, Using Hidden Fields to save state, Redirecting the user, Sending Mail on Form Submission, and **Working with File Uploads**, Managing files on server, **Exception handling.**

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

B.Sc. Honours COMPUTER SCIENCE

UNIT-IV

Working with Cookies and User Sessions: Introducing Cookies, setting a Cookie with PHP, Session Function Overview, starting a Session, working with session variables, passing session IDs in the Query String, Destroying Sessions and Unsetting Variables, Using Sessions in an Environment with Registered Users

.

UNIT-V

Interacting with MySQL using PHP: MySQL Versus MySQLi Functions, connecting to MySQL with PHP, Working with MySQL Data. Planning and Creating Database Tables, Creating Menu, Creating Record Addition Mechanism, Viewing Records, Creating the Record Deletion Mechanism.

Text Book(s)

1. Julie C. Meloni, SAMS Teach yourself PHP MySQL and Apache, Pearson Education (2007).

2. Steven Holzner, PHP: The Complete Reference, McGraw-Hill

Reference Books

1. Robin Nixon, Learning PHP, MySQL, JavaScript, CSS & HTML5, Third Edition O'reilly, 2014

2. Xue Bai Michael Ekedahl, The web warrior guide to Web Programming, Thomson (2006).

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

III B.Sc. Honours COMPUTER SCIENCE

Course Code	Course Title Web Applications Development using PHP & MYSQL LAB	Program & Semester III B.Sc. Honours-CS V Semester			
Teaching	Hours Allocated:	L	T	P	C
Pre-requisites	Basic Programming	0	0	2	1

List of Experiments:

1. Write a PHP program to Display “Hello”
2. Write a PHP Program to display the today’s date.
3. Write a PHP program to display Fibonacci series.
4. Write a PHP Program to read the employee details.
5. Write a PHP program to prepare the student marks list.
6. Create student registration form using text box, check box, radio button, select, submit button. And display user inserted value in new PHP page.
7. Create Website Registration Form using text box, check box, radio button, select, submit button. And display user inserted value in new PHP page.
8. Write PHP script to demonstrate passing variables with cookies.
9. Write a PHP script to connect MySQL server from your website.
10. Write a program to keep track of how many times a visitor has loaded the page.
11. Write a PHP application to perform CRUD (Create, Read, Update and Delete) operations on a database table.
12. Create a web site using any open-source framework built on PHP and MySQL – It is a team activity wherein students are divided into multiple groups and each group comes up with their own website with basic features.

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE/APPLICATIONS

Model Question Paper

III B.Sc. Honours (Computer Science)- V Semester

Paper Title: Web Application Development Using PHP and MySQL

Time: 3 hours **Max. Marks: 60 Marks**

SECTION – A

Answer any Five of the following questions. **5 x 4 = 20 M**

1. Define variable? Explain about declaring variables in PHP?
2. Explain about while, for loops?
3. Explain about creating an object?
4. Discuss about any 4 String functions in PHP?
5. Write about Redirecting the user in PHP?
6. Write a note on Exception handling?
7. Write about passing session IDs in the Query String?
8. Differentiate between MySQL versus MySQLi functions?

SECTION – B

Answer any Five of the following questions. **5 x 8 = 40 M**

9. Define operator? Explain about different types of operators in PHP?
10. Define function? Explain about functions in PHP?
11. Define Array? Explain about different types of Arrays in PHP?
12. Write about using Date and Time functions in PHP?
13. Explain about accessing form input with user-defined arrays in PHP?
14. Write about how to combine HTML and PHP code on a single page?
15. What is Cookie? Write about setting a cookie with PHP?
16. Explain about Creating Record Addition Mechanism with PHP?

****

With effect from 2025–26 academic year

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE/APPLICATIONS
III B.Sc. Honours (COMPUTER SCIENCE)- V Semester

Paper Title: Web Application Development Using PHP & MySQL

BLUE PRINT FOR THE MODEL PAPER

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	4	32	5	4	20
2	Section – B (Essay Questions)	8	8	64	5	8	40
Total Marks				**96**	**Total Marks**		**60**

BLUE PRINT FOR THE QUESTION PAPER SETTING

Chapter Name	Short Questions 4 Marks	Essay Questions 8 Marks	Marks allotted to the Chapter
UNIT - I	2	2	24
UNIT - II	2	2	24
UNIT - III	2	2	24
UNIT - IV	1	1	12
UNIT - V	1	1	12
Total No. of Questions	**8**	**8**	**96**

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

B.Sc. Honours COMPUTER SCIENCE

Program Code	Course: Internet of Things	Program & Semester III B.Sc. Honours CS-V Semester			
Teaching	Hours Allocated:	L	T	P	C
Pre-requisites		3	0	0	3

Learning Objectives:

To enable students to understand basic IoT constructs, create IoT solutions to real world problems

Learning Outcomes: On successful completion of the course, students will be able to .

