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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Sc Hons(Electronics/Comp Science)
Subject : Electronics
Title of Paper : **Cellular Mobile Communication**
Paper Code : R23ELE502/R23MELE502
W.E.F : 2025-26

Max Marks : 60
Pass Mark : 24
Duration : 3Hrs
Time : 2 pm - 5 pm
Date : 12-11-2025

(12)

SECTION-A

I. Answer any FIVE of the following questions:

5X4=20M

1. Define Advanced Mobile Phone Service System.
2. Define Global system for Mobile Communication.
3. Describe the Channel Assignment Techniques.
4. Define Cellular Digital Packet Data.
5. Describe Short Message Service.
6. Define GSM signalling protocol.
7. Define Wireless Transport layer security and Wireless Datagram Protocol.
8. Define Wireless local loop communication flow.

SECTION-B

II. Answer ALL of the following questions:

5X8=40M

9. Describe the architecture of Global System for Mobile Communication.

(OR)

10. Describe the Digital Cellular System and Cordless telephony.
11. Define the Handoff and describe its detection.

(OR)

12. Describe the cell structure and Channel assignment Techniques.
13. Describe GSM signalling protocol and explain its architecture.

(OR)

14. Describe in detail, the operation of International roaming.
15. Explain in detail about the Wireless Transaction Protocol.

(OR)

16. Describe the Wireless Mark-up Language and WML script.
17. Describe in detail about the Bluetooth Technology.

(OR)

18. Describe the 3rd generation Mobile Services.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Sc Hons [Electronics]

Max Marks : 60

Subject : Electronics

Pass Mark : 24

Title of Paper : **Digital System Design**

Duration : 3 Hrs

Paper Code : R23ELE504

Time : 2 pm - 5 pm

W.E.F : 2025-26

Date : 01-11-2025

(13)

SECTION-A

I. Answer any FIVE of the following Questions

5X4=20M

1. Convert the following

i) $(6C)_{16} = (?)_2$

ii) $(168)_{10} = (?)_8$

2. Explain the tabulation method using an example.

3. Discuss about hardware description language.

4. Explain the working of decoder with a neat circuit diagram.

5. Implement a 8:1 MUX using a,b as select lines for the below function $F(a,b,c) = \sum(1,2,4,5)$

6. Explain the operation of counters with circuit diagram.

7. Write the VHDL code for 4-bit up counter.

8. Explain about hazards in asynchronous sequential circuits.

SECTION-B

II. Answer ALL the following Questions

5X8=40M

9. Simplify the following Boolean function in sum of products and product of sums for $F(A,B,C,D) = \sum(0,1,2,5,8,9,10)$

[OR]

10. Simplify the following Boolean function by using the tabulation method for $F = \sum(0,1,2,8,10,11,14,15)$

11. Discuss the analysis and design procedures of combinational circuits.

[OR]

12. Explain the design procedure of code conversions.

13. Explain about memory unit and programmable logic devices.

[OR]

14. Implement $Y = ad + bc^1 + bd$ using 4:1 MUX with a, b as select lines.

15. Write the VHDL code for SR flipflop and D flip flop.

[OR]

16. Design a counter with the following repeated binary sequence : 0,1,2,3,4,5,6 using JK Flipflops

17. Explain the analysis and design procedures of asynchronous sequential circuits.

[OR]

18. Discuss the race free state assignment in asynchronous sequential circuits.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)
V – SEMESTER END EXAMINATIONS

Class : III B.Sc Hons [Electronics]
Subject : Electronics
Title of Paper : **Industrial Electronics**
Paper Code : R23ELE503
W.E.F : 2025-26

Max Marks : 60
Pass Mark : 24
Duration : 3 Hrs
Time : 2 pm - 5 pm
Date : 30.10.2025

(14)

SECTION-A

I. Answer any FIVE of the following Questions

5X4=20M

1. What is filter? Explain the function of shunt capacitor filter.
2. Give a brief note on three terminal voltage regulators.
3. Write a short note on simple regulated transistorized power supply.
4. Distinguish between RPS and SMPS.
5. Explain the operation of half wave voltage doubler.
6. Write the applications of voltage multipliers.
7. Explain the working of a SCR half wave rectifier.
8. Write the applications of heat effects.

SECTION-B

II. Answer ALL the following Questions

5X8=40M

9. Explain the working of full wave rectifier and derive expression for its efficiency and ripple factor.

[OR]

10. Discuss the working of transistor series and shunt voltage regulators.

11. Explain the working of regulated power supply.

[OR]

12. Describe the principle and working of switch mode power supply.

13. Describe the function of full wave voltage doubler.

[OR]

14. Explain the operation of voltage Tripler.

15. Explain the SCR full wave rectifier with mathematical analysis and wave forms.

[OR]

16. What is inverter? Explain the operation of SCR as an inverter.

17. Give a brief note on resistance and inductance heating

[OR]

18. Discuss in detail about dielectric heating.

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KAKARAPARTI BHAVANARAYA COLLEGE (AUTONOMOUS)

V – SEMESTER END EXAMINATIONS

Class : III B.Sc Hons [Electronics & Computer Science] Max Marks : 60
Subject : Electronics Pass Mark : 24
Title of Paper : **Communication Protocols And Technologies** Duration : 3 Hrs
Paper Code : R23ELE501/R23MELE501 Time : 2pm - 5pm
W.E.F : 2025-26 Date : 25-10-2025

(B)

SECTION-A

I. Answer ALL the following Questions

5X8=40M

1. Explain various types of data transmission with examples.

[OR]

2. Explain in detail about data transmission modes.

3. Explain briefly about OSI communication layer.

[OR]

4. Discuss about guided transmission media.

5. Explain in detail about Ethernet and UART protocols.

[OR]

6. Explain briefly about Dynamic host configuration protocol.

7. Discuss about Bluetooth communication in wireless communication.

[OR]

8. Explain briefly about GSM technology.

9. Write a brief note on LAN and WAN.

[OR]

10. Explain about domain name system server.

SECTION-B

II. Answer any FIVE of the following Questions

5X4=20M

11. Explain about synchronous communication.

12. Write a short note on twisted pair cable.

13. Explain about error correction method.

14. Discuss in detail about RS232 communication protocol.

15. Explain about I2C communication protocol.

16. Write a short note on Satellite communication.

17. Explain about firewall and mention its applications.

18. Write a short note on switch and hub

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)
V - SEMESTER END EXAMINATIONS

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Class : III BBA Hons [General & Business Analytics] Max Marks : 60
Subject : Computer Science Pass Mark : 24
Title of Paper : **Web Development Using PHP And MY SQL** Duration : 3 Hrs
Paper Code : R23MCSC504 Time : 2pm - 5pm
W.E.F : 2025-26 Date : 14/11/2025

SECTION-A

I. Answer any FIVE of the following Questions

5X4=20M

1. Explain about Variables in PHP?
2. Explain File Functions in PHP?
3. Explain find and replace in regular expression in PHP?
4. Discuss about Concept of Arrays?
5. How we can use functions in PHP?
6. Write a short note on Recursion?
7. Explain about form Attributes and form elements.
8. Explain the concept of MySQL in Database?

SECTION-B

II. Answer ALL the following Questions

5X8=40M

9. Briefly explain about Operators in PHP?

[OR]

10. Explain various Conditional Statements in PHP?

11. Define Array? Explain different types of Arrays with examples?

[OR]

12. Explain String Manipulation in PHP?

13. Explain the Passing by Reference Vs Passing by Values in PHP?

[OR]

14. Explain Various types of Exception Handling mechanism in PHP?

15. Explain the concept of Form with example program in PHP?

[OR]

16. Discuss about Creating and Drawing Images in PHP?

17. Explain the Connection with MySQL?

[OR]

18. How to create a database table in MySQL?

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONC OUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Voc Hons[SD]/B.Com Hons[Computers] Max Marks : 60
Subject : Computer Science & Applications Pass Mark : 24
Title of Paper : **Mobile Applications Development** Duration : 3 Hrs
Paper Code : R23CSC506/R23WT502 Time : 2pm - 5pm
W.E.F : 2025-26 Date : 14/11/2025

SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

1. What is Android? Write about open headset alliance.
2. Write about Android SDK.
3. Explain Android Virtual Device.
4. Write a short note on JDK.
5. Explain about check Box in Android.
6. Explain Radio Button in Android.
7. Write a short note on testing Android applications.
8. Explain about Google maps.

SECTION-B

II. Answer ALL the following questions.

5X8=40M

9. Explain about Features of Android.

(OR)

10. Explain Android architecture.

11. Explain Android development Tools.

(OR)

12. Explain about Android Broad cast Receivers.

13. Explain Time and date picker with an example.

(OR)

14. Explain about different layouts with examples.

15. Explain about Android preferences.

(OR)

16. Explain about different types of resources.

17. Explain different types of storage in Android.

(OR)

18. Explain about create, insert, delete, retrieve and update data in ~~tables~~ *SQL lite database*

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)	
V - SEMESTER END EXAMINATIONS	
Class : III B.Sc Hons[CS,PHY,STAT,ELE,MATHS,AI]/BCA Hons	Max Marks : 60
Subject : Computer Science & Applications	Pass Mark : 24
Title of Paper : Web Applications Development using PHP & MYSQL/Web Development using PHP & MYSQL	Duration : 3 Hrs
Paper Code : R23CSC502/R23BCA502/R23MCSC502	Time : 2pm-5pm
W.E.F : 2025-26	Date : 14/11/2025

SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

1. What are the different data types in PHP?
2. Explain any three operators used in PHP.
3. What is PHP object? How is it created?
4. How can you format a string using PHP?
5. How do you retrieve data from a form using \$ Post an \$ GET?
6. How can you combine PHP an HTML in a single page?
7. Explain the advantages and disadvantages of using cookies for storing data in web application.
8. What are the steps to create a table in MYSQL?

SECTION-B

II. Answer ALL the following questions.

5X8=40M

9. Explain different control flow statements in PHP including if, else, else if and switch with syntax and examples.
(OR)
10. Differentiate between global and local variable with examples.
11. What are arrays in PHP? Explain different types of arrays and provide example.
(OR)
12. Describe how PHP handles date and time. Explain the use of functions like date () time () and mktime () with formatting examples.
13. Describe file handling operations in PHP. Explain how to open, read write and close files using built in functions with proper examples.
(OR)
14. What is exception handling in PHP. Describe the use of try, catch and throw with examples. How does improve error management.
15. Describe the complete life cycle of a cookie in PHP. Include creation access, modification and deletion with syntax and examples.
(OR)
16. Explain how to implement sessions in PHP. Discuss how sessions are started, how to variables are stored and retrieved and how to destroy a session with example.
17. Explain How to PHP connects with My SQL. Describe the full process of data base connection, record insertion and display of data using of a sample script.
(OR)
18. Describe how to perform CRUD Operations (Create, Read, Update, Delete) in PHP using MY SQL with proper code snippets and SQL queries.

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V - SEMESTER END EXAMINATIONS

Class : III B.Sc Hons(Data Science)

Max Marks : 60

Subject : Computer Science

Pass Mark : 24

Title of Paper : **Web Scraping with Python**

Duration : 3Hrs

Paper Code : R23DS503

Time : 2pm - 5pm

W.E.F : 2025-26

Date : 14/11/2025

SECTION-A

I. Answer any FIVE of the following questions.

5X4=20M

1. Why do we use BeautifulSoup in Python for scraping?
2. Describe the difference between web scraping and web crawling.
3. What are the key components of a Scrapy spider.
4. Describe the common database techniques used in Python
5. What are the advantages and disadvantages of Markov Models?
6. What are the features of Natural Language Toolkit?
7. What are the risks of using undocumented APIs?
8. Discuss the ethical considerations and legal issues in web scraping.

SECTION-B

II. Answer ALL of the following questions.

5X8=40M

9. Explain about crawling across the internet.
(OR)
10. Compare the strengths and weaknesses of using regex vs. BeautifulSoup for parsing HTML.
11. Classify websites into static and dynamic types and explain the scraping strategies for each.
(OR)
12. List the different approaches to structuring crawlers.
13. List the advantages of using Markov Models in web scraping.
(OR)
14. Describe why cookies are important in web scraping.
15. Discuss the differences between using manual CAPTCHA solving versus automated CAPTCHA solving in web scraping.
(OR)
16. List tools and libraries in Python that help with API crawling and JSON parsing.
17. Describe static, dynamic and API- Based web scrapers
(OR)
18. Explain common form security features to avoid scrapping traps.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Voc Hons[SD]

Max Marks : 60

Subject : Computer Science

Pass Mark : 24

Title of Paper : **Data Structures & Algorithms**

Duration : 3 Hrs

Paper Code : R23MWT502

Time : 2pm - 5pm

W.E.F : 2025-26

Date : 12-11-2025

(20)

SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

1. Explain about space complexity.
2. Explain about operations of Linked List.
3. Explain about types of Linked List.
4. Explain Advantages of Stack.
5. Explain about Polish Notations.
6. Explain about Insertion sort.
7. Explain about Bubble Sort.
8. Explain about tree terminology.

SECTION-B

II. Answer ALL the following questions.

5X8=40M

9. Explain about Data structure operations
(OR)
10. Explain about Array types.
11. Write a program to implement single Linked list.
(OR)
12. Explain about circular linked list.
13. Explain about stack and its operations.
(OR)
14. Explain about Queue and its operations.
15. Explain about binary search.
(OR)
16. Explain about Merge sort.
17. Explain about BFS.
(OR)
18. Explain about DFS.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V – SEMESTER END EXAMINATIONS

Class : III BCA Hons/B.Sc Hons[DS] Max Marks : 60
Subject : Computer Science & Applications Pass Mark : 24
Title of Paper : **Unsupervised Machine Learning with Python** Duration : 3 Hrs
Paper Code : R23MBCA502/R23DS502 Time : 2pm - 5pm
W.E.F : 2025-26 Date : 12-11-2025

(21)

SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

1. Define clustering and explain types of clustering techniques.
2. Write an example of clustering on a map.
3. Explain Association Analysis.
4. Explain about the uncovering patterns in congressional voting.
5. Write about the FP – tree.
6. What are frequent item sets in click stream?
7. How to reduce dimensionality of semiconductor.
8. Explain the process of SVD in python.

SECTION-B

II. Answer ALL the following questions.

5X8=40M

9. Explain about K-means clustering algorithm.

(OR)

10. Write a program to implement the K-means Algorithm.

11. How to finding frequent item sets with the Apriori algorithm? Explain.

(OR)

12. Write a program to implement the Apriori Algorithm.

13. Explain about the FP-Growth Algorithm.

(OR)

14. How to finding co-occurring words in a twitter feed? Explain.

15. Explain about the Dimensionality Reduction technique.

(OR)

16. Write a program to implement the principle component Analysis (PCA).

17. Explain about the singular value decomposition (SVD).

(OR)

18. Explain about the Restaurant Recommendation system.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Sc Hons [Artificial Intelligence] Max Marks : 60 (22)
Subject : Computer Science Pass Mark : 24
Title of Paper : **Algorithms for Intelligent Systems** Duration : 3 Hrs
Paper Code : R23AI502 Time : 2pm - 5pm
W.E.F : 2025-26 Date : 12-11-2025

SECTION-A

I. Answer any FIVE of the following Questions

5X4=20M

1. Explain about Goals of AI.
2. Explain about Applications of AI.
3. Explain about Depth Limit Search
4. Explain about Game Playing
5. Explain about Constraint Satisfaction
6. Explain about Informed Search algorithms
7. Explain about A* Search
8. Explain about Neural networks

SECTION-B

II. Answer ALL the following Questions

5X8=40M

9. Explain about Bi Directional Search.
[OR]
10. Explain about uninformed search algorithms
11. Explain about Depth Limit search.
[OR]
12. Explain about State Space Search.
13. Explain about Recursive Best First Algorithm.
[OR]
14. Explain about Constraint Satisfaction.
15. Explain about Greedy Best First Search.
[OR]
16. Explain about Iterative Deepening A*.
17. Explain about CNN and its Architecture.
[OR]
18. Explain about Multi-Layer Perceptron.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

23

Class : III BBA Hons

Max Marks : 60

Subject : Computer Applications

Pass Mark : 24

Title of Paper : **Introduction to Business Intelligence using Power BI**

Duration : 3 Hrs

Paper Code : R23MCSC503

Time : 2 pm - 5 pm

W.E.F : 2025-26

Date : 04-11-2025

SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

1. What is Business Intelligence? Explain its uses.
2. Explain the role of Business Analyst.
3. Explain about data cleaning.
4. Write a short Note on shaping techniques in BI.
5. Explain about measures in power BI.
6. Explain how to format the visualization in power BI.
7. What is DAX? What is need of DAX.
8. What is the use of the power BI Mobile APP.