UNIT - I

Fundamentals of IoT: Introduction, Definitions & Characteristics of IoT, IoT Architectures, Physical & Logical Design of IoT, Enabling Technologies in IoT, History of IoT, About Things in IoT, The Identifiers in IoT, About the Internet in IoT, IoT frameworks, IoT and M2M.

Applications of IoT: Home Automation, Smart Cities, Energy, Retail Management, Logistics, Agriculture, Health and Lifestyle, Industrial IoT, Legal challenges, IoT design Ethics, IoT in Environmental Protection.

UNIT - II

Sensors Networks : Definition, Types of Sensors, Types of Actuators, Examples and Working, IoT Development Boards: Arduino IDE and Board Types, RaspberriPi Development Kit, RFID Principles and components, Wireless Sensor Networks: History and Context, The node, Connecting nodes, Networking Nodes, WSN and IoT.

Unit - III

Wireless Technologies for IoT: WPAN Technologies for IoT: IEEE 802.15.4, Zigbee, HART, NFC, Z-Wave, BLE, Bacnet and Modbus.

Unit - IV

Arduino Simulation Environment: Arduino Uno Architecture, Setting up the IDE, Writing Arduino Software, Arduino Libraries, Basics of Embedded C programming for Arduino, Interfacing LED, push button and buzzer with Arduino, Interfacing Arduino with LCD. Sensor & Actuators with Arduino: Overview of Sensors working, Analog and Digital Sensors, Interfacing of Temperature, Humidity, Motion, Light and Gas Sensors with Arduino, Interfacing of Actuators with Arduino, Interfacing of Relay Switch and Servo Motor with Arduino.

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

B.Sc. Honours COMPUTER SCIENCE

Unit - V

Developing IOT's: Implementation of IoT with Arduino, Connecting and using various IoT Cloud Based Platforms such as Blynk, Thingspeak, AWS IoT, Google Cloud IoT Core etc. Cloud Computing, Fog Computing, Privacy and Security Issues in IoT.

Text Book(s)

1. Internet of Things - A Hands-on Approach, ArshdeepBahga and Vijay Madisetti, Universities Press,
   2015, ISBN: 9788173719547
2. Sudip Mishra, Anandarup Mukherjee, Arijit Roy: Introduction to IOT, Cambridge University Press.
3. Internet of Things- Dr Surya Durbha & Dr Jyoti Joglekar, Oxford University Press

Reference Books

1. Daniel Minoli, — "Building the Internet of Things with IPv6 and MIPv6: The Evolving World of
   M2M Communications", ISBN: 978-1-118-47347-4, Willy Publications
2. Pethuru Raj and Anupama C. Raman, "The Internet of Things: Enabling Technologies, Platforms, and
   Use Cases", CRC Press

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

B.Sc. Honours COMPUTER SCIENCE

Program Code	Course Internet of Things LAB	Program & Semester III B.Sc. Honours-CS V Semester			
Teaching	Hours Allocated:	L	T	P	C
Pre-requisites	Digital Electronics	0	0	2	1

List of Experiments:

1. Understanding Arduino UNO Board and Components,
2. Installing and work with Arduino IDE.
3. Blinking LED sketch with Arduino.
4. Simulation of 4-Way Traffic Light with Arduino.
5. Using Pulse Width Modulation.
6. LED Fade Sketch and Button Sketch.
7. Analog Input Sketch (Bar Graph with LEDs and Potentiometre).
8. Digital Read Serial Sketch (Working with DHT/IR/Gas or Any other Sensor).
9. Working with Adafruit Libraries in Arduino.
10. Spinning a DC Motor and Motor Speed Control Sketch.
11. Working with Shields.
12. Design APP using Blink App or Things peak API and connect it LED bulb.
13. Design APP Using Blynk App and Connect to Temperature, magnetic Sensors.

With effect from 2025–26 academic year

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE/APPLICATIONS

Model Question Paper

III B.Sc. Honours (Computer Science) – V Semester

Paper Title: Internet of Things

Time: 3 hours **Max. Marks: 60 Marks**

SECTION – A

Answer any Five of the following questions. **5 x 4 = 20 M**

1.

2.

3.

4.

5.

6.

7.

8.

SECTION – B

Answer any Five of the following questions. **5 x 8 = 40 M**

9.

10.

11.

12.

13.

14.

15.

16.

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

III B.Sc. Honours (Computer Science) - V Semester

Paper Title: Internet of Things

BLUE PRINT FOR THE MODEL PAPER

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	No. of Questions	Marks allotted to each question
1	Section – A (Short Questions)	8	4	32	5	4	20
2	Section – B (Essay Questions)	8	8	64	5	8	40
Total Marks				**96**	**Total Marks**		**60**

BLUE PRINT FOR THE QUESTION PAPER SETTING

Chapter Name	Short Questions 4 Marks	Essay Questions 8 Marks	Marks allotted to the Chapter
UNIT - I	2	2	24
UNIT - II	2	2	24
UNIT - III	1	2	20
UNIT - IV	2	1	16
UNIT - V	1	1	12
Total No. of Questions	**8**	**8**	**96**

GOVERNMENT COLLEGE FOR MEN (A), KADAPA
DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS
B.Sc. Honours COMPUTER SCIENCE

Course Code	Course Title Foundations of Data Science	Program & Semester III B.Sc. Honours-CS V Semester			
Teaching	Hours Allocated:	L	T	P	C
Pre-requisites		3	0	0	3

Learning Objectives:

To enable students to develop IoT solutions for real-world problems

Learning Outcomes: On successful completion of the course, students will be able to
1. Identify the need for data science and understand various data collection strategies
2. Understand about NoSQL and Descriptive Statistics
3. Apply Numpy methods to process the data in an array.
4. Summarize and Compute Descriptive Statistics using Pandas.
5. Apply powerful data manipulations visualization using Pandas.

UNIT-I

Introduction to Data Science: Need for Data Science – What is Data Science - Evolution of Data Science, Data Science Process – Business Intelligence and Data Science – Prerequisites for a Data Scientist – Tools and Skills required. Applications of Data Science in various fields – Data Security Issues.

Data Collection Strategies, Data Pre-Processing Overview, Data Cleaning, Data Integration and Transformation, Data Reduction, Data Discretization, Data Munging, Filtering.

UNIT-II

Descriptive Statistics – Mean, Standard Deviation, Skewness and Kurtosis; Box Plots – Pivot Table – Heat Map – Correlation Statistics –ANOVA.

No-SQL: Document Databases, Wide-column Databases and Graphical Databases.

UNIT-III

Python for Data Science –Python Libraries, Python integrated Development Environments (IDE) for Data Science.

NumPy Basics: Arrays and Vectorized Computation- The NumPy ndarray.

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

B.Sc. Honours COMPUTER SCIENCE

UNIT-IV

Introduction to pandas Data Structures: Series, Data Frame and Essential Functionality: Dropping Entries- Indexing, Selection, and Filtering- Function Application and Mapping- Sorting and Ranking.

Summarizing and Computing Descriptive Statistics- Unique Values, Value Counts, and Membership. Reading and Writing Data in Text Format.

UNIT-V

Data Cleaning and Preparation: Handling Missing Data - Data Transformation: Removing Duplicates, Transforming Data Using a Function or Mapping, Replacing Values, Detecting and Filtering Outliers-

Plotting with pandas: Line Plots, Bar Plots, Histograms and Density Plots, Scatter or Point Plots.

Text Book(s):

1. Y. Daniel Liang, “Introduction to Programming using Python”, Pearson, 2012.

2. Wes McKinney, “Python for Data Analysis: Data Wrangling with Pandas, NumPy,and IPython”,
O’Reilly, 2nd Edition, 2018.

Reference Books

1. Sanjeev Wagh, Manisha Bhende, Anuradha Thakare, ‘Fundamentals of Data Science, CRC Press, 1st
Edition, 2022
2. Jake VanderPlas, “Python Data Science Handbook: Essential Tools for Working with Data”, O’Reilly, 2017.