SECTION-B

II. Answer ALL the following questions.

5X8=40M

9. Explain about power BI Components.

(OR)

10. Explain about different visualization Tools.
11. Explain how to connect to different data sources in power BI.

(OR)

12. How to remove duplicate values using power query? Explain with an example.
13. Explain different data Models in power BI.

(OR)

14. Explain about different charts in power BI.
15. Explain about logical functions in DAX with examples.

(OR)

16. Explain Date and Time function in DAX.
17. Explain different features available in power BI Mobile app.

(OR)

18. What are the different ways to share a report in power BI service.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V – SEMESTER END EXAMINATIONS

Class : III B.Sc Hons[Computers]
Subject : Computer Science
Title of Paper : **Web Interface Designing Technologies**
Paper Code : R23CSC501
W.E.F : 2025-26

Max Marks : 60
Pass Mark : 24
Duration : 3 Hrs
Time : 2 pm - 5 pm
Date : 04-11-2025

(24)

SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

1. Write about structure of HTML with example.
2. Explain about the types of Lists in HTML with example program.
3. Differentiate between check boxes and radio button with example.
4. Explain about pseudo class in CSS.
5. What are operators provided in Java script? Explain.
6. Explain differences between HTML and DHTML.
7. Explain different Kinds of dialog boxes.
8. Write about the servers like wamp and bitnani

SECTION-B

II. Answer ALL the following questions.

5X8=40M

9. Explain different formatting tags in HTML.

(OR)

10. Explain about embedding multimedia components in HTML.

11. Explain about types of CSS.

(OR)

12. Explain about image Gallery.

13. Explain about control statements in Java Script.

(OR)

14. Explain about string and mathematical functions in Java Script.

15. Explain about Data validations.

(OR)

16. Explain about HTML form elements using Java Script object Model.

17. Write about user roles and profiles in word press.

(OR)

18. Write about plug ins in detail.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Sc Hons[PHY,ELE,STAT,MATHS,AI]/BCA Hons Max Marks : 60
Subject : Computer Science & Applications Pass Mark : 24
Title of Paper : **Web Programming** Duration : 3 Hrs
Paper Code : R23MCSC501/R23BCA501 Time : 2 pm - 5 pm
W.E.F : 2025-26 Date : 04-11-2025

SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

1. Explain about features of HTML.
2. Explain about differences between HTML Vs HTMLS.
3. Explain about Q and cite elements.
4. Explain about time elements.
5. Explain about Border Properties.
6. Explain about <div> tag and tag in HTML.
7. Explain about Navigation Bar.
8. Explain about event handler.

SECTION-B

II. Answer ALL the following questions.

5X8=40M

9. Explain the structure of HTML with example program.

(OR)

10. Explain about HTML elements and HTML Attributes.
11. Explain about the Block element, Block quote element and pre element with example program.

(OR)

12. Explain the character elements with example programs.
13. What is CSS? Explain about types of CSS with example program.

(OR)

14. Explain about different types of selectors with example program.
15. Explain about <table> tag in CSS with example program.

(OR)

16. Explain about different types of href attribute values with example program.
17. Explain about the image attributes and I frame with example program.

(OR)

18. Explain about document object model with example program.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Voc Hons[SD]

Max Marks : 60

Subject : Computer Science

Pass Mark : 24

Title of Paper : **Machine Learning Basics**

Duration : 3 Hrs

Paper Code : R23MWT501

Time : 2pm - 5pm

W.E.F : 2025-26

Date : 04-11-2025

26

SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

1. What is Machine Learning?
2. Define Human Learning? Explain its types.
3. What is over fitting?
4. Write about the logistic Regression.
5. Explain Boosting.
6. Difference between supervised and unsupervised Learning.
7. What is variance?
8. Explain about association rules.

SECTION-B

II. Answer ALL the following questions.

5X8=40M

9. Explain about types of machine learning.

(OR)

10. Write about data pre-processing.

11. Explain about decision tree Algorithm.

(OR)

12. Explain about the Linear regression.

13. Explain about K-means clustering Algorithm.

(OR)

14. Explain about principle component Algorithm (PCA).

15. Explain about the Basic feature Engineering.

(OR)

16. Explain about the Bays theorem.

17. Explain about the Apriori Algorithm.

(OR)

18. How to build FP - Tree.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Sc Hons(DS)

Max Marks : 60

(7)

Subject : Computer Science

Pass Mark : 24

Title of Paper : **Data Wrangling with Java Script**

Duration : 3Hrs

Paper Code : R23DS504

Time : 2pm - 5pm

W.E.F : 2025-26

Date : 04-11-2025

SECTION-A

I. Answer any FIVE of the following questions.

5X4=20M

1. Describe the process of Data Wrangling with suitable examples.
2. Analyze the advantages and limitations of using REST APIs for data retrieval.
3. What is Asynchronous coding?
4. Write the procedure to import data from MongoDB.
5. Write the procedure to export data to a JSON text file
6. Discuss how exploratory coding helps in discovering data patterns.
7. Define CSV files and explain their purpose in data storage.
8. Demonstrate a method to detect and fix broken data.

SECTION-B

II. Answer ALL of the following questions.

5X8=40M

9. Discuss the features of JavaScript that make it suitable for data wrangling tasks.
(OR)
10. Describe how to navigate the JavaScript ecosystem.
11. Develop a Node.js script that loads multiple types of files
(OR)
12. Describe different error handling mechanisms in Node.js such as try/catch, callbacks, and Promises.
13. Analyze the differences between parsing JSON and CSV files and the challenges involved.
(OR)
14. Implement a procedure to export parsed data into a database such as MongoDB or MySQL.
15. Discuss how exploratory coding helps in debugging, testing, and understanding Node.js applications.
(OR)
16. Discuss the methods for computing trend or derived columns in a dataset using Data-Forge.
17. Define dataset cleaning and list common tasks involved in cleaning data.
(OR)
18. Discuss common sources of bad or messy data and their impact on analysis.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III BBA Hons[Business Analytics]
Subject : Computer Applications
Title of Paper : **Tableau**
Paper Code : R23MCSC505
W.E.F : 2025-26

Max Marks : 60
Pass Mark : 24
Duration : 3 Hrs
Time : 2 pm - 5 pm
Date : 04-11-2025

(28)

SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

1. Explain about Tableau and Tableau Desktop.
2. Explain about aggregation in a Tableau.
3. Explain about line charts.
4. Explain about scatter plot in Tableau.
5. Explain about spark line's in Tableau.
6. Explain about Box and Whisker Plot.
7. Explain about Funnel Charts.
8. Explain about Time Series.

SECTION-B

II. Answer ALL the following questions.

5X8=40M

9. Explain about Dimensions and Measures in Tableau.

(OR)

10. Explain how to shape your data using Tableau.

11. Explain the ways to create a Bar chart in Tableau.

(OR)

12. Explain how to create sets in Tableau.

13. Explain about Histogram in Tableau.

(OR)

14. Explain about Tree map in Tableau.

15. Explain about Dual - axis and sequential path in Tableau.

(OR)

16. Explain about Gantt Chart in Tableau.

17. Explain about how to prepare Forecasting length.

(OR)

18. Explain Adhoc Analysis.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Sc Hons(DS)

Max Marks : 60

Subject : Computer Science

Pass Mark : 24

Title of Paper : **Computational Statistics & R Programming**

Duration : 3Hrs

Paper Code : R23MCSC506

Time : 2 pm - 5 pm

W.E.F : 2025-26

Date : 01-11-2025

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SECTION-A

I. Answer any FIVE of the following questions.

5X4=20M

1. Explain about apply() and lapply() in R.
2. Explain about readr and readxl.
3. Explain group-wise analysis in R.
4. Explain Exporting results to CSV or word in R.
5. Explain Scatter plot in R.
6. Explain ggplot2 package in R
7. Explain Multiple Linear Regression in R.
8. How do you create and switch between branches in Git?

SECTION-B

II. Answer ALL of the Following Questions.

5X8=40M

9. Define JSON. Explain working with JSON Files in R.

(OR)

10. Explain Control Structures in R.

11. Explain about Janitor package in R.

(OR)

12. Explain about skimr package in R.

13. Explain Heatmaps in R

(OR)

14. Explain Correlation matrices in R.

15. Explain the concept of ANOVA in R

(OR)

16. Explain the concept of T-tests in R.

17. How do you evaluate model performance using metrics like accuracy, precision, recall, and F1-score?

(OR)

18. What Libraries in R are commonly used for data visualization?

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III BCA Hons / B.Voc Hons [WT]
Subject : Computer Science & Applications
Title of Paper : **Software Testing / Selenium**
Paper Code : R23BCA504/R23WT501
W.E.F : 2025-26

Max Marks : 60
Pass Mark : 24
Duration : 3 Hrs
Time : 2pm - 5pm
Date : 01-11-2025

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SECTION-A

I. Answer any FIVE of the following Questions

5X4=20M

1. What are the limitations of Selenium.
2. Explain how to generate scripts using web elements?
3. Explain Radio buttons and Check boxes in Selenium.
4. Write about navigation in Selenium.
5. Explain benefits of automation framework.
6. Write a short notes on TestNG Listeners?
7. Explain difference between Grid 1.0 Vs Grid 2.0.
8. Explain about Selenium Grid.

SECTION-B

II. Answer ALL the following Questions

5X8=40M

9. Explain briefly about Automation Testing Life Cycle.

[OR]

10. Explain features of Selenium.

11. Explain the installation of inspector tools and its uses?

[OR]

12. Explain step by step process of creating a Test in Selenium IDE?

13. Explain alert messages in Selenium with example program?

[OR]

14. Explain how to capture screen shot in Selenium with example program?

15. How to install TestNG in Eclipse?

[OR]

16. Explain briefly about types of automation framework?

17. Explain briefly about Selenium Grid Architecture?

(OR)

18. How to run a sample test case in Selenium Grid?

Room No: _____

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Sc Hons [Computer Science]

Max Marks : 60

Subject : Computer Science

Pass Mark : 24

Title of Paper : **Application Development Using Python**

Duration : 3 Hrs

Paper Code : R23CSC504

Time : 2pm - 5pm

W.E.F : 2025-26

Date : 01-11-2025

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SECTION-A

I. Answer any FIVE of the following Questions

5X4=20M

1. Define Python Objects. Give examples.
2. What are complex numbers in Python? Explain with syntax.
3. Explain the use of open() function in Python.
4. What are standard exceptions in Python? Give two examples.
5. Differentiate between the thread module and the threading module.
6. What is Tkinter? Mention any three Tkinter widgets.
7. Write a python snippet to create a basic GUI window using Tkinter.
8. Explain Database API.

SECTION-B

II. Answer ALL the following Questions

5X8=40M

9. Explain standard type of Operators and built-in functions in Python.

[OR]

10. Discuss different types of sequences in Python with examples.

11. Describe file handling in Python. Explain file methods and attributes.

[OR]

12. Explain how exceptions are detected and handled in Python.

13. Describe how multithreading programming is implemented in Python.

[OR]

14. Explain how to Synchronize threads and avoid race conditions in Python.

15. Explain the architecture of a CGI-based web application in Python.

[OR]

16. Create a GUI application & Explain step by step procedure.

17. Describe the architecture and steps in database programming using Python.

[OR]

18. What is ORM in Python? Explain how it simplifies database interaction.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V – SEMESTER END EXAMINATIONS

Class : III B.Sc Hons[Artificial Intelligence]
Subject : Computer Science
Title of Paper : **Software Project Management**
Paper Code : R23AI504
W.E.F : 2025-26

Max Marks : 60
Pass Mark : 24
Duration : 3 Hrs
Time : 2 pm - 5 pm
Date : 01-11-2025

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SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

1. What is meant by setting project objectives?
2. What is the main idea behind Agile methods?
3. Define COCOMO-II.
4. What is meant by the 'critical path' in project management?
5. What is Risk Identification in a software project?
6. What is the objective of activity planning in project management?
7. What is meant by resource allocation in project scheduling?
8. What is meant by organizational behaviour in software project management?

SECTION-B

II. Answer ALL the following questions.

5X8=40M

9. Explain the importance of software project management in successful software development.
(OR)
10. Discuss project portfolio management and its role in selecting and managing multiple software projects.
11. Explain about the different types of software process models. How do you choose an appropriate model for a project?
(OR)
12. Explain the COSMIC full function points method for effort estimation with an example.
13. Explain the steps involved in sequencing and scheduling project activities.
(OR)
14. Describe the critical path method. How is it used to identify the longest path in a project network.
15. Explain the forward pass and backward pass techniques with a simple example.
(OR)
16. Explain about PERT and Monte Carlo simulation. How are they used in Risk management in scheduling.
17. Discuss the Oldham – Hackman Job characteristic model. How does it help in motivating software project staff.
(OR)
18. Explain the role of communication plans and communication genres in effective team collaboration give examples.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III BBA Hons(BA)
Subject : Computer Applications
Title of Paper : **Data Analytics with Python**
Paper Code : R23CSC507
W.E.F : 2025-26

Max Marks : 60
Pass Mark : 24
Duration : 3Hrs
Time : 2 pm - 5 pm
Date : 01-11-2025

33

SECTION-A

I. Answer any FIVE of the following questions.

5X4=20M

1. Explain Python for data Analysis.
2. What is matplotlib libraries?
3. Explain Types of numpy array.
4. Explain Linear Algebra.
5. Explain Storage and File Formats.
6. Explain Interacting with Web APIs.
7. Explain Handling Hierarchical Indexing.
8. Explain Modelling Libraries in Python.

SECTION-B

II. Answer ALL questions of the following questions.

5X8=40M

9. What is Data Analysis? Explain Python for Data Analysis.
(OR)
10. What are the Essential of Python Libraries?
11. Explain about NumPy libraries.
(OR)
12. Explain Pseudorandom Number Generation.
13. Explain how to create and manipulate and transferred data using pandas.
(OR)
14. Describe the steps for loading data from a text file into a panda dataframe.
15. Explain Rehashing and Pivoting the data.
(OR)
16. Explain about join, grouping and concatenating in Data Wrangling.
17. Discuss about Interfacing between pandas and Model code.
(OR)
18. Explain Plotting and Visualization in pandas.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Sc Hons[Computers]
Subject : Computer Science
Title of Paper : **Foundations of Data Science**
Paper Code : R23CSC503
W.E.F : 2025-26

Max Marks : 60
Pass Mark : 24
Duration : 3 Hrs
Time : 2pm - 5pm
Date : 30.10.2025

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SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

1. Explain about data science process.
2. Explain about Mean and standard Deviation.
3. Write about Box plots.
4. Explain about Boolean Indexing.
5. Explain about Mathematics and statistical methods.
6. Explain about Dropping Entries.
7. Explain about Sorting.
8. Explain how to transforming Data using a Function or Mapping.