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

B.Sc. Honours COMPUTER SCIENCE

Course Code	Course Title Foundations of Data Science LAB	Program & Semester III B.Sc. Honours-CS V Semester			
Teaching	Hours Allocated:	L	T	P	C
Pre-requisites		0	0	2	1

List of Experiments:

1. Study on various python IDEs for Data Science
2. Create NumPy arrays from Python Data Structures, Intrinsic NumPy objects and Random Functions.
3. Manipulation of NumPy arrays- Indexing, Slicing, Reshaping, Joining and Splitting.
4. Computation on NumPy arrays using Universal Functions and Mathematical methods.
5. Create Pandas Series and Data Frame from various inputs.
6. Import any CSV file to Pandas Data Frame and perform the following: a. Visualize the first and last 10
   records
b. Get the shape, index and column details
c. Select/Delete the records (rows)/columns based on conditions.
d. Perform ranking and sorting operations.
e. Do required statistical operations on the given column

7. Import any CSV file to Pandas Data Frame and perform the following:

   a. Handle missing data by detecting and dropping/ filling missing values.
   b. Transform data using apply () and map() method.
   c. Detect and filter outliers.
   d. Perform Vectorized String operations on Pandas Series.
   e. Visualize data using Line Plots, Bar Plots, Histograms, Density Plots and Scatter Plots.

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE/APPLICATIONS

Model Question Paper

III B.Sc. Honours (Computer Science) - V Semester

Paper Title: Foundations of Data Science

Time: 3 hours **Max. Marks: 60 Marks**

SECTION – A

Answer any Five of the following questions. **5 x 4 = 20 M**

1. Explain about spooling?
2. Discuss about real time systems?
3. Explain about processing hierarchy?
4. Write difference between FCFS and RR?
5. Explain about starvation?
6. What is concurrency? Explain the principles of concurrency?
7. Write about protection and security of paging?
8. What is a file? Explain different file attributes?

SECTION-B

Answer any Five of the following questions **5 x 8 = 40 M**

9. Explain different types of operating systems?
10. What is kernel? Explain different of kernels?
11. Define multithreading? Write about various multithreading models?
12. Define deadlock? Explain how can you avoid deadlock using deadlock prevention?
13. Explain the concept of semaphores?
14. Define memory allocation? Explain different allocation methods or strategies?
15. Explain about paging with suitable example?
16. Write about different file allocation methods?

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE/APPLICATIONS

III B.Sc. Honours (Computer Science)- V Semester

Paper Title: Foundations of Data Science

BLUE PRINT FOR THE MODEL PAPER

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	4	32	5	4	20
2	Section – B (Essay Questions)	8	8	64	5	8	40
Total Marks				96	Total Marks		60

BLUE PRINT FOR THE QUESTION PAPER SETTING

Chapter Name	Essay Questions 8 Marks	Short Questions 4 Marks	Marks allotted to the Chapter
UNIT - I	1	2	16
UNIT - II	2	2	24
UNIT - III	2	2	24
UNIT - IV	2	1	20
UNIT - V	1	1	12
Total No. of : Questions	8	8	96

GOVERNMENT COLLEGE FOR MEN (A), KADAPA
DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

Code	Course Title **IoT Applications Development and Programming -(T)**	Program & Semester III B.Sc. Honours-CS V Semester			
Teaching	Hours Allocated:	**L**	**T**	**P**	**C**
Pre-requisites		**3**	**0**	**0**	**3**

Learning Objectives:

To enable students to develop IoT solutions for real-world problems

Learning Outcomes: On successful completion of the course, students will be able to

1. Understand the Basic Concepts of Internet of Things
2. Learn various Sensors and their associative protocols
3. Learn the Single Board Computers for development of IoT
4. Build the IoT devices with the Node-RED without Complex coding
5. Develop various IoT real-time applications

UNIT-I

Overview of the Internet of Things (IoT) and Sensors: Sensors - Energy-based, Signal Output, Mode of Operation, Electronic Sensors. Connectivity - Bluetooth, Zigbee, Wi-Fi, LoRa, Wired Communication. Machine Intelligence, Active Management, Sensor Fusion, Smart Devices-Human-Computer Interaction, Context Awareness, Actuators, IoT and Smart City Applications-Automobile Sensors, Smart Home Sensors, Smart Transportation Sensors.