SECTION-B

II. Answer ALL the following questions.

5X8=40M

9. Explain about Evolution of Data Science.
(OR)
10. Explain about applications of Data Science in various fields.
11. Explain about Skewness and Kurtosis.
(OR)
12. Explain about Anova.
13. Explain about Data types for ndarrays.
(OR)
14. Explain about basic Indexing and slicing.
15. Explain about Data Frame and Essential Functionality.
(OR)
16. Explain about Indexing, Selection and Filtering in Pandas.
17. Explain about Data cleaning and preparation.
(OR)
18. Explain about Histograms and Density plot.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Sc Hons[Artificial Intelligence]
Subject : Computer Science
Title of Paper : **Natural Language Processing**
Paper Code : R23AI503
W.E.F : 2025-26

Max Marks : 60
Pass Mark : 24
Duration : 3 Hrs
Time : 2pm - 5pm
Date : 30.10.2025

35

SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

1. Explain the key challenges in Natural Language processing.
2. Define Tokenization and explain its importance in NLP.
3. Define Interpolation in Back off in the context of Language Model.
4. What are word classes? Give examples of five Major word classes in English.
5. Define Ambiguity in Syntactic parsing Give an example.
6. What is the purpose of Treebanks in NLP?
7. Define First-Order-logic (FOL) with example.
8. Difference between stemming and lemmatization.

SECTION-B

II. Answer ALL the following questions.

5X8=40M

9. Explain about Language Modeling in NLP.

(OR)

10. Explain about the English morphology.

11. Explain unsmoothed N-Gram models and how they are evaluated with examples.

(OR)

12. Explain the rule based stochastic and transformation based POS tagging approaches.

13. Discuss different types of grammar rules used in English syntax with examples.

(OR)

14. Discuss probabilistic CGFs and their use in systematic analysis.

15. Explain the requirement for semantic representation.

(OR)

16. How word similarity is computed using distributional method explain?

17. Explain about the discourse segmentation and coherence with examples.

(OR)

18. Discuss co reference regulation and its challenges in NLP.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Com Hons(Computers)
Subject : Computer Applications
Title of Paper : **Advanced Cyber Security**
Paper Code : R23CSC505
W.E.F : 2025-26

Max Marks : 60
Pass Mark : 24
Duration : 3Hrs
Time : 2 pm - 5 pm
Date : 30.10.2025

(36)

SECTION-A

I. Answer any FIVE of the following questions.

5X4=20M

1. Explain about Domain Name System.
2. Explain about cryptography.
3. Explain phishing, malware Techniques.
4. What is the impact of disruptions?
5. Explain man in the middle attack.
6. Write a short note on malware.
7. Explain Honeypots.
8. Explain about Naming conversions.

SECTION-B

II. Answer ALL of the following questions.

5X8=40M

9. Explain the network security concepts.

(OR)

10. Explain difference between symmetric and asymmetric encryption.

11. Discuss about Anti forensics.

(OR)

12. Explain about Tunneling Techniques.

13. Explain about different techniques to gain a foothold.

(OR)

14. Explain types of Disruption methods.

15. Explain about self-replicating malicious code.

(OR)

16. Explain about stealing information an exploitation.

17. Discuss memory forensics?

(OR)

18. Explain Automated Malicious Code Analysis Systems.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)
V - SEMESTER END EXAMINATIONS

Class : III BCA Hons & B.Voc Hons [WT]

Max Marks : 60

Subject : Computer Science

Pass Mark : 24

Title of Paper : **Cloud Computing/Cloud Computing And Deployment**

Duration : 3 Hrs

Paper Code : R23BCA503/R23WT504

Time : 2pm - 5pm

W.E.F : 2025-26

Date : 30.10.2025

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SECTION-A

I. Answer any FIVE of the following Questions

5X4=20M

1. What are the differences between cloud computing and mobile computing.
2. What are the challenges in Cloud Computing?
3. Write a short note on Security Policy in Cloud.
4. What are the main cloud computing services?
5. Explain Advantages and Disadvantages of Virtualization.
6. What are virtualization security threats?
7. Explain Load Balancing in Cloud.
8. What is Infrastructure Security in Cloud?

SECTION-B

II. Answer ALL the following Questions

5X8=40M

9. Explain the Cloud Computing Model with a neat diagram.

[OR]

10. Explain Evaluation and Enabling technologies in Cloud Computing.

11. Discuss Cloud Computing Services with example.

[OR]

12. Explain the elements of Cloud Security Model.

13. Explain different types of virtualization with examples.

[OR]

14. Explain machine-level and server-level virtualization.

15. Describe Service Oriented Architecture (SOA) and its benefits.

[OR]

16. Discuss scaling strategies in Cloud with examples.

17. Explain relational and non-relational DBMS in Cloud.

[OR]

18. Describe various threats to Cloud Security.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Voc Hons[SD]
Subject : Computer Science
Title of Paper : **Full Stack Web Development**
Paper Code : R23WT503
W.E.F : 2025-26

Max Marks : 60
Pass Mark : 24
Duration : 3 Hrs
Time : 2 pm - 5 pm
Date : 25-10-2025

34

SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

1. What is No SQL Data Base?
2. Explain about Data types in Mongo DB.
3. Explain about up sert.
4. Explain about find () find one () Methods.
5. Explain about React Installation steps.
6. Explain about functional components.
7. Explain about React Keys.
8. Explain about Node. Js Overview.

SECTION-B

II. Answer ALL the following questions.

5X8=40M

9. Explain about Mongo DB Data base, Mongo DB collections Mongo DB Documents.

(OR)

10. Explain about inserting documents from Java script file.

11. Explain about update operations in Mongo DB.

(OR)

12. Explain about Delete operations in Mongo DB.

13. Explain about class components and functional components in React - JS.

(OR)

14. Explain about REACT PROPS.

15. Explain about React CSS.

(OR)

16. Explain about React State.

17. Explain about Node. JS Basics.

(OR)

18. Explain about React Mouse Events.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)
V – SEMESTER END EXAMINATIONS

39

Class : III B.Sc Hons [Artificial Intelligence]

Max Marks : 60

Subject : Computer Science

Pass Mark : 24

Title of Paper : **Introduction to Predictive Analytics Using Python**

Duration : 3 Hrs

Paper Code : R23AI501

Time : 2pm - 5pm

W.E.F : 2025-26

Date : 25-10-2025

SECTION-A

I. Answer any FIVE of the following Questions

5X4=20M

1. Explain about Ridge Regression.
2. Explain about Optimism of the training error rate.
3. Explain how to estimate of In-sample prediction error.
4. Explain about Regression.
5. Explain about Classification trees.
6. Explain about Back propagation.
7. Mention the issues in training NN.
8. Explain about principal components.

SECTION-B

II. Answer ALL the following Questions

5X8=40M

9. Explain about Linear Discriminant Analysis.

[OR]

10. Explain about Perceptron learning algorithm.

11. Explain about Bayesian approach and BIC.

[OR]

12. Explain about Bootstrap methods.

13. Explain about Boosting methods-exponential loss and AdaBoost.

[OR]

14. Explain about Additive models.

15. Explain about K-nearest Neighbour.

[OR]

16. Explain about Support Vector Machines (SVM).

17. Explain about Association rules.

[OR]

18. Explain about Unsupervised Learning.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Sc Hons(DS)/BCA Hons

Max Marks : 60

(40)

Subject : Computer Science & Applications

Pass Mark : 24

Title of Paper : **Supervised Machine Learning with Python**

Duration : 3Hrs

Paper Code : R23DS501/R23MBCA501

Time : 2pm-5pm

W.E.F : 2025-26

Date : 25-10-2025

SECTION-A

I. Answer any FIVE of the following questions.

5X4=20M

1. Evaluate the impact of machine learning in modern industries.
2. Define classification, regression, and clustering.
3. Show how data splitting is applied in building a predictive model.
4. Explain about k-fold cross-validation, and stratified sampling.
5. Evaluate the role of probability distribution in decision-making processes.
6. Discuss the tools or libraries available for parsing RSS feeds.
7. Differentiate between binary and multinomial logistic regression with examples.
8. Describe linear and non-linear SVM.

SECTION-B

II. Answer ALL of the following questions.

5X8=40M

9. Define machine learning and describe the different types of machine learning approaches.

(OR)

10. Implement KNN on a sample dataset and analyze the results.

11. Describe the role of consistency in data quality.

(OR)

12. Discuss the advantages and disadvantages of using decision trees.

13. Illustrate with examples how probability distribution aids in prediction.

(OR)

14. Explain the Naïve Bayes algorithm with an example.

15. Describe the role of the sigmoid function in logistic regression.

(OR)

16. Implement gradient descent optimization algorithm with an example?

17. Describe the Sequential Minimal Optimization (SMO) algorithm and its role in training Support Vector Machines.

(OR)

18. List different types of kernel functions used in SVM.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

(11)

Class : III B.Com Hons(Computers)

Max Marks : 60

Subject : Commerce & Management

Pass Mark : 24

Title of Paper : **GST Procedures and Practice**

Duration : 3Hrs

Paper Code : R23COM502

Time : 2pm - 5pm

W.E.F : 2025-26

Date : 12-11-2025

SECTION-A

I. Answer the following questions.

5X12=60M

1. What is the Overview of GST? Explain the disadvantages of Indirect Taxes before GST.

(OR)

2. What is the GST Council? Explain its objectives and functions.

3. Explain the process of create Company in Tally.

(OR)

4. Explain the differences between creation of General Ledger and GST Ledger.

5. Customising the Existing Voucher types with applicable GST Rates.

(OR)

6. How to Mapping of Input Tax Credit on Purchase Vouchers?

7. Explain the different types of GST Returns.

(OR)

8. What are the different steps to filing GST returns?

9. What is the Refund? Explain the refund process under GST.

(OR)

10. Explain the Administrative structure of GST Officers.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

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V - SEMESTER END EXAMINATIONS

Class : III B.Com Hons[Computers]

Max Marks : 60

Subject : Commerce & Management

Pass Mark : 24

Title of Paper : **Labour Legislations & Compensation Management**

Duration : 3 Hrs

Paper Code : R23MCOM501

Time : 2 pm - 5 pm

W.E.F : 2025-26

Date : 04-11-2025

SECTION-A

I. Answer ALL the following Questions.

5X12=60M

1. What is labour legislation? Explain concepts of historical development of labour legislation in India.

(OR)

2. Discuss briefly about the classification of labour legislation.

3. Discuss briefly about welfare provisions under the 1948 factory act.

(OR)

4. Define trade union and explain objectives and functions of trade unions.

5. What are the main provisions of Employee provident Fund (EPF) 1952 Act?

(OR)

6. Explain the objectives of social insurance and social assistance.

7. Write about concept and significance of wages.

(OR)

8. Explain about a) Minimum wage b) Fair wage c) living wage.

9. What is the role of wage boards? Explain its needs and importance.

(OR)

10. Explain the provisions of Bonus act 1965.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONC MOUS)

V - SEMESTER END EXAMINATIONS

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Class : III BBA Hons[Business Analytics]
Subject : Commerce & Management
Title of Paper : **Business Research Methods**
Paper Code : R23BBBA502
W.E.F : 2025-26

Max Marks : 60
Pass Mark : 24
Duration : 3 Hrs
Time : 2 pm - 5 pm
Date : 12-11-2025

SECTION-A

I. Answer ALL the following Questions.

5X12=60M

1. Explain concept, nature and scope of business research methods.

(OR)

2. Explain about the characteristics and types of Research.

3. Explain in detail about Research design process.

(OR)

4. Write about exploratory, Descriptive and experimental Research.

5. What are the principles of questionnaire and schedule?

(OR)

6. What is sampling? Explain types of sampling and sampling Errors.

7. What is Tabulation? Explain processing data and presentation of Data.

(OR)

8. Explain about Z-test, t-test, and Chi - square test.

9. Write a short note on pre-writing consideration and Research Report components.

(OR)

10. Explain types of Research reports and common problems of Research Report.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

(44)

Class : III BBA Honours
Subject : Commerce & Management
Title of Paper : **Labour Legislation**
Paper Code : R23BBA502
W.E.F : 2025-26

Max Marks : 60
Pass Mark : 24
Duration : 3Hrs
Time : 2pm - 5pm
Date : 12-11-2025

SECTION-A

I. Answer the following questions.

5X12=60M

1. Discuss the impact of fundamental rights on the formulation of Labour Laws in India.

(OR)

2. Analyse the implications of Articles 21, 23 and 24 in preventing exploitation of labour in India.

3. What are the key definitions provided under the Factories Act, 1948?

(OR)

4. What are intra-mural and extra-mural welfare measures under the Factories Act, 1948?

5. Outline the key provisions of the Payment of Gratuity Act, 1972.

(OR)

6. What are the salient features and objectives of the Payment of Wages Act, 1936?

7. Describe the Role of Trade Union in company-level negotiations.

(OR)

8. What forums are available for the settlement of disputes under the Industrial Disputes Act, 1947?

9. Explain the major reforms introduced in Labour Code on Industrial Relations, 2020.

(OR)

10. Discuss the provisions regarding workplace safety in the Labour Code on Safety and Working Conditions.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Com Hons [Computers]
Subject : Commerce
Title of Paper : **Organizational Behaviour**
Paper Code : R23MCOM502
W.E.F : 2025-26

Max Marks : 60
Pass Mark : 24
Duration : 3 Hrs
Time : 2 pm - 5 pm
Date : 01-11-2025

(45)

SECTION-A

I. Answer ALL the following Questions

5X12=60M

1. Define Organizational behaviour and explain the significance of Organizational Behaviour.

[OR]

2. Explain the factors influencing perception.

3. Difference between Groups and Teams.

[OR]

4. What are the reasons for conflicts?

5. Define Leadership and explain the importance of Leadership.

[OR]

6. Explain the impact of leadership on effectiveness of Groups.

7. Define Organizational change and explain the role of change agents.

[OR]

8. Explain the process of Organizational Development.

9. What is Organizational culture and explain its importance.

[OR]

10. Give the suggestions to improve the Organizational effectiveness.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III BBA Hons

Subject : Commerce & Management

Title of Paper : **Production & Operations Management**

Paper Code : R23BBA504

W.E.F : 2025-26

Max Marks : 60

Pass Mark : 24

Duration : 3 Hrs

Time : 2 pm - 5 pm

Date : 01-11-2025

(46)

SECTION-A

I. Answer ALL the following Questions.

5X12=60M

1. Explain the Nature and scope of operations management.

(OR)

2. Explain the difference between manufacturing and service operations.

3. Explain the importance and factors effecting choice of location.

(OR)

4. What is meant by location Analysis? Explain the different techniques of location analysis.

5. What is meant by PPC? Explain objectives and functions of PPC.

(OR)

6. Explain the role of capacity planning decision in an organization.

7. What is meant by productivity? Explain the factors affecting productivity in an organization.

(OR)

8. Describe the concept of work measurement.

9. Explain the various models of Inventory control.

(OR)

10. Define TQM. Explain the objectives and advantages of TQM.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III BBA Honours
Subject : Commerce & Management
Title of Paper : **Financial Markets**
Paper Code : R23BBA503
W.E.F : 2025-26

Max Marks : 60
Pass Mark : 24
Duration : 3Hrs
Time : 2 pm - 5 pm
Date : 30.10.2025

(12)

SECTION-A

I. Answer the following questions.

5X12=60M

1. Explain the importance and functions of Financial System.

(OR)

2. Describe about the Financial Markets and Financial Services.

3. Define the Money Market? Explain the structure, feature of Money Market.

(OR)

4. Explain about the Money Market Instrument in Indian Money Market.

5. Explain the Objectives, importance and Functions of Capital Markets.

(OR)

6. Describe the structure of Capital Market.

7. Explain the features and functions of Foreign Exchange Market.

(OR)

8. Explain the Theory of Purchasing Power Parity.

9. What are the differences between the Hedging and Speculation in Derivate Market?

(OR)

10. Explain about the Forward and Future in Derivative Market.

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**KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)
V - SEMESTER END EXAMINATIONS**

Class	: III B.Com Hons [Computers]	Max Marks	: 60
Subject	: Commerce	Pass Mark	: 24
Title of Paper	: Advanced Corporate Accounting	Duration	: 3 Hrs
Paper Code	: R23COM501	Time	: 2pm - 5pm
W.E.F	: 2025-26	Date	: 25-10-2025

SECTION-A

I. Answer ALL the following Questions **5X12=60M**

1. Explain the concept of purchase consideration and discuss the factors that influence its determination.

(OR)

2. A and B carrying on business in partnership, sharing profits and losses in the ratio of 3:2 wish to dissolve the firm and sell the business to a limited company on 31st December 2007. When the firm's balance sheet stands as under.

Liabilities	Rs	Assets	Rs.
Capital Accounts		Furniture	8,000
A	70,000	Auto	12,000
B	50,000	Stock	81,000
Reserve	20,000	Debtors	60,000
Sundry creditors	25,000	cash	4,000
	1,65,000		1,65,000

A Limited Company with an authorised capital of Rs. 3,00,000 in equity shares of Rs. 10 each, is registered to purchase the above business on the following terms.

- (a) Goodwill is valued at Rs. 30,000
- (b) Furniture and stock are revalued at Rs. 6,000 and Rs. 85,000 respectively.
- (c) Debtors are subject to 5% provision.

The auto is not required by the company and A takes over it an agreed valuation of Rs. 8,000. Purchase consideration is satisfied by issue of Equity shares of Rs. 10 each at par. Show Journal Entries and Balance Sheet of the company assuming that the same set of books is continued.

3. What are the Advantages and disadvantages of amalgamation of companies?

(OR)

4. Summarised Balance sheet of Aravind Ltd. And Vasu as on 31.3.06

[P.T.O]

Liabilities	Aravind Ltd.	Vasu Ltd.	Assets	Aravind Ltd.	Vasu Ltd.
Issued share capital: Shares of Rs. 100 each	8,00,000	6,00,000	Goodwill	-	1,20,000
Creditors	80,000	2,40,000	Fixed assets less depreciation	6,00,000	2,40,000
Profit and loss a/c	1,40,000	-	Current assets	4,20,000	2,80,000
			Profit and loss a/c	-	2,00,000
	10,20,000	8,40,000		10,20,000	8,40,000

Aravind Ltd., resolved to take over business of Vasu Ltd., with effect from April. The share Holders of later company agreed to accept shares in the former company on basis that the shares of Aravind Ltd were worth Rs. 12 each and the shares of Vasu Ltd., were Rs. 5 each. The purchasing company took over the fixed assets of Vasu Ltd., together with the current assets and were not required to pay the liabilities.

Assuming the necessary formalities were carried out, make entries in books of Aravind Ltd. draw up its balance sheet after merger.

5. Differentiate between internal reconstruction and external reconstruction of a company.

(OR)

6. The balance sheet of Balaji Limited on 31st Dec. 2006 was given below

Liabilities	Rs.	Assets	Rs.
Share capital		Goodwill	30,000
4,000 pref. shares of Rs. 100 each	4,00,000	Freehold premises	4,00,000
8,000 equity shares of Rs. 100 each	8,00,000	Plant & Machinery	6,00,000
5% debentures	2,00,000	Stock	80,000
Bank overdraft	1,00,000	Debtors	1,00,000
creditors	2,00,000	Profit and loss	4,90,000
	17,00,000	Account	17,00,000

The company adopted the following scheme of capital reduction, which was duly approved by the court.

- a) The preference shares be reduced to Rs. 75 per share and equity shares to Rs. 37-50.
- b) The debenture holders had taken over stock and debtors in full satisfaction of their claim
- c) The goodwill account is to be written off.
- d) The freehold premises to be depreciated by 50% and
- e) The value of Plant and Machinery to be increased by Rs. 50,000.

Give Journal entries to implement the above scheme and prepare.

Revised Balance Sheet of the company.

[Continued to Next page]

7. What are the features of Holding companies? Explain.

(OR)

8. On 1st August, 2002, Honey Ltd. Purchased 8,000 shares in Sony Ltd. @ Rs. 17 per share. The balance sheet of Sony Ltd as at 31st March, 2003 is as follows.

Liabilities	Rs.	Assets	Rs.
Share capital(fully paid shares of Rs. 100 each)	10,00,000	Goodwill	1,00,000
Reserves (as on 1.4.2002)	4,00,000	Fixed assets (cost Rs. 2,00,000)	
Profit and loss account	3,00,000	Current assets	16,00,000
10% Debentures of Rs. 100 each	2,00,000		6,00,000
Sundry Creditors	4,00,000		
	23,00,000		23,00,000

Additional information:

(i) The opening balance in the profit and loss account was Rs 1,60,000 out of which dividend amounting to Rs 1,00,000 was paid in September, 2002.

(ii) Honey Ltd. held 50% of the debentures in Sony Ltd.

(iii) Sundry creditors include Rs 40,000 payable to Honey Ltd.

You are required to ascertain the

i) minority interest. ii) cost of control (capital reserve)

9. What is a deficiency in liquidation and how a Deficiency account is prepared? Explain its importance in the Distribution of assets.

(OR)

10. The following particulars relate to a Limited Company which has gone into voluntary liquidation.

You are required to prepare the Liquidator's Statement of Account allowing for his remuneration @ 22% on all assets realised excluding call money received and 2% on the amount paid to unsecured creditors including preferential creditors.

Share capital issued:

10000 Preference shares of Rs 100 each fully paid up.

50,000 Equity shares of Rs 10 each fully paid up.

30,000 Equity shares of Rs 10 each, Rs 8 paid up.

Assets realised Rs 20,00,000 excluding the amount realised by sale of securities held by partly secured creditors.

Preferential creditors 50,000

Unsecured creditors 18,00,000

Partly secured creditors (asset realized RS 3,20,000) 3,50,000

Debenture holders having floating charge on all assets of the company 6,00,000

Expenses of liquidation 1,000

A call of Rs 2 per share on the partly paid equity shares was duly received except in case of one shareholder owning 1,000 shares. Also calculate the percentage of amount paid to the unsecured creditors to the total unsecured creditors.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

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V - SEMESTER END EXAMINATIONS

Class : III BBA Hons[Business Analytics]
Subject : Commerce & Management
Title of Paper : **Sales & Distribution Management**
Paper Code : R23BBBA501
W.E.F : 2025-26

Max Marks : 60
Pass Mark : 24
Duration : 3 Hrs
Time : 2pm - 5pm
Date : 25-10-2025

SECTION-A

I. Answer ALL the following Questions.

5X12=60M

1. Explain the main objectives and functions of sales management.

(OR)

2. What is the sales management cycle? Explain each stage in detail.

3. Discuss the AIDAS theory in detail with suitable examples.

(OR)

4. What is the buying Formula theory? How is useful in understanding consumer behaviour.

5. What are sales quotas? Explain its characteristics, types and purposes.

(OR)

6. Discuss the objectives and importance of sales territories.

7. Explain the design and importance of distribution channel in sales.

(OR)

8. What are the key marketing decision made by retailers and wholesalers?

9. Define physical distribution and explain its key objectives.

(OR)

10. Describe the use of internet and EDI in order processing and supply chain management.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

(5)

Class : III BBA Hons

Max Marks : 60

Subject : Commerce & Management

Pass Mark : 24

Title of Paper : **Sales and Distribution Management**

Duration : 3Hrs

Paper Code : R23BBA501

Time : 2 pm - 5 pm

W.E.F : 2025-26

Date : 25 - 10 - 2025

SECTION-A

I. Answer the following questions.

5X12=60M

1. What are the different types of sales organisations?

(OR)

2. Write about the importance and scope of Sales Management.

3. What is meant by Sales Management Cycle?

(OR)

4. Write about Emerging Trends in Sales Management.

5. What are the factors is to consider in determine the sales forecast?

(OR)

6. What is meant by Sales Quotas? Explain its importance?

7. Determining specific requirements of the Sales Personnel.

(OR)

8. What is the fringe benefits available to Sales man?

9. Explain the stages and types of channel conflict.

(OR)

10. Write about the emerging trends in Distribution.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)**V - SEMESTER END EXAMINATIONS**

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Class	: III B.Sc Hons[Mathematics / Computers]	Max Marks	: 60
Subject	: Mathematics	Pass Mark	: 24
Title of Paper	: Vector Calculus & Problem Solving Sessions	Duration	: 3 Hrs
Paper Code	: R23MAT502/R23MMAT502	Time	: 2pm - 5pm
W.E.F	: 2025-26	Date	: 12-11-2025

SECTION-A**I. Answer any FIVE of the following Questions.****5X4=20M**

- Evaluate $\iint xy(x+y) dx dy$ over the region R bounded by $y = x^2$ and $y = x$.
- Evaluate $\iint xy dx dy$ over the positive quadrant of the circle $x^2 + y^2 = a^2$.
- Evaluate $\int_0^a \int_0^b \int_0^c (x^2 + y^2 + z^2) dx dy dz$.
- Find the area of an ellipse represented by $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$.
- Find the directional derivative of the function $f = x^2 - y^2 + 2z^2$ at the point P(1,2,3) in the direction of line \overline{PQ} where Q(5,0,4).
- Find the angle of intersection at (4, -3, 2) of spheres $x^2 + y^2 + z^2 = 29$, $x^2 + y^2 + z^2 + 4x - 6y - 8z - 47 = 0$.
- Evaluate $\int_C \vec{F} \cdot d\vec{r}$, where $\vec{F} = 3x^2 \vec{i} + (2xz - y) \vec{j} + 2z \vec{k}$ along the straight line C from (0,0,0) to (2,1,3).
- Show that the area bounded by a simple closed curve C is given by $\frac{1}{2} \oint_C x dy - y dx$ and hence find area of the ellipse $x = a \cos \theta$ and $y = b \sin \theta$, $0 \leq \theta \leq 2\pi$.

SECTION-B**II. Answer ALL the following questions.****5X8=40M**

- Evaluate $\iint r \sin \theta dr d\theta$ over the cardioid $r = a(1 - \cos \theta)$ above the initial line.
(OR)
- By using the transformation $x + y = u$, $y = uv$, show that $\int_0^1 \int_0^{1-x} e^{\frac{y}{x+y}} dx dy = \frac{1}{2}(e - 1)$.
- Evaluate $\iiint xyz dx dy dz$ over the positive octant of the sphere $x^2 + y^2 + z^2 = a^2$.
(OR)
- Using double integral, find the volume of the tetrahedron bounded by the coordinate planes and plane $\frac{x}{a} + \frac{y}{b} + \frac{z}{c} = 1$.
- If $\vec{f} = \text{grad}(x^3 + y^3 + z^3 - 3xyz)$, then find $\text{div } \vec{f}$ and $\text{curl } \vec{f}$.
(OR)
- Prove that $\text{curl}(\vec{A} \times \vec{B}) = \vec{A} \text{div } \vec{B} - \vec{B} \text{div } \vec{A} + (\vec{B} \cdot \nabla)\vec{A} - (\vec{A} \cdot \nabla)\vec{B}$.
- Evaluate $\int_S \vec{F} \cdot \vec{N} dS$, where $\vec{F} = (x + y^2) \vec{i} - 2xz \vec{j} + 2yz \vec{k}$ and S is the part of the Plane $2x + y + 2z = 6$ located in the first octant.
(OR)
- If $\vec{F} = 2xz \vec{i} - x \vec{j} + y^2 \vec{k}$ then evaluate $\int_V \vec{F} \cdot dV$, where V is the region bounded by $x = 0, x = 2, y = 0, y = 6, z = x^2, z = 4$.
- State and prove Gauss Divergence theorem.
(OR)
- State and prove Stoke's theorem.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)**V - SEMESTER END EXAMINATIONS**

Class : III B.Sc Hons[Mathematics]

Max Marks : 60

Subject : Mathematics

Pass Mark : 24

Title of Paper : **Number Theory & Problem Solving Sessions**

Duration : 3 Hrs

Paper Code : R23MAT504

Time : 2pm - 5pm

W.E.F : 2025-26

Date : 01-11-2025

(24)

SECTION-A**I. Answer any FIVE of the following Questions.****5X4=20M**

1. If a/c and b/c with $\gcd(a, c) = 1$, then show that ab/c .
2. Use the Euclidean algorithm to obtain x and y , where $\gcd(56, 72) = 56x + 72y$.
3. If $n \geq 1$, then prove that $\sum_{d|n} \varphi(d) = n$.
4. Write Dirichlet multiplication is commutative and associative.
5. Show that the average order of $\varphi(n)$ is $\frac{3n}{\pi^2}$.
6. Prove that a lattice point (a, b) is visible from origin iff a and b are relatively prime.
7. Find the remainder $15!$ is divided by 17 .
8. Prove that Legendre's symbol $(n|p)$ is completely multiplicative function.

SECTION-B**II. Answer ALL the following questions.****5X8=40M**

9. State and prove Division algorithm theorem.

(OR)

10. State and Prove Fundamental theorem on Arithmetic.

11. If f is an arithmetical function with $f(1) \neq 0$ and f^{-1} is dirichlet inverse of f then

$$\text{prove that } f^{-1} = \frac{1}{f(1)} \text{ and } f^{-1}(n) = \frac{-1}{f(1)} \sum_{d|n} f\left(\frac{n}{d}\right) f(d) \text{ for } n > 1.$$

(OR)

12. Let f be multiplicative, then prove that f is completely multiplicative \Leftrightarrow

$$f^{-1}(n) = \mu(n)f(n), \text{ for all } n \geq 1.$$

13. State and Prove Euler's Summation theorem.

(OR)**[P.T.O]**

14. For all $x \geq 1$, then Prove that $\sum_{n \leq x} d(n) = x \log x + (2C - 1)x + O(\sqrt{x})$.

15. State and Prove Wilson's theorem.

(OR)

16. State and Prove Chinese Remainder theorem.

17. If $n \not\equiv 0 \pmod{p}$ and consider the least positive residues mod p of the following $\frac{(p-1)}{2}$ multiples of n : $n, 2n, 3n, \dots, \frac{(p-1)}{2}n$. If m denotes the number of these residues which exceed $p/2$, then prove that $(n|p) = (-1)^m$.

(OR)

18. If p is an odd prime and $\chi(r) = (r|p)$, then prove that $G(1, \chi^2) = (-1|p)_p$.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)**V - SEMESTER END EXAMINATIONS**

Class : III B.Sc Hons(Mathematics)

Max Marks : 60

Subject : Mathematics

Pass Mark : 24

Title of Paper : **Advanced Numerical Methods & Problem Solving Sessions**

Duration : 3Hrs

Paper Code : R23MAT503

Time : 2pm - 5pm

W.E.F : 2025-26

Date : 30.10.2025

(66)

SECTION-A**I. Answer any FIVE of the following questions****5X4=20M**

- Using Newton's forward difference formula, find the derivative at $x=1.0$ for the data: $x:1.0, 1.1, 1.2, 1.3, f(x):1.000, 1.1052, 1.2214, 1.3499$.
- Write Stirling's interpolation formula. Differentiate it once.
- Apply Simpson's $\frac{1}{3}$ rule to approximate $\int_0^1 \frac{1}{1+x^2} dx$ using 6 subintervals.
- State Euler-Maclaurin summation formula.
- Solve the system by Gauss elimination:

$$\begin{aligned} x+y+z &= 6, \\ 2x+3y+z &= 10, \\ x-y+2z &= 5 \end{aligned}$$
- Solve the linear system $4x+y=9, x+3y=6$ using matrix inversion method.
- Perform two iterations of Jacobi's method for solving: $10x-y+2z=6, -x+11y-z=25, 2x-y+10z=-11$, with initial approximation $(0,0,0)$.
- Apply Runge-Kutta method of order 2 to compute $y(0.1)$ for $\frac{dy}{dx} = x+y, y(0) = 1$, with $h=0.1$.