UNIT-II

IoT Sensors and Their Interfacing Protocols: Vision and Imaging Sensors- Line Scan Cameras, 3D Depth Cameras, **Sensors That Measure Temperature**-Thermocouples, Resistance Temperature Detector (RTD), Temperature Thermistor Sensors, Semiconductor Temperature Sensors, Radiation Sensors; Proximity Sensors, Pressure Sensors, Position Sensors, Photoelectric Sensors, Particle Sensors, Types of Particle Sensors-Metal Detectors, Level Sensors, Leak Detectors, Humidity Sensors, Gas and Chemical Sensors, Gas Detectors, Carbon Monoxide (MQ7) Detectors, Flame Detectors, **Sensor Communication Protocols**

UNIT-III

Programming Single Board Computers: Arduino Programming, Raspberry Pi-Basic functionality of Raspberry Pi B+ board, setting up the board, configuration and use, Basics of Linux and its use, Introduction to Raspberry Pi GPIO Access, Interfacing DHT, Interfacing Picam to Raspberry Pi zero w, Pi Camera Specifications, Pi Camera Access, Interfacing PIR Sensor

Python: File Concepts, Spreadsheet Concepts, Communication Concepts, Wired and Wireless Programming Concepts

UNIT-IV

Node-RED: Node-RED Features, Installation of Node-RED, Node-RED Architecture, Node- RED Flow Editor, Basic Function Nodes, Node-RED Library, Node-RED Applications; MQTT Protocols, Google Sheets Programming (gspread), Firebase Programming, Matplotlib- Getting Started, Bar Graphs, Scatter Plot, Spectrum Representation, Coherence of Two Signals, Cross-Correlation Graph, Autocorreleation Graph, Changing Figure Size in Different Units, Scale Pie Charts, Style Sheets- FiveThirtyEight Style Sheet, Solarized Light Style Sheet.

UNIT-V

Wireless Connectivity in IoT: Introduction, Low-Power Wide-Area Networks (LPWANs),RFID Protocol, XBEE Radios with Arduino, Bluetooth with Arduino, Arduino with a GSM Modem, Arduino with Firebase Cloud Connectivity

The Internet of Things through the Raspberry Pi: Introduction, Cluster Computing with Raspberry Pi Zero W-Message Passing Interface (MPI), Networking with RP is for Simple MPI Scripts, Simple MPI Programming .

Text Book(s)

1. **Internet of Things Using Single** Board Computers, *G.* R. Kanagachidambaresan**,** Apress, 2022.

2. Practical Node-RED Programming, Taiji Hagino, Packt Publishing, 2021

Reference Books

1. Internet of Things Programming Projects: Build modern IoT solutions with the Raspberry Pi 3 and Python, *Colin Dow*, Packt Publishing, 2021

2. Programming the Internet of Things: An Introduction to Building Integrated, Device-to-Cloud IoT Solutions, *Andy King*, O'Reilly Media, 2021

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE/APPLICATIONS
III B.Sc. Honours (Computer Science)- V Semester

Code	Course Title IoT Applications Development and Programming -(T)	Program & Semester III B.Sc. Honours CS V Semester			
Teaching	Hours Allocated:	L	T	P	C
Pre-requisites		0	0	2	1

List of Experiments:

1. Write a program to switch light on when the input is 1 and switch the light off when the input is 0 using Raspberry pi
2. Install Node-RED and Flow-based Programming Development Environment
3. Create Basic Flows with Major Nodes
4. Develop a Node-Red Flow for various Case Studies
5. Implement Node-RED in the Cloud Calling a Web API from Node-RED
6. Create a To Do Application with Node-RED Handling Sensor Data on the Raspberry Pi
7. Develop a Dashboard with various 2D Graphs with Matplotlib
8. Install MySQL database in Raspberry pi.
9. Write a program to work with basic MySQL queries by fetching data from database in Raspberry pi.
10. Arduino with Firebase Cloud Connectivity
11. Visualize Data by Creating a Server-side Application in the Firebase

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE/APPLICATIONS

Model Question Paper

III B.Sc. Honours (Computer Science) – V Semester

Paper Title: IoT Applications Development and Programming

Time: 3 hours **Max. Marks: 60 Marks**

SECTION – A

Answer any Five of the following questions. **5 x 4 = 20 M**

1.

2.

3.

4.

5.

6.

7.

8.

SECTION – B

Answer any Five of the following questions. **5 x 8 = 40 M**

9.

10.

11.

12.

13.

14.

15.

16.