SECTION-B**II. Answer ALL of the following questions****5X8=40M**

- Using Newton's divided difference formula, find $f(1.5)$ from the data: $x:1.0, 1.3, 1.6, 1.9, f(x):1.0, 1.69, 2.56, 3.61$.

(OR)

- Using central difference formula, evaluate $f(2.0)$ for: $x:1.8, 1.9, 2.0, 2.1, 2.2, f(x):3.610, 3.452, 3.218, 2.904, 2.510$.

- Derive Simpson's $\frac{1}{3}$ rule for numerical integration.

(OR)

- Apply Weddle's rule to evaluate $\int_0^6 x^2 dx$ using 6 subintervals.

- Solve the system by Gauss-Jordan method:

$$2x+y+z=10, x+3y+2z=13, x+2y+3z=14.$$

(OR)

- Solve the linear system

$$3x+y+z=1, 2x+4y+z=2, x+y+5z=3 \text{ using matrix inversion method.}$$

[P.T.O]

15. Solve the system using Gauss-Seidel iteration:

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$$10x+y+z=12, x+10y+z=12, x+y+10z=12, \text{ up to two iterations starting with } (0,0,0).$$

(OR)

16. Factorize the tridiagonal matrix

$$A = \begin{bmatrix} 2 & -1 & 0 & 0 \\ -1 & 2 & -1 & 0 \\ 0 & -1 & 2 & -1 \\ 0 & 0 & -1 & 2 \end{bmatrix}$$

And solve $Ax = b$ with $b = (1,0,0,1)^T$.

17. Using Taylor's series method, compute $y(0.1)$ for $\frac{dy}{dx} = x+y$, $y(0) = 1$, with $h = 0.1$.

(OR)

18. Apply Runge-Kutta method of order 4 to approximate $y(0.2)$ given

$$\frac{dy}{dx} = x+y, y(0) = 1, h = 0.1.$$

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Sc Hons[Mathematics/Computers]

Max Marks : 60

Subject : Mathematics

Pass Mark : 24

Title of Paper : **Linear algebra & Problem Solving Sessions**

Duration : 3 Hrs

Paper Code : R23MAT501/R23MMAT501

Time : 2 pm - 5 pm

W.E.F : 2025-26

Date : 25-10-2025

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SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

1. If W_1 and W_2 are two subspaces of a vector space $V(F)$ then prove that $W_1 \cap W_2$ is also a subspace of $V(F)$.
2. Show that the set of vectors $(1, 3, 2), (1, -7, -8), (2, 1, -1)$ of $V_3(R)$ is Linearly dependent.
3. Prove that every finite dimensional vector space has atleast one basis.
4. Show that the vectors $(1,2,1), (2,1,0)$ and $(1, -1, 2)$ forms a basis of R^3 .
5. Let $U(F)$ and $V(F)$ be two vector spaces. Let $T : U(F) \rightarrow V(F)$ be a linear transformation then the range set $R(T)$ is a subspace of $V(F)$.
6. Find the eigen values of the matrix $A = \begin{bmatrix} 0 & 1 & 2 \\ 1 & 0 & -1 \\ 2 & -1 & 0 \end{bmatrix}$.
7. State and prove Parallelogram law.
8. State and prove Parseval's identity.

SECTION-B

II. Answer ALL the following questions.

5X8=40M

9. Prove that the necessary and sufficient condition for a non - empty subset W of a vector space $V(F)$ to be a subspace of V is $a, b \in F$ and $\alpha, \beta \in W \Rightarrow \alpha a + b\beta \in W$.

(OR)

10. If S and T are two subsets of a vector space $V(F)$, then show that

(i) $S \subseteq T \Rightarrow L(S) \subseteq L(T)$

(ii) $L(S \cup T) = L(S) + L(T)$

11. State and prove Basis Extension theorem.

(OR)

12. If W_1 and W_2 are two subspaces of a finite dimensional vector space $V(F)$, then prove that $\dim(W_1 + W_2) = \dim W_1 + \dim W_2 - \dim(W_1 \cap W_2)$.

[P.T.O]

13. State and prove Rank Nullity theorem.

(OR)

14. Find the null space, range, rank and nullity of the transformation $T: \mathbb{R}^2 \rightarrow \mathbb{R}^3$ defined by $T(x,y) = (x+y, x-y, y)$.

15. Find the eigen values and eigen vectors of the matrix $A = \begin{bmatrix} 2 & 1 & 0 \\ 0 & 2 & 1 \\ 0 & 0 & 2 \end{bmatrix}$.

(OR)

16. State and prove Cayley - Hamilton theorem.

17. State and prove Cauchy - Schwartz's inequality.

(OR)

18. Apply Gram - Schmidt process to the vectors $\{(2,1,3), (1,2,3), (1,1,1)\}$ to obtain orthonormal basis for $V_3(\mathbb{R})$ with standard inner product.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class	: III B.Sc(MPC/MPCS/MECS/MSCS/MCCS)	Max Marks	: 75
Subject	: Mathematics	Pass Mark	: 30
Title of Paper	: Numerical Methods	Duration	: 3Hrs
Paper Code	: R20MATA501	Time	: 2pm-5pm
W.E.F	: 2022-23	Date	: 23-10-2025

SECTION-A

I. Answer any FIVE of the following **5X5=25M**

1. Given $u_0 = 3, u_1 = 12, u_2 = 81, u_3 = 200, u_4 = 100, u_5 = 8$ find $\Delta^5 u_0$

2. Find the missing value in the following:

X	45	50	55	60
f(x)	3.0	?	2.0	0.225

3. Use stirling formula to evaluate f(25) from the data:

X	10	20	30	40
f(x)	1.1 ⁵	2	4.4	7.9

4. Construct a divided difference table from the following data

X	1	2	4	7	12
f(x)	22	30	82	106	216

5. Use the following table compute $\frac{dy}{dx}$ and $\frac{d^2y}{dx^2}$ at $x = 1$

X	1	2	3	4	5
Y	1	8	27	125	216

6. State and prove Trapezoidal rule.

7. Find the value of $\int_0^1 \frac{1}{1+x^3} dx$ by weddle's rule.

8. Using Taylor's series method solve the equations $\frac{dy}{dx} = x^2 + y^2$ for $x = 0.4$ given that $y = 0$ when $x = 0$

SECTION-B

II. Answer ALL of the following questions **5X10=50M**

9. Find the missing term of following data.

x	0	1	2	3	4
y	1	3	9	?	81

(OR)

10. State and prove Newton-Gregory formula for forward interpolation with equal intervals.

11. State and prove gauss forward formulae for equal intervals.

(OR)

12. Using Newton's divided difference formula to find f(9) from the data.

x	5	7	11	13	17
f(x)	150	392	1452	2366	5202

13. Using the following table find $\frac{dy}{dx}$ and $\frac{d^2y}{dx^2}$ at $x = 1.2$

x	1.0	1.2	1.4	1.6	1.8	2.0	2.2
f(x)	2.7183	3.3201	4.0552	4.9530	6.0496	7.3891	9.0250

(OR)

14. Find the maximum value of y by using the given data

X	0	1	2	3	4
Y	0	0.25	0	2.25	16

15. Evaluate $\int_0^7 \frac{1}{x} dx$ by using i) Simpson's $\frac{1}{3}$ rule, ii) Simpson's $\frac{3}{8}$ rule

(OR)

16. State and prove Weddle's rule.

17. Determine the value of y when $x = 0.1$ given that $y(0) = 1$ and $y' = x^2 + y$ by using modified Euler's method.

(OR)

18. Given differential equation $\frac{dy}{dx} = x - y$ with the conditions $y = 1$ when $x = 0$ use Picard's method to obtain y for $x = 0.2$ correct to 5 decimals

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Sc Hons(Statistics)

Max Marks : 60

Subject : Statistics

Pass Mark : 24

Title of Paper : **Optimization Techniques**

Duration : 3Hrs

Paper Code : R23STAT504

Time : 2 pm - 5 pm

W.E.F : 2025-26

Date : 12-11-2025

SECTION-A

I. Answer any FIVE of the following questions

5X4=20M

1. Explain initial basic feasible solution and Degeneracy basic feasible solution.
2. Explain the Least Cost method.
3. Explain mathematical formulation of an Assignment problem
4. Define sequence and how do you obtain a sequence.
5. Define Processing time, idle time and Total Elapsed time
6. What are the rules for determining a saddle point?
7. Explain payoff matrix
8. Define CPM and write its merits

SECTION-B

II. Answer ALL of the following questions

5X8=40M

9. Obtain initial basic feasible solution to the following Transportation problem using Vogel's Approximation Method

		Destinations				Availabilities
		D1	D2	D3	D4	
Origins	O1	6	4	1	5	14
	O2	8	9	2	7	16
	O3	4	3	6	9	5
Requirements		66	10	15	4	

(OR)

10. Obtain an optimum solution for the given TP using UV-Method

		Destinations				Availabilities
		D1	D2	D3	D4	
Origins	O1	6	4	1	5	14
	O2	8	9	2	7	16
	O3	4	3	6	9	5
Requirements		66	10	15	4	

11. Explain Hungarian method for solving an Assignment problem

(OR)

12. Solve the following Assignment Problem

	DesMachines			
	1	2	3	4
A	10	25	15	20
B	15	30	5	15
C	35	20	12	24
D	17	25	24	20

13. Explain Jhonson's algorithm for n jobs and three machines

(OR)

14. Find the sequence of jobs that minimizes the total elapsed time to complete the jobs for the given problem

Job	1	2	3	4	5	6
Time on MI	5	9	4	7	8	6
Time on MII	7	4	8	3	9	5

15. Determine optimal strategies and value of the game for the given game

		Player B	
		B1	B2
Player A	A1	2	5
	A2	7	3

(OR)

16. Solve the 2X3 game graphically

		Player B		
		B1	B2	B3
A1	6	2	7	
A2	1	0	3	

17. A Project has the following time schedule

Activity	1,2	1,3	1,4	2,6	3,5	3,7	4,5	5,9	5,8	7,8	8,9
Time in days	2	2	1	4	8	5	3	5	1	4	3

Construct network diagram. Obtain critical path and minimum rime to complete the project

(OR)

18. A project consists of eight activities, the time estimates are given below

Activity	Immediate Predecessor	Estimated time in days		
		Optimistic	Most Likely	Pessissimistic
A	-----	1	1	7
B	-----	1	4	7
C	-----	2	2	6
D	A	1	1	1
E	B	2	5	14
F	C	2	5	8
G	D,E	3	6	15
H	F,G	1	2	3

Calculate expected time and variance for each activity.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Sc Hons[Statistics]

Max Marks : 60

Subject : Statistics

Pass Mark : 24

Title of Paper : **Computational Statistics with R**

Duration : 3 Hrs

Paper Code : R23STAT502

Time : 2pm to 5pm

W.E.F : 2025-26

Date : 01/11/2025

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SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

1. What is the primary function of a computer's CPU?
2. Describe the use of Formulas and Functions in Excel for Data Analysis.
3. Explain how to create a simple graph in Excel.
4. How do you create a Scatter diagram in Excel?
5. Explain the concept of p-value and its interpretation in statistical analysis.
6. What are the features of R Programming Language?
7. Explain the concept of Vectors in R.
8. How do you create a matrix in R and perform operations on it?

SECTION-B

II. Answer ALL the following questions.

5X8=40M

9. What is an Operating System? Explain its features.

(OR)

10. Describe the types of software and their applications.
11. Describe the use of Formulas and Functions in Excel for Data Analysis.
12. Explain how to perform the matrix operations in Excel.
13. Describe the use of Excel for data analysis, including regression analysis.
14. Explain the use of forecast function in Excel for predicting future values.
15. Describe the features and advantages of R programming language.

(OR)

16. Explain control structures of R Programming.
17. Describe the use of R for data analysis, including data frames, matrices and Vectors.

(OR)

18. Explain the concept of exploratory data analysis and descriptive statistics in R.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)
V - SEMESTER END EXAMINATIONS

Class : III B.Sc Hons [Statistics & DS] Max Marks : 60
 Subject : Statistics Pass Mark : 24
 Title of Paper : **Applied Statistics** Duration : 3 Hrs
 Paper Code : R23STAT501/R23MSTAT501 Time : 2 pm to 5 pm
 W.E.F : 2025-26 Date : 30/10/2025

SECTION-A

I. Answer any FIVE of the following Questions **5X4=20M**

1. Define time series and its uses.
2. Explain mathematical model in time series.
3. Explain the procedure of simple average method for finding the seasonal components.
4. Explain the simple index numbers.
5. Explain cost of living index number.
6. Define vital statistics and its uses.
7. Define life table and write its assumptions.
8. Explain NRR.

SECTION-B

II. Answer ALL the following Questions **5X8=40M**

9. Explain components of time series.
- [OR]**
10. Fit a second degree parabola to the following data and estimate the value of sales. Draw the graph.

Year	2005	2006	2007	2008	2009
Sales (in thousands Rs.)	10	12	14	10	8

11. Explain ratio to trend method.
- [OR]**
12. Obtain seasonal indices to the following data by using link relative method.

	Quarter	I	II	III	IV
	Year				
	2002	75	60	54	59
	2003	86	65	63	80
	2004	90	72	66	85
	2005	100	78	72	93

13. Explain problems involved in the construction of index number.

[OR]

14. Show that the fisher index formula satisfies time reversal and factor reversal tests to the following data.

Commodity	Quantities		Prices (Rs.)in	
	2010	2013	2010	2013
A	40	42	17	19
B	30	35	14	17
C	10	17	19	21
D	20	14	13	16
E	16	12	21	31
F	15	10	50	60

15. Explain sources of vital statistics.

[OR]

16. Calculate the crude death rates and standardized death rates in both direct and indirect methods for the local population from the following data.

Age group	Standard populations	Deaths	Local population	Deaths
0-10	600	18	400	16
10-20	1000	5	1500	6
20-60	3000	24	2400	24
60-100	400	20	700	21

17. Explain measurement of fertility rates.

[OR]

18. Explain the reproduction rates.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)**V - SEMESTER END EXAMINATIONS**

Class : III BBA Hons(BA)

Max Marks : 60

Subject : Statistics

Pass Mark : 24

Title of Paper : **Statistical Quality Control and Six Sigma**

Duration : 3Hrs

Paper Code : R23STAT505

Time : 2pm - 5pm

W.E.F : 2025-26

Date : 30.10.2025

SECTION-A**I. Answer ALL of the following Questions****5X12=60M**

1. Define Assignable causes and chance causes of variation. Explain the importance of Statistical quality control in industry.

(OR)

2. The data shows the sample mean and range for 10 samples for size 5 each. Find the control limits for mean chart and range chart

Sample	1	2	3	4	5	6	7	8	9	10
Mean	21	26	23	18	19	15	14	20	16	10
Range	5	6	9	7	4	6	8	9	4	7

3. Explain about control chart for attributes

(OR)

4. The following is the data of defective of 10 samples of size 100 each. Construct np chart and give your comments.

Sample No.	1	2	3	4	5	6	7	8	9	10
No of Defectives	6	9	12	5	12	8	8	16	13	7

5. Explain single sampling plan and write its advantages and disadvantages

(OR)

6. Describe the importance of OC curve in evaluating the performance of a sampling plan including their interpretation and application

7. Discuss the basics of six sigma including its principles and objectives

(OR)

8. Discuss the importance of measuring and analysing process performance in six sigma.

9. Explain the elements of six sigma business score card. How do these elements help in aligning six sigma initiatives with strategic goals.

(OR)

10. Discuss the importance of purchasing and supplier management in six sigma implementation. How does supplier quality impact overall business performance?

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Sc Hons[Statistics]
Subject : Statistics
Title of Paper : **Operations Research**
Paper Code : R23STAT503
W.E.F : 2025-26

Max Marks : 60
Pass Mark : 24
Duration : 3 Hrs
Time : 2pm - 5pm
Date : 25-10-2025

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SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

1. Explain Mathematical Formulation of LPP.
2. Explain the advantages and limitations of Operations Research.
3. Explain an alternative solution.
4. Define Slack and Surplus Variables.
5. Explain degenerate solution in LPP.
6. Explain an Unbounded solution in LPP.
7. Define and explain Optimum basic feasible solution.
8. Explain general rules for converting any primal into its dual.

SECTION-B

II. Answer ALL the following questions.

5X8=40M

9. Explain the modeling in Operations Research.

(OR)

10. Discuss the applications of O.R.

11. Solve the following LPP by using Graphical method

$$\text{Max } Z = 3x_1 + 4x_2$$

Subject to the constraints

$$4x_1 + 2x_2 \leq 80$$

$$2x_1 + 5x_2 \leq 180 \text{ and } x_1, x_2 \geq 0.$$

(OR)

12. Explain the procedure for Graphical method.

13. Use Simplex method to solve the following LPP.

$$\text{Max } Z = 7x_1 + 5x_2$$

Subject to the constraints

$$x_1 + 2x_2 \leq 6$$

$$4x_1 + 3x_2 \leq 12 \text{ and } x_1, x_2 \geq 0$$

(OR)

14. Explain the procedure of Simplex Method.

15. Explain the procedure of Two - Phase Simplex method to solve the LPP.

(OR)

16. Solve the following LPP by using Big - M method.

$$\text{Max } Z = 3x_1 + 2x_2 + 3x_3$$

Subject to the constraints

$$2x_1 + x_2 + x_3 \leq 2$$

$$3x_1 + 4x_2 + 2x_3 \geq 8 \text{ and } x_1, x_2, x_3 \geq 0$$

17. Define and explain Primal and Dual problems.

(OR)

18. Solve the following LPP by using Dual Simplex Method.

$$\text{Max } Z = -3x_1 - x_2$$

Subject to the constraints

$$x_1 + x_2 \geq 1$$

$$2x_1 + 3x_2 \geq 2 \text{ and } x_1, x_2 \geq 0$$

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)
V - SEMESTER END EXAMINATIONS

Class : III B.Sc[MSCS/DS]
 Subject : Statistics
 Title of Paper : **Operations Research-I**
 Paper Code : R20DSSTAT501/R20STATA501
 W.E.F : 2022-23

Max Marks : 75
 Pass Mark : 30
 Duration : 3 Hrs
 Time : 2 pm - 5 pm
 Date : 12-11-2025

SECTION-A

I. Answer any FIVE of the following Questions.

5X5=25M

1. What are the various types of models?
2. Write the procedure for formulation of LPP.
3. Define Slack and Surplus variables.
4. Write the characteristics of canonical form.
5. What are the methods used to solve the artificial variable technique in LPP.
6. Define Duality.
7. Write the difference between primal and dual.
8. Define post optimum analysis.

SECTION-B

II. Answer ALL the following questions.

5X10=50M

9. Define OR, Aim and scope of OR.

(OR)

10. Solve the following LPP using graphical method.

$$\text{Max } Z = 45x_1 + 80x_2$$

$$\text{Subject to } 5x_1 + 20x_2 \leq 400$$

$$10x_1 + 15x_2 \leq 450$$

$$\text{and } x_1, x_2 \geq 0.$$

11. Write the procedure of Simplex algorithm.

(OR)

12. Solve the following LPP using Simplex method.

$$\text{Max } Z = 7x_1 + 5x_2$$

$$\text{Subject to } x_1 + 2x_2 \leq 6$$

$$4x_1 + 3x_2 \leq 12$$

$$\text{and } x_1, x_2 \geq 0.$$

13. Write the procedure of Two -Phase method.

(OR)

[P.T.O]

14. Solve the following LPP using Big M method.

$$\text{Max } Z = X_1 - X_2 + 3X_3$$

$$\text{Subject to } x_1 + x_2 \leq 20$$

$$x_1 + x_3 = 5$$

$$x_2 + x_3 \geq 10$$

$$\text{and } x_1, x_2, x_3 \geq 0.$$

15. Write the procedure for dual Simplex method.

(OR)

16. Use dual simplex method to solve the following LPP.

Minimize $Z = 3x_1 + x_2$ subject to the constraints

$$X_1 + X_2 \geq 1, \quad 2X_1 + 3X_2 \geq 2, \quad x_1, x_2 \geq 0.$$

17. Discuss the structural changes due to addition of a constrain in post optimal analysis.

(OR)

18. Given the LPP

Maximize $Z = 3X_1 + 5X_2$ subject to the constraints

$$X_1 \leq 4, \quad X_2 \leq 6, \quad 3X_1 + 2X_2 \leq 18 \quad \text{and } x_1, x_2 \geq 0$$

Discuss the effect on the optimality of the solution when the objective function is changed to $3X_1 + X_2$.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)**V - SEMESTER END EXAMINATIONS**

Class : III B.Sc (MPCS, MSCS)

Max Marks : 60

Subject : Mathematics

Pass Mark : 24

Title of Paper : **Numerical Methods**

Duration : 3Hrs

Paper Code : R20MATA501A

Time : 2pm-5pm

W.E.F : 2024-25

Date : 23-10-2025

SECTION-A**I. Answer any FIVE of the following Questions.****5X4=20M**1. Evaluate a) $\Delta^2(3e^x)$ b) $\Delta^2(ab^{cx})$

2. Find the missing term in the following data

X	0	1	2	3	4
Y	1	3	9	?	81

3. Apply Gauss forward formula to find u_9 if $u_0 = 14, u_4 = 24, u_8 = 32, u_{12} = 37.5, u_{16} = 40$ 4. Find the third divide difference of the function $f(x) = x^3 + x + 2$ for the arguments 1,3,6,115. Derive the derivative $\left(\frac{dy}{dx}\right)_{x=x_n}$ by using Newton's backward interpolation formula.6. Find $f(1.5)$ from the following table.

x	0.0	0.5	1.0	1.5	2
f(x)	0.3989	0.3521	0.2420	0.1245	0.0540

7. By Simpson rule evaluate $\int_1^2 \sqrt{1 - \frac{1}{x}} dx$ with 5 ordinates8. Solve $\frac{dy}{dx} = 1 + y^2, y(0) = 0$ using Picards method.**SECTION-B****II. Answer any FIVE of the following Questions.****5X8=40M**9. Given $u_0 + u_8 = 1.9243, u_1 + u_7 = 1.9590, u_2 + u_6 = 1.9823, u_3 + u_5 = 1.9956$. Find u_4

10. State and prove Newton's forward interpolation formula

11. Use Stirling formula to find y_{28} given $y_{20} = 49225, y_{25} = 48316, y_{30} = 47236, y_{35} = 45926, y_{40} = 44306$ 12. Using divided difference formula, find the value $f(8), f(15)$ from the following table

x	4	5	7	10	11	13
y	48	100	294	900	1210	2028

[P.T.O]

13. Using the given table, find $\frac{dy}{dx}$ and $\frac{d^2y}{dx^2}$ at $x= 1.2$

x	1.0	1.2	1.4	1.6	1.8	2.0	2.2
y	2.7183	3.3201	4.0552	4.9530	6.0496	7.3891	9.025

14. Derive the derivatives $\frac{dy}{dx}$ and $\frac{d^2y}{dx^2}$ at $x = x_0$ using Stirling's interpolation formula

15. State and prove general quadrature formula for equidistant ordinates Derive the derivatives

16. Use Euler's -Maclaurin's formula with $n = 4$ to estimate $\int_0^1 \frac{1}{1+x^2} dx$ and hence find the approximate value of π

17. If $\frac{dy}{dx} = x^2 + y, y(0) = 1$, then find $y(0.02), y(0.04)$ and $y(0.06)$ using Euler's modified method.

18. Solve the equation $y' = x + y$ with $y_0 = 1$ by Runge-Kutta from $x= 0$ to $x= 4$ with $h = 0.1$

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Sc [MPCS, MSCS]

Max Marks : 75

Subject : Mathematics

Pass Mark : 30

Title of Paper : **Mathematical Special Functions**

Duration : 3 Hrs

Paper Code : R20MATA502

Time : 2pm - 5pm

W.E.F : 2021-22

Date : 25-10-2025

SECTION-A

I. Answer any FIVE of the following Questions

5X5=25M

1. Evaluate $\int_0^1 \frac{dx}{\sqrt{(-\log x)}}$

2. Find $\int_0^2 x(8 - x^3)^{1/3} dx$

3. Prove that $L_n(0) = 1$

4. Prove that $H_n^1(x) = 2xH_n(x) - H_{n+1}(x)$

5. Prove that $H_n^{11} = 4n(n - 1)H_{n-2}$

6. Show that $P_0(x) = 1, P_1(x) = x, P_2(x) = \frac{3x^2 - 1}{2}$

7. Prove that $\frac{d}{dx} [x^n]_n(x) = x^n]_{n-1}(x)$

8. Prove that (i) $J_0^1 = -J_1$ (ii) $J_2 = J_0^{11} - \frac{1}{x} J_0^1$

SECTION-B

II. Answer ALL the following Questions

5X10=50M

9. State and Prove relation between the Beta and Gamma Functions

(OR)

10. Prove that the Chebyshev polynomials $T_n(x)$ and $U_n(x)$ are independent solutions of the Chebyshev differential equations

11. State and Prove generating function of $L_n(x)$.

(OR)

12. Prove that $x L \frac{1}{n}(x) = n L_n(x) - n L_{n-1}(x)$

13. State and Prove Rodrigue's formula of $H_n(x)$

(OR)

14. State and prove orthogonal property of $H_n(x)$

15. State and prove generating function of $P_n(x)$

(OR)

16. Prove that $(2n+1) x P_n = (n+1)P_{n+1} + n P_{n-1}$

17. Prove that $x J_n^1(x) = n J_n(x) - x J_{n+1}(x)$

(OR)

18. State and prove the generating function of $J_n(x)$

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)
V - SEMESTER END EXAMINATIONS

Class	: III B.Sc (MPCS, MSCS, MECS, MCCS)	Max Marks	: 60
Subject	: Mathematics	Pass Mark	: 24
Title of Paper	: Mathematical Special Functions	Duration	: 3 Hrs
Paper Code	: R20MATA502A	Time	: 2 pm - 5 pm
W.E.F	: 2024-25	Date	: 25-10-2025

SECTION-A

I. Answer any FIVE of the following Questions

5X4=20M

1. Show that $\int_0^1 \frac{dx}{\sqrt{-\log(x)}} = \sqrt{\pi}$
2. Find $L_0(x)$, $L_1(x)$, $L_2(x)$
3. Prove that $H_n' = 2n H_{n-1}(x)$
4. Prove that (i) $H_{2n}(0) = (-1)^n \frac{(2n)!}{n!}$ (ii) $H_{2n+1}(0) = 0$
5. Show that $\frac{d}{dx} [x^{-n} J_n(x)] = -x^{-n} J_{n+1}(x)$
6. Prove that (i) $J_0' = -J_1$ (ii) $J_2 = J_0'' - \frac{1}{x} J_0'$
7. Show that $P_0(x) = 1, P_1(x) = x, P_2(x) = \frac{3x^2-1}{2}$
8. Show that $\int_{-1}^1 (1-x^2) P_n'(x) \cdot P_m'(x) dx = 0$.

SECTION-B

II. Answer any FIVE of the following Questions

5X8=40M

9. State and prove the relation between beta and gamma functions.
10. Show that $\Gamma\left(-n + \frac{1}{2}\right) = \frac{(-1)^n 2^n \sqrt{\pi}}{1.3.5 \dots (2n-1)}$
11. State and prove the generating function for $L_n(x)$.
12. Prove that $(n+1)L_n(x) = (2n+1-x)L_n(x) - nL_{n-1}(x)$.
13. Prove that $e^{2tx-t^2} = \sum_{n=0}^{\infty} \frac{t^n}{n!} H_n(x)$.
14. State and prove Rodrigues formula for $H_n(x)$.
15. If n is a positive integer prove that $J_n(x)$ is the coefficient of z^n in the expansion of $e^{x(z-\frac{1}{z})/2}$ in the ascending and descending powers of z .
16. Prove that $x J_n'(x) = n J_n(x) - x J_{n+1}(x)$.
17. State and prove Rodrigues formula for $P_n(x)$.
18. Prove that $(2n+1)xP_n = (n+1)P_{n+1} + nP_{n-1}$.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V – SEMESTER END EXAMINATIONS

Class	: III BBA	Max Marks	: 60
Subject	: Commerce & Management	Pass Mark	: 24
Title of Paper	: Stress Management	Duration	: 3Hrs
Paper Code	: R20BBA501A	Time	: 2:00PM - 5:00PM
W.E.F	: 2024-25	Date	: 23/07/2025

SECTION-A

I. Answer any FIVE of the following Questions. 5X4=20M

1. Stress Vs Burnout
2. Nature of Stress
3. Frustration
4. Causes of Pressure
5. Stress and Motivation
6. Hypochondriacs
7. Yoga
8. Shame Attaching

SECTION-B

II. Answer ALL the following questions. 5X8=40M

9. Describe the various model of stress-strategies for coping stress.
10. Explain the Symptoms of Stress.
11. Define Frustration and describe the various causes for Frustration.
12. What is meant by Pressure? Discuss the General Pressure of our society.
13. Discuss various Leadership Styles in Stressful and Non-Stressful Situation.
14. Discuss about the different types of eating disorders.
15. Discuss about the various Stress Management Techniques.
16. Explain about the Behavioural Techniques for Stress Control.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Com (Comp & TP)

Max Marks : 75

Subject : Commerce

Pass Mark : 30

Title of Paper : **Management Accounting and Practice**

Duration : 3 Hrs

Paper Code : R20COMC501/R20COMT501

Time : 2 pm - 5 pm

W.E.F : 2021-22

Date : 23-10-2025

SECTION-A

I. Answer any FIVE of the following Questions

5X5=25M

1. Management accounting
2. Principles of Management accounting
3. Turnover ratio
4. Meaning of funds flow statement
5. Elements of budget
6. Flexible budgeting
7. Kinds of reports
8. Financial report

SECTION-B

II. Answer any five of the following Questions

5X10=50M

9. Explain the nature and scope of management accounting?
10. Explain tools of management accounting?
11. The following is the balance sheet of A Ltd company on 31st March 2023

Liabilities	Rs	Assets	Rs
Share capital	2,00,000	Land & Buildings	1,40,000
General reserve	40,000	Plant & Machinery	3,50,000
Profit and loss account	30,000	Stock in trade	2,00,000
12% debentures	4,20,000	Sundry debtors	1,00,000
Sundry Creditors	1,00,000	Bills receivable	10,000
Bills payable	50,000	Cash at bank	40,000
	8,40,000		8,40,000

Calculate

- i) current ratio ii) quick ratio iii) debt equity ratio iv) Proprietary ratio

12. The balance sheet of Sriman Ltd., as on 31.12.2017 and 31.12.2018 are given below. Prepare funds flow statement.

[P.T.O]

Liabilities	31.12.2017 RS.	31.12.2018 RS.	Assets	31.12.2017 RS.	31.12.2018 RS.
Share capital	60,000	65,000	Current assets	16,000	19,000
Profit & loss a/c	34,000	26,000	Goodwill	30,000	25,000
Current liabilities	12,000	3,000	Plant & Machinery	60,000	50,000
	1,06,000	94,000		1,06,000	94,000

Other information:

- a) Depreciation of Rs 20,000 worth of plant & Machinery was charged to profit and loss account.
- b) Dividends of Rs 12,000 were paid during the year.