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

III B.Sc. Honours (Computer Science) - V Semester

Paper Title: IoT Applications Development and Programming

BLUE PRINT FOR THE MODEL PAPER

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	No. of Questions	Marks allotted to each question
1	Section – A (Short Questions)	8	4	32	5	4	20
2	Section – B (Essay Questions)	8	8	64	5	8	40
Total Marks				**96**	**Total Marks**		**60**

BLUE PRINT FOR THE QUESTION PAPER SETTING

Chapter Name	Short Questions 4 Marks	Essay Questions 8 Marks	Marks allotted to the Chapter
UNIT - I	2	2	24
UNIT - II	2	2	24
UNIT - III	1	2	20
UNIT - IV	2	1	16
UNIT - V	1	1	12
Total No. of Questions	**8**	**8**	**96**

With effect from 2024–25 academic year

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

B.Sc. Honours COMPUTER SCIENCE

Course Code 15 B	Course Title Application Development using Python	Program & Semester III B.Sc. Honours CS V Semester			
Teaching	Hours Allocated:	L	T	P	C
Pre-requisites	Basic Mathematics	3	0	0	3

Learning Objectives:

To enable students to develop IoT solutions for real-world problems

Learning Outcomes: On successful completion of the course, students will be able to

1. Examine Python syntax and semantics and be fluent in the use of Python flow control and functions.
2. Demonstrate proficiency in handling Strings and File Systems.
3. Create, run and manipulate Python Programs using core data structures like Lists, Dictionaries and use Regular Expressions.
4. Interpret the concepts of Web Programming and GUI in Python
5. Apply concepts of Python programming in various fields related to IOT, Web Services and Databases in Python.

UNIT-I

Python basics, Objects- Python Objects, Standard Types, Other Built-in Types, Internal Types, Standard Type Operators, Standard Type Built-in Functions, Categorizing the Standard Types, Unsupported Types

Numbers - Introduction to Numbers, Integers, Floating Point Real Numbers, Complex Numbers, Operators, Built-in Functions, Related Modules

Sequences - Strings, Lists, and Tuples, Dictionaries and Set Types

Control Flow, Truthiness, Sorting, List Comprehensions, Generators and Iterators.

UNIT-II

Files: File Objects, File Built-in Function [open()], File Built-in Methods, File Built-in Attributes, Standard Files, Command-line Arguments, File System, File Execution

Exceptions: Exceptions in Python, Detecting and Handling Exceptions, Context Management, Exceptions as Strings, Raising Exceptions, Assertions, Standard Exceptions, Creating Exceptions, Why Exceptions (Now)?, Why Exceptions at All?, Exceptions and the sys Module, Related Modules

Modules: Modules and Files, Namespaces, Importing Modules, Importing Module Attributes, Module Built-in Functions, Packages, Other Features of Modules.

UNIT-III

Regular Expressions: Introduction, Special Symbols and Characters, Res and Python

Multithreaded Programming: Introduction, Threads and Processes, Python, Threads, and the Global Interpreter Lock, Thread Module, Threading Module, Related Modules

GOVERNMENT COLLEGE FOR MEN (A), KADAPA
DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS
III B.Sc. Honours Computer Science

UNIT IV: GUI Programming: Introduction, Tkinter and Python Programming, Brief Tour of Other GUIs, Related Modules and Other GUIs

Web Programming: Introduction, Wed Surfing with Python, Creating Simple Web Clients, Advanced Web Clients, CGI-Helping Servers Process Client Data, Building CGI Application, Advanced CGI, Web (HTTP) Servers

UNIT-V

Database Programming: Introduction, Python Database Application Programmer's Interface (DBAPI), Object Relational Managers (ORMs), Related Modules

Text Book(s)

1. Core Python Programming, Wesley J. Chun, Second Edition, Pearson.
2. Think Python, Allen Downey, Green Tea Press.

Reference Books

1. Introduction to Python, Kenneth A. Lambert, Cengage.
2. Python Programming: A Modern Approach, Vamsi Kurama, Pearson.
3. Learning Python, Mark Lutz, O' Really.

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE & APPLICATIONS

III B.Sc. Honours Computer Science

Course Code 15 B	Course Title Application Development using Python	Program & Semester III B.Sc. Honours CS V Semester			
Teaching	Hours Allocated:	L	T	P	C
Pre-requisites		0	0	2	1

List of Experiments:

1. Write a menu driven program to convert the given temperature from Fahrenheit to Celsius and vice versa depending upon user's choice.
2. Write a python program to calculate total marks, percentage and grade of a student. Marks obtained in each of the three subjects are to be input by the user. Assign grades according to the following criteria :

Grade A: Percentage >=80 Grade B: Percentage>=70 and 80

Grade C: Percentage>=60 and <70 Grade D: Percentage>=40 and <60 Grade E: Percentage<40