13. The balance sheet of o Ltd., as on 31.12.2017 and 31.12.2018 are given below. Prepare cash flow statement.

Liabilities	31.12.2017 RS.	31.12.2018 RS.	Assets	31.12.2017 RS.	31.12.2018 RS.
Share capital	70,000	74,000	Cash	9,000	7,800
Profit & loss a/c	10,040	10,560	Goodwill	10,000	5,000
Debentures	12,000	6,000	Debtors	14,900	17,700
Reserve for bad debts	700	800	Stock	49,200	42,700
Trade creditors	10,360	11,840	Land & Buildings	20,000	30,000
	1,03,100	1,03,200		1,03,100	1,03,200

Other information:

- 1. Dividends paid Rs 3,500 during the year.
- 2. Land was purchased Rs 10,000
- 3. Amount provided for amortization of good will Rs 5000
- 4. Debentures paid off RS 6000

14. With the following data 60%(1200 units) activity prepare budget for 80%(1600 units) and 100% (2000 units) given the following data at 60%

- Direct material-40 per unit
- Direct wages-20 per unit
- Direct expenses-10 per unit
- Factory over heads- 30000(60% variable)
- Administrative overheads-12000(50% variable)

15. Write the strategies for writing effective reporting?

16. What is reporting? Explain requisites for a good report?

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)
V - SEMESTER END EXAMINATIONS

Class : III B.Com (Comp)	Max Marks : 60
Subject : Commerce	Pass Mark : 24
Title of Paper : Management Accounting and Practice	Duration : 3 Hrs
Paper Code : R20COMC501A	Time : 2pm - 5pm
W.E.F : 2024-25	Date : 23-10-2025

SECTION-A

I. Answer any FIVE of the following Questions **5X4=20M**

1. Limitations of Management accounting
2. Significance of Management accounting
3. Meaning of ratio analysis
4. Meaning of funds flow statement
5. Elements of budget
6. Advantages of ratio analysis
7. Need for management reporting
8. What is reports? Explains its meaning

SECTION-B

II. Answer ALL the following Questions **5X8=40M**

9. Explain the nature and scope of management accounting?

(OR)

10. Explain tools of management accounting?

11. The following is the balance sheet of S ltd company on 31st March 2024

Liabilities	Rs	Assets	Rs
Share capital	2,00,000	Land & buildings	1,40,000
General reserve	40,000	Plant & Machinery	3,50,000
Profit and loss account	30,000	Stock in trade	2,00,000
12% debentures	4,20,000	Sundry debtors	1,00,000
Sundry Creditors	1,00,000	Bills receivable	10,000
Bills payable	50,000	Cash at bank	40,000
	8,40,000		8,40,000

Calculate

- i) current ratio ii) quick ratio iii) debt equity ratio

[P.T.O]

12. The balance sheet of SAVITHRI Ltd., as on 31.12.2020 and 31.12.2021 are given below. Prepare funds flow statement.

Liabilities	31.12.2020 RS.	31.12.2021 RS.	Assets	31.12.2020 RS.	31.12.2021 RS.
Share capital	60,000	65,000	Current assets	16,000	19,000
Profit & loss a/c	34,000	26,000	Goodwill	30,000	25,000
Current liabilities	12,000	3,000	Plant & Machinery	60,000	50,000
	1,06,000	94,000		1,06,000	94,000

Other information:

- a) Depreciation of Rs 20,000 worth of plant & machinery was charged to profit and loss account.
- b) Dividends of Rs 12,000 were paid during the year.

13. The balance sheet of ALtd., as on 31.12.2018 and 31.12.2019 are given below. Prepare cash flow statement.

Liabilities	31.12.2018 RS.	31.12.2019 RS.	Assets	31.12.2017 RS.	31.12.2018 RS.
Share capital	70,000	74,000	Cash	9,000	7,800
Profit & loss a/c	10,040	10,560	Goodwill	10,000	5,000
Debentures	12,000	6,000	Debtors	14,900	17,700
Reserve for bad debts	700	800	Stock	49,200	42,700
Trade creditors	10,360	11,840	Land & buildings	20,000	30,000
	1,03,100	103,200		1,03,100	1,03,200

14. At 60% activity (1200 units) prepare flexible budget for production at 80% (1600 units) and 100% (2000 units) given the following data

- Direct material-40 per unit
- Direct wages-20 per unit
- Direct expenses-10 per unit
- Factory overheads- 30000(60% variable)
- Administrative overheads-12000(50% variable)

15. What is reporting? Explain requisites for a good report?

16. Distinguish between financial and management reporting?

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V – SEMESTER END EXAMINATIONS

Class : III.B.Com(TP & Computers)
Subject : Commerce & Management
Title of Paper : **Cost Control Techniques**
Paper Code : R20COMT502/R20COMC502
W.E.F : 2021 -2022

Max Marks : 75
Pass Mark : 25
Duration : 3Hrs
Time : 2 pm - 5 pm
Date : 25-10-2025

SECTION-A

I. Answer any FIVE of the following Questions

5X5=25M

1. What is cost control?
2. What is cost reduction?
3. Characteristics of ABC
4. What is marginal costing?
5. Make or buy decision.
6. Give a note on variance analysis.
7. Short note on kaizen costing.
8. Meaning of learning curve analysis.

SECTION-B

II. Answer any FIVE the following Questions

5X10=50M

9. Explain various types of cost control techniques.
10. What is cost audit? Explain various types of cost audit.
11. Write about various advantages of implementing ABC.
12. Describe the categories of ABC and allocation of overheads under ABC.
13. Selling price per unit Rs 15 : variable cost per unit- Rs.10: Fixed cost Rs.40,000.
Find out ; 1.BEP sales 2.Profit when sales would be Rs.3,00,000 3.Margin of safety when sales are Rs. 3,50,000.
14. The sales and profit during two years were as follows.

Year	Sales (Rs)	profit
2021	1,50,000	20,000
2022	1,70,000	25,000

You are Required to calculate

- 1.P/v ratio
2. Fixed cost
- 3.BEP
- 4.The sales required to earn a profit Rs.40,000

15. Explain the advantages and limitations of standard costing.

16. From the following particular calculate

- (1) Material cost variance
- (2) Material price variance
- (3) Material usage variance

Material	Standard units	Standard price	Actual units	Actual price
A	1010	1.00	1080	1.20
B	410	1.50	380	1.80
C	350	2.00	380	1.90

17. What are the objectives of kaizen costing? Explain its principles.

18. explain the advantages and limitations of kaizen costing.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V – SEMESTER END EXAMINATIONS

Class	: III BBA	Max Marks	: 60
Subject	: Commerce & Management	Pass Mark	: 24
Title of Paper	: Performance Management	Duration	: 3Hrs
Paper Code	: R20BBA502A	Time	: 2pm - 5pm
W.E.F	: 2023-24	Date	: 25-10-2023

SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

1. Significance of Performance Management
2. Performance Mentoring
3. Performance Planning
4. Merit Rating
5. Employee Assessment System
6. Types of Appraisal Interviews
7. HR Scorecard
8. Performance Diagnosis

SECTION-B

II. Answer ^{any FIVE} the following questions.

5X8=40M

9. Discuss about the advantages of Performance Management.
10. Describe the various steps involved in Performance Management process.
11. What are the differences between Performance Appraisal and Performance Management?
12. Explain the process of Performance Appraisal.
13. Explain the Role of HR Professionals in Performance Management.
14. What are the barriers to effective appraisal? Describe the process for overcome these barriers to appraisal system.
15. Explain the pros and cons of 360° Performance Appraisal.
16. What are the factors influencing Performance? Describe the various strategies for improving performance.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Com[Computers]
Subject : Commerce and Management
Title of Paper : **Sales Promotion & Practice**
Paper Code : R20COMC504A
W.E.F : 2024-25

Max Marks : 60
Pass Mark : 24
Duration : 3 Hrs
Time : 2 pm - 5 pm
Date : 30.10.2025

SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

1. Sales Planning
2. Sale Executive Functions.
3. Surrogate Selling.
4. Promotional Strategy.
5. Sale Contests, Coupons, Discounts, Exhibition
6. Sales budget, Sales Quotas.
7. Note on Induction & Compensation.
8. Selection Process.

SECTION-B

II. Answer any FIVE of the following questions.

5X8=40M

9. Explain the Nature and Scope of Sales Organization.
10. Explain different types of Sales Promotion.
11. Explain various theories of Personal Selling.
12. Explain various tools of Sales Promotion
13. Write a note on 'Point of Sale and Showroom Design'
14. Discuss in brief the qualities of 'Sales Manager'.
15. Write about major steps involved in Sales Force Management.
16. Discuss various methods of evaluating performance of sales Personnel

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V – SEMESTER END EXAMINATIONS

Class : III B.Com (Comp & TP)
Subject : Commerce
Title of Paper : **Sales Promotion and Practice**
Paper Code : R20COMC504/R20COMT504
W.E.F : 2022-23

Max Marks : 75
Pass Mark : 30
Duration : 3 Hrs
Time : 2pm - 5pm
Date : 30.10.2023

SECTION-A

I. Answer any FIVE of the following Questions

5X5=25M

1. Sales planning
2. Cross promotion
3. Surrogate selling
4. Sales conventions & sales conferences
5. Sales budget
6. Sales contests
7. Compensation
8. Selection Process

SECTION-B

II. Answer any FIVE of the following Questions

5X10=50M

9. Discuss different types of Sales Organisation
10. Explain sales promotion methods in different stages of product life cycle
11. Explain various theories of personal selling
12. Explain various tools of sales Promotion.
13. Discuss in brief the “Qualities of Sales Manager”
14. Define selling sequence. Explain types of selling Sequence.
15. Discuss about traditional and Modern sources of recruitment of sales personnel.
16. Explain about Major steps involved in Sales force Management

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V – SEMESTER END EXAMINATIONS

Class : III BBA

Max Marks : 60

Subject : Commerce

Pass Mark : 24

Title of Paper : **Sales Promotion and Practice**

Duration : 3 Hrs

Paper Code : R20BBA503A

Time : 2pm - 5pm

W.E.F : 2024-25

Date : 30.10.2025

SECTION-A

I. Answer any FIVE of the following Questions

5X4=20M

1. Limitations of Sales Promotions
2. Sales Planning
3. Sales Executive Functions
4. Sales Conventions & Sales Conferences
5. Sales Budget
6. Coupons & Discounts
7. Steps in the Selection Process of Sales force
8. Sales force' Induction & Compensation

SECTION-B

II. Answer any FIVE of the following Questions

5X8=40M

9. Explain the steps involved in setting up a sales organization.
10. Explain the Nature and Scope of Sales Organisation
11. Explain the different Surrogate Selling Strategies.
12. Explain the different Trade Oriented Sales Promotions.
13. Explain the various steps involved in designing a Sales Promotion Campaign.
14. Explain in brief about Prospecting, Pre-Approach and Approach in Salesmanship.
15. Write a note on 'Point of Sale and Showroom Design'.
16. Write a note on 'Designing of Events for enhancing Sales Promotion'.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V – SEMESTER END EXAMINATIONS

Class : III BBA

Max Marks : 60

Subject : Commerce

Pass Mark : 24

Title of Paper : **Foreign Exchange Management**

Duration : 3 Hrs

Paper Code : R20BBA505A

Time : 2 pm - 5 pm

W.E.F : 2024-25

Date : 01-11-2025

SECTION-A

I. Answer any FIVE of the following Questions

5X4=20M

1. Forex Management
2. What are Euro bonds and why are they used in international financing.
3. Money Market
4. Who are the key participants in the Foreign Exchange Market?
5. Objectives of Foreign Exchange Rate.
6. How are Cross Exchange Rates determined in the foreign exchange market?
7. Commercial Invoice
8. How do options help in hedging Foreign Exchange Risk?

SECTION-B

II. Answer any FIVE of the following Questions

5X8=40M

9. Explain the scope and significance of Forex Management.
10. Analyse the relationship between Forex Management and Financial Management
11. Explain the concept of arbitrage opportunities in International Financial Markets
12. Discuss the Instruments in Capital Market.
13. What are the Functions and Characteristics of Foreign Exchange Market?
14. Describe the mechanics of making Foreign payments.
15. What are the various types of Foreign Exchange Rates?
16. Analyse payment terms and documents used in International Trade.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III BBA
Subject : Commerce
Title of Paper : **E-Payment System**
Paper Code : R20BBA506A
W.E.F : 2024-25

Max Marks : 60
Pass Mark : 24
Duration : 3 Hrs
Time : 2pm - 5pm
Date : 04-11-2025

SECTION-A

I. Answer any FIVE of the following Questions

5X4=20M

1. Bitcoin
2. E-Cash
3. ATM Networks
4. CHIPS and SWIFT
5. E- Payment Security
6. Obopay
7. Electronic Statement Delivery
8. Invoice paper elimination

SECTION-B

II. Answer ALL the following Questions

5X8=40M

9. Explain the foundations of e-Cash and Issues.
10. Describe Electronic payment modes.
11. Explain the concept of Automated Clearing and Settlement.
12. Write a note on Digital Identity documents and remote authentication.
13. Write about cryptographic methods.
14. Explain the concept of wireless payments.
15. Briefly discuss Biller service providers and customer service providers.
16. Write a note on Electronic Invoice and payment system.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)
V - SEMESTER END EXAMINATIONS

Class : III BBA
Subject : Commerce
Title of Paper : **E-Business**
Paper Code : R20BBA504A
W.E.F : 2024-25

Max Marks : 60
Pass Mark : 24
Duration : 3 Hrs
Time : 2pm - 5pm
Date : 12-11-2025

SECTION-A

I. Answer any FIVE of the following Questions

5X4=20M

1. Differences between e-commerce and e-business
2. B2B and B2A
3. Features of internet
4. Importance of website design
5. Need for cyber law
6. Banking Services in E-Commerce
7. Payment Utilities
8. Amazon Pay & Mobikwick

SECTION-B

II. Answer any FIVE of the following Questions

5X8=40M

9. Explain the advantages and limitations of e- Commerce
10. Explain the framework of. E-Commerce
11. What is website designing? Explain its structure
12. Explain about security environment preliminaries and precautions in e commerce
13. What are the components of Digital signature and explain its importance
14. Explain about various types of e- retailing services
15. Describe about various unstructured supplementary services
16. Write a short note on
i) Internet banking ii) Contactless payments iii) Debit Cards

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KAKARAPARTI BHAVANARAYAN . COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

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Class	: III BCA	Max Marks	: 60
Subject	: Computers	Pass Mark	: 24
Title of Paper	: Machine Learning Using Python	Duration	: 3Hrs
Paper Code	: R20BCA501A	Time	: 2 pm - 5 pm
W.E.F	: 2024-25	Date	: 23-10-2025

SECTION-A

I. Answer any FIVE of the following questions

5X4=20M

1. Difference between Human Learning and Machine Learning.
2. Explain about Applications of ML.
3. How to select and train a model for Supervised Learning?
4. Write a short note on Linear Regression.
5. Explain Maximum Likelihood Estimation.
6. What is Decision Tree? Explain.
7. Difference between Unsupervised and Supervised Learning.
8. Write about Association Rule mining.