3. Demonstrate various methods of Sequence Data Types
4. Write a python program to display the first n terms of Fibonacci series.
5. Write a python program to calculate the sum and product of two compatible matrices.
6. Write a function that takes a character and returns True if it is a vowel and False otherwise.
7. Write a program to implement exception handling.
8. Write a program to implement Multithreading
9. Develop a Python GUI calculator using Tkinter
10. Write a Python program to read last 5 lines of a file.
11. Design a simple database application that stores the records and retrieve the same
12. Design a database application to search the specified record from the database.
13. Design a database application to that allows the user to add, delete and modify the records

With effect from 2024–25 academic year

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE/APPLICATIONS

Model Question Paper

III B.Sc. Honours (Computer Science) - V Semester

Paper Title: Application Development using Python

Time: 3 hours **Max. Marks: 60 Marks**

SECTION – A

Answer any Five of the following questions. 5 × 4 = 20 M

1. Write about different standard types in Python with examples.
2. Explain list comprehensions with suitable examples.
3. What are file objects in Python?
4. Write short notes on Python exceptions.
5. Explain the purpose of the import statement with examples.
6. Write short notes on Python regular expressions.
7. What are Tkinter widgets? Explain with examples.
8. Explain Python Database API (DBAPI).

SECTION – B

Answer any Five of the following questions. 5 × 8 = 40 M

9. Discuss different sequence types in Python with examples.
10. Explain generators and iterators in Python with examples.
11. Describe file handling in Python with examples of built-in methods.
12. Explain exception handling mechanisms in Python with examples.
13. Discuss threads and processes in Python. Explain the Global Interpreter Lock (GIL).
14. Explain the use of Tkinter for GUI programming with examples.
15. Discuss CGI programming in Python with suitable examples.
16. Explain how Python connects with databases using ORMs

With effect from 2024–25 academic year

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE/APPLICATIONS

LIST OF PAPER SETTERS

1.	**DR. A. SRI LAKSHMI** Lecturer in Computer Applications Govt. Degree College Nagari, Chittoor (dt) Mobile no: 9866866854 E-mail id: ayathusrilakshmi@gmail.com
2.	**DR. C. V. KRISHNA VENI** Lecturer in Computer Science SKR & SKR Govt. Degree College for Women (A),Kadapa, Andhra Pradesh. Mobile no: 9490519982 E-mail id: cvkrishnaveni19@gmail.com
3	**Mr. D. NAGA BHUSHANAM** Lecturer in Computer Science Govt. Degree College, Venkatagiri, Nellore (District), Andhra Pradesh Mobile No: 6381503360 E-mail id: bhushanamdot@gmail.com
4	**Mr. MANOJ PRABHAKAR DARSI** Lecturer in Computer Science Dk Government College for women (A), Nellore, Andhra Pradesh. Mobile No: 9492441242 E-mail id: manojprabhakar07573@gmail.com
5	**Mrs. DEEPTHI KANXHARLA** Lecturer in Computer Science Govt. Degree College for Women (A). Guntur, Andhra Pradesh – 522001. Mobile No: 7729090929 E-mail id: deepthi.sw@gmail.com
6	**Mr. M. SUNIL KUMAR REDDY** Lecturer in Computer Science Govt. College for Men, Kurnool, Andhra Pradesh Mobile No: 7659955402 E-mail id: sunil.hgm@gmail.com
7	**Mr. ISMAIL M** Lecturer in Computer Science PVKN Govt. College (A), Chittoor, Andhra Pradesh. Mobile No: 8555982073 E-mail id: m.ismaial543@gmail.com

8	**Dr. Y. JAHNAVI** Lecturer in Computer Science Dr.V.S. Krishna Govt. Degree & PG College(A), Visakhapatnam, Andhra Pradesh. Mobile No: 9440735479 E-mail Id: yjahnavi.2011@gmail.com
9	**T JHANSI RANI** Lecturer in Computer Science Govt. Degree College, Nandikotkur, Nandyal Dist., Andhra Pradesh. Mobile No: 9100378951 E-mail Id: jhansigdcndkr@gmail.com
10	**K. Anusha Devi,** Lecturer in Computer Science Govt. Degree College, Proddatur, Kadapa (District), Andhra Pradesh. Mobile No: 8142153631 E-mail Id: anushakurnool@gmail.com
11	**Dr. A. Renuka Devi** Lecturer in Computer Science KSN Govt Degree College for women, Anantapur, Andhra Pradesh. Mobile No: 9490445698, 8309394701 E-mail Id: renukaeshwardevi@gmail.com
12	**B Durga Anuja** Lecturer in Computer Applications Govt Degree College for Women Srikalahasti Chittoor, Andhra Pradesh. Mobile No: 9908236775 E-mail Id: anujabalireddi@gmail.com
13	**P. Amaranatha Reddy,** Lecturer in Computer Applications, GDC- Nandikotkur Nandyal Dist., Andhra Pradesh. Mobile No: 9701427020 E-mail Id: amaranatha.p@gmail.com
14	**M.Padma,** LECTURER IN COMPUTER APPLICATION, GDC SRISAILAM PROJECT, Nandyal Dist., Andhra Pradesh. Mobile No: 7013996310 E-mail Id: padma.gprec@gmail.com

GOVERNMENT COLLEGE FOR MEN (A), KADAPA

DEPARTMENT OF COMPUTER SCIENCE/APPLICATIONS

PANEL OF EXAMINERS

1.	**Mrs. A. Haritha** Lecturer in Computer Science SKR & SKR Govt. Degree College for Women (A), Kadapa. Mobile no: 9652010013 E-mail id: harithaavvaru@gmail.com
2.	**Dr. C. V. Krishna Veni** Lecturer in Computer Science SKR & SKR Govt. Degree College for Women (A), Kadapa. Mobile no: 9490519982 E-mail id: cvkrishnaveni19@gmail.com
3.	**Mr. Manoj Prabhakar Darsi** Lecturer in Computer Science Dk Government College for women (A),Nellore, Andhra Pradesh. Mobile No: 9492441242 E-mail id: manojprabhakar07573@gmail.com
4.	**Smt. Neela Kiranmai** Lecturer in Computer Science Govt. Degree College, Vempalle, Kadapa – 516329 Mobile: 7989666405 E-mail Id: kiranmai.525@gmail.com
5.	**Mr. Shaik Shaifuddin** Lecturer in Computer Science Govt. Degree College, Vempalle, Kadapa – 516329 Mobile: 9052311737 E-mail Id: shafiuddin111@gmail.com
6.	**Dr. K. Vasudha Rani,** Lecturer in Computer Science SKR & SKR Govt. Degree College for Women (A), Kadapa, AP. Mobile No: 7702976885
7.	**Mr. G. Chandra Sekhara Reddy** Lecturer in Computer Science, S.K.S.C. Degree College, Proddatur, Kadapa(Dist.), AP.Mobile No: 89855 44805
8.	**Mr. S A Jeelani Basha** Lecturer in Computer Science, Govt. Degree College, Rayachoty, Annamayya (dist.)Mobile No:8639500585
9.	**Mr. M. Rama Mohan Reddy** Lecturer in Computer Science, Govt. Degree College for Women, Rayachoty, Annamayya (dist.)Mobile No: 7794004237
10.	**Mr.G.Subbarayudu** Lecturer in Computer Science Nagarjuna Degree College, Kadapa Mobile No: 9705093303 E-mail Id: ganga.subbu@gmail.com

11.	**Dr. Y. JAHNAVI** Lecturer in Computer Science Dr.V.S. Krishna Govt. Degree & PG College(A), Visakhapatnam, Andhra Pradesh. Mobile No: 9440735479 E-mail Id: yjahnavi.2011@gmail.com
12.	**T JHANSI RANI** Lecturer in Computer Science Govt. Degree College, Nandikotkur, Nandyal Dist., Andhra Pradesh. Mobile No: 9100378951 E-mail Id: jhansigdcndkr@gmail.com
13.	**K. Anusha Devi,** Lecturer in Computer Science Govt. Degree College, Proddaturu, Kadapa (District), AP. Mobile No: 8142153631 E-mail Id: anushakurnool@gmail.com
14.	**Dr. A. Renuka Devi** Lecturer in Computer Science KSN Govt Degree College for women, Anantapur, Andhra Pradesh. Mobile No: 9490445698, 8309394701 E-mail Id: renukaeshwardevi@gmail.com
15.	**B Durga Anuja** Lecturer in Computer Applications Govt Degree College for Women Srikalahasti Chittoor, Andhra Pradesh. Mobile No: 9908236775 E-mail Id: anujabalireddi@gmail.com
16.	**P. Amaranatha Reddy,** Lecturer in Computer Applications, GDC- Nandikotkur Nandyal Dist., Andhra Pradesh. Mobile No: 9701427020 E-mail Id: amaranatha.p@gmail.com
17.	**M.Padma,** Lecturer in Computer Applications, GDC Srisailam Project, Nandyal Dist., Andhra Pradesh. Mobile No: 7013996310 E-mail Id: padma.gprec@gmail.com


Thank you