Section-B

II. Answer ALL of the following

5X8=40M

9. Define Machine Learning? Explain various types of Machine Learning Algorithms.

(OR)

10. Explain about types of Data in Machine Learning.
11. Explain about Evaluating Performance of a Model.

(OR)

12. Explain about Feature Transformation and Feature Subset Selection.
13. Define Regression. Explain about Logistic Regression.

(OR)

14. Write about Bayes' Theorem and Concept Learning?
15. Explain about K-Nearest Neighbour Algorithm.

(OR)

16. Define SVM. Explain about Support Vector Machines.
17. Write about Density-based methods.

(OR)

18. Explain about Apriori algorithm with an example.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III BCA

Max Marks : 60

Subject : Computer Science

Pass Mark : 24

Title of Paper : **Full Stack Develepoment Using Java**

Duration : 3 Hrs

Paper Code : R20BCA506A

Time : 2pm - 5pm

W.E.F : 2024-25

Date : 12-11-2025

SECTION-A

I. Answer any FIVE of the following Questions

5X4=20M

1. Explain about Junit ^{botron} with an example program.
2. Explain the differences between servlets and JSP.
3. Explain about JSP implicit objects.
4. Explain about Hibernate session.
5. Explain about HQL.
6. What are the elements of Hibernate Architecture?
7. Explain about Dependency Injection in spring.
8. Explain about NO SQL data base.

SECTION-B

II. Answer ALL the following Questions

5X8=40M

9. Explain about Bootstrap pagination in detail with an example program.

(OR)

10. Explain Develop a registration form that includes all input types using Bootstrap.

11. Explain about scripting elements of JSP with proper syntaxes.

(OR)

12. Explain servlet life cycle methods with an example program.

13. Explain the architecture of Hibernate.

(OR)

14. Develop a Hibernate application that includes create, update, Retrieve and Delete.

15. What are the steps involved in creating a spring application with an example.

(OR)

16. Explain singleton and ^{prototype} bean scope in spring.

17. Describe the steps involved in creating a collection in Mongo DB.

(OR)

18. What are the potential risks associated with dropping a database with drop database method and how can these risks be mitigated.

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**KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)
V - SEMESTER END EXAMINATIONS**

Class	: III BCA	Max Marks	: 60
Subject	: Computer Applications	Pass Mark	: 24
Title of Paper	: Digital Imaging	Duration	: 3 Hrs
Paper Code	: R20BCA502A	Time	: 2 pm - 5 pm
W.E.F	: 2024-25	Date	: 25-10-2025

SECTION-A

I. Answer any FIVE of the following Questions **5X4=20M**

1. Explain about Audio Formats
2. Explain about Image formats
3. What is GIMP
4. Explain about Brightening and Darkening
5. Explain tour of Layers Dialog
6. Explain Circles and other shapes
7. Explain Dodge and Burn tool
8. Sharping using Convolve tool

SECTION-B

II. Answer ALL the following Questions **5X8=40M**

9. Explain about Image formats and Explain about Image Scanner
(OR)
10. Explain the types of Video editing
11. What is GIMP
(OR)
12. What is Layers Dialog
13. Explain about linking layers together
(OR)
14. Explain about rotating, sharpening , cropping the photos
15. Explain about filling with patterns and gradients and importing brushes
(OR)
16. Explain Circles and other shapes
17. Explain filters
(OR)
18. Explain about erasing and touching up

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III BCA
Subject : Computer Applications
Title of Paper : **Selenium**
Paper Code : R20BCA504A
W.E.F : 2024-25

Max Marks : 60
Pass Mark : 24
Duration : 3Hrs
Time : 2pm - 5pm
Date : 30.10.2025

SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

1. What is Automation testing? Explain advantages of selenium?
2. What is Selenium? What are the limitation of selenium?
3. Explain the differences between selenium and other tools?
4. Explain about Radio buttons in selenium with example
5. Explain how to handle Drop down list in selenium?
6. What are the limitations of selenium IDE?
7. What are validation commands in selenium?
8. Explain alert message in selenium?

SECTION-B

II. Answer ALL the following questions.

5X8=40M

9. Explain briefly about Automation Testing LifeCycle?

(OR)

10. Explain different web applications for Automation Testing?

11. Explain features of selenium?

(OR)

12. Explain different components of selenium?

13. Explain how to generate the scripts using different webelements?

(OR)

14. Explain different commands in selenium IDE?

15. Explain how to handle drag and drop in selenium with examples?

(OR)

16. Explain how to handle file uploading using sikuli/Auto IT with examples?

17. Explain how to handle mouse hover and keyboard events in action class?

(OR)

18. Explain briefly about IFrames with examples?

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class	: III B.Sc(MPCS, MSCS)	Max Marks	: 60
Subject	: Computer Science	Pass Mark	: 24
Title of Paper	: Web Interface Designing Technologies	Duration	: 3Hrs
Paper Code	: R20CSCA501A	Time	: 2 pm - 5 pm
W.E.F	: 2024-25	Date	: 01-11-2025

SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

1. Explain about heading tags and paragraph tag in HTML.
2. Explain about pseudo class in CSS.
3. Explain about text formatting using CSS.
4. Explain Date object in Java Script.
5. What are functions? How to create and call functions?
6. Explain about admin panel in word press.
7. How to create new blog post in word press.
8. Explain about user roles and profiles in word press.

SECTION-B

II. Answer ALL the following questions.

5X8=40M

9. Explain about frames in details with example programs.

(OR)

10. Explain about the table related tags and attributes with example program.

11. Explain briefly about forms with example program?

(OR)

12. What is CSS? Explain its types with examples

13. Explain about exception handling with example.

(OR)

14. Explain about different operators in java script.

15. Explain about working with widgets and menus.

(OR)

16. Explain the features word press.

17. Explain about themes in word press

(OR)

18. Explain in details about extending word press with plugins.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V – SEMESTER END EXAMINATIONS

Class	: III B.Com (Comp)	Max Marks	: 75
Subject	: Computer Science	Pass Mark	: 30
Title of Paper	: Mobile Application Development	Duration	: 3 Hrs
Paper Code	: R20BCOMP501	Time	: 2pm - 5pm
W.E.F	: 2022-2023	Date	: 01-11-2023

SECTION-A

I. Answer any FIVE of the following Questions

5X5=25M

1. Explain tools required for developing an application?
2. Explain about Android Virtual Device?
3. Write a short note on JDK?
4. Write about list view in Android?
5. Explain about image button in Android?
6. Explain about check box in Android?
7. Explain working with file in Android?
8. Explain the types of Android services?

SECTION-B

II. Answer ALL the following Questions

5X10=50M

9. Explain the features of Android?

(OR)

10. Explain Tools and software required for developing an application?

11. Explain in detail about Android activities?

(OR)

12. Explain about the steps involved in installing Android studio?

13. Explain Time and Date Picker with a suitable example?

(OR)

14. Explain Toast in Android with an example?

15. Explain about Android Security Model?

(OR)

16. Explain Android system Architecture?

17. Explain about MIT App Inventor?

(OR)

18. Explain in detail about different types of dialogs in Android?

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class	: III BCA	Max Marks	: 60
Subject	: Computers	Pass Mark	: 24
Title of Paper	: Mobile Application Development	Duration	: 3Hrs
Paper Code	: R20BCA505A	Time	: 2pm - 5pm
W.E.F	: 2024-25	Date	: 01-11-2025

SECTION-A

I. Answer any FIVE of the following questions:

5X4=20M

1. What is Android? Briefly write about Open headset alliance.
2. What is Android Virtual Device?
3. Write short notes on Android SDK?
4. Explain about Text View in Android.
5. Write about Radio Button in Android.
6. Briefly explain Check Box in Android.
7. Write the types of Android Services?
8. Write short note on Alarm Clock Application.

SECTION-B

II. Answer ALL of the following questions:

5X8=40M

9. Explain about the term of ecosystem in detail.
(OR)
10. Explain the features of Android, in detail.
11. What are the steps to install and configure Android SDK? Explain.
(OR)
12. What are Android development tools? Explain.
13. What are the different layouts? Explain with examples in detail.
(OR)
14. Explain Grid View in Android with suitable example.
15. Explain about Android System Architecture.
(OR)
16. Explain about the Android platform services.
17. How many types of dialogs are there in Android? Explain in detail.
(OR)
18. Explain working with Audio & Video in Android.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

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Class : III B.Com(Computers)

Max Marks : 75

Subject : Computer Applications

Pass Mark : 30

Title of Paper : **Cyber Security & Malware Analysis**

Duration : 3Hrs

Paper Code : R20BCOMP502

Time : 2pm - 5pm

W.E.F : 2022-23

Date : 04 - 11 - 2025

SECTION-A

I. Answer Any FIVE of the following.

5X5=25M

1. Explain how to create a LAN.
2. Write the Features of NIST Cyber Security Framework.
3. Explain the components of Cyber Security Framework.
4. Explain OWASP.
5. Explain Security Misconfiguration.
6. Write a short note on VM Ware.
7. Write the importance of Antivirus.
8. Explain Cyber Crimes and Punishments.

SECTION-B

II. Answer ALL of the following.

5X10=50M

9. Explain about TCP/IP Protocol Suite.

(OR)

10. Explain different layers OSI reference Model.

11. Explain about Cyber Security Framework Tiers.

(OR)

12. Explain the Functions of NIST Cyber Security Framework.

13. Explain any two Vulnerabilities of OWASP.

(OR)

14. Explain about Web Application Firewall.

15. Explain different types of Malware.

(OR)

16. Explain about Malware Analysis.

17. Explain the Challenges to Indian Law and Cyber Crime Scenario in India.

(OR)

18. What is Cyber Security? Explain the importance of Cyber Security.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class	: III B.Com (Computers)	Max Marks	: 60
Subject	: Computer Application	Pass Mark	: 24
Title of Paper	: Cyber Security & Malware Analysis	Duration	: 3Hrs
Paper Code	: R20BCOMP502A	Time	: 2pm - 5pm
W.E.F	: 2024-25	Date	: 04-11-2025

SECTION-A

I. Answer any FIVE of the following Questions. 5X4=20M

1. Write difference between OSI and TCP\IP.
2. Write a short note on firewall.
3. What is NIST cyber security framework?
4. What is OWASP?
5. Explain about broken access control?
6. Write about the advantages of antivirus.
7. Explain about cyber security?
8. Explain about cybercrime against individuals?

SECTION-B

II. Answer ALL the following questions. 5X8=40M

9. What is Network? Explain different types of networks?

(OR)
10. Explain about OSI reference model?
11. Explain about Features of NIST cyber security framework ?

(OR)
12. Explain about cyber security framework tiers?
13. Explain about security Misconfiguration and cross site scripting?

(OR)
14. Explain about web application firewall?
15. Explain about VM ware?

(OR)
16. Explain about Ransomware and Rootkits?
17. Explain about types of cybercrimes?

(OR)
18. Explain about importance of cyber laws?

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)
V – SEMESTER END EXAMINATIONS

Class : III B.Sc (MSCS, MPCS)
Subject : Computer Science
Title of Paper : **Web Applications Development Using PHP & My SQL**
Paper Code : R20CSCA502A
W.E.F : 2024-25

Max Marks : 60
Pass Mark : 24
Duration : 3 Hrs
Time : 2pm-5pm
Date : 04-11-2025

SECTION-A

I. Answer any FIVE of the following Questions

5X4=20M

1. Explain about PHP variables.
2. Explain the Object Oriented Concept.
3. How to combine HTML and PHP code on a single page.
4. How to Redirecting the user to a new page.
5. Write about various functions available in PHP for creating and deleting files.
6. Explain about writing to a file with fwrite() or fputs().
7. How to connect to MYSQL in PHP.
8. Differentiate MYSQL and MySQLi.

SECTION-B

II. Answer ALL the following Questions

5X8=40M

9. Explain various Conditional Statements in PHP.

(OR)

10. Explain about PHP function and their types with examples.

11. Explain String Manipulation in PHP.

(OR)

12. What is an Array? Explain some Array Related Functions with example programs.

13. How to create Forms in PHP with example.

(OR)

14. What is Session? How to Handle Sessions in PHP.

15. Explain the process of Validating Files.

(OR)

16. Write the PHP code for Image Creation from User Input.

17. Explain working with MYSQL data in PHP.

(OR)

18. Write the steps for record addition in your application Online Address Book.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Voc (WT & SD)
Subject : Computer Applications
Title of Paper : **Database Management Systems**
Paper Code : R20WT503A
W.E.F : 2024-25

Max Marks : 60
Pass Mark : 24
Duration : 3Hrs
Time : 2 pm - 5 pm
Date : 12-11-2025

SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

1. What is the difference between Data and Information?
2. Write about IS A relationship and attribute Inheritance?
3. Write about the advantages of ER model?
4. What is Relational Data Model?
5. Explain Domain Relational Calculus?
6. Explain about Commit and Rollback commands?
7. Explain about different set operations?
8. Explain data types in PL/SQL?

SECTION-B

II. Answer ALL the following questions.

5X8=40M

9. Explain about different types of Data models?

(OR)

10. Briefly explain about Database Architecture.
11. What is entity? Explain different types of entities.

(OR)

12. What is attribute? Explain about classification of attribute.
13. Write about the advantages and disadvantages of Relational algebra?

(OR)

14. Explain EF codd's rules.
15. Explain about DDL commands.

(OR)

16. What is view? Explain about view.
17. Explain about Looping control statements in PL/SQL

(OR)

18. Briefly explain about triggers in PL/SQL

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V – SEMESTER END EXAMINATIONS

Class : III BCA

Max Marks: 60

Subject : Computer Applications

Pass Mark : 24

Title of Paper : **Cyber Security & Malware Analysis**

Duration : 3 Hrs

Paper Code : R20BCA503A

Time : 2 pm - 5 pm

W.E.F : 2024-25

Date : 04-11-2025

SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

1. Explain about LAN (Local area network).
2. Explain about Features of networks.
3. Explain about cyber security.
4. Explain about OWASP Juice Shop.
5. Explain about Web Application Firewall.
6. Explain about Antivirus.
7. Explain about Key Loggers.
8. Explain about cybercrime against individuals.

SECTION-B

II. Answer ALL the following questions.

5X8=40M

9. Explain About types of networks.

(OR)

10. Explain about TCP/IP Protocol suite.

11. Explain about cyber security framework tiers.

(OR)

12. Explain NIST Model and its functions.

13. Explain Broken Access Control and XML External Entities.

(OR)

14. Explain web application firewall.

15. Explain about VMWARE and how to use sandbox.

(OR)

16. Explain about Process explorer and process monitor.

17. Explain about cybercrime and punishments in Indian IT act2000.

(OR)

18. Explain about types of cyber crimes.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III Degree(All Groups)

Max Marks : 50

Subject : Chemistry

Pass Mark : 20

Title of Paper : **Environmental Education**

Duration : 2Hrs

Paper Code : R23ENV501

Time : 2 pm - 4 pm

W.E.F : 2025-26

Date : 23-10-2025

SECTION-A

I. Answer any FOUR of the following questions

4X5=20M

1. Discuss the scope and importance of environmental education.
2. Explain the concept of "Man as a part of nature" with suitable examples.
3. Explain Deforestation and its effects.
4. Discuss about Global Warming.
5. Write a note on Renewable energy resources.
6. Discuss briefly about Bishnois of Rajasthan movement and Chipko movement?

SECTION-B

II. Answer any THREE of the following questions

3X10=30M

7. Write brief account on natural resources like water, land forest resources.
8. Discuss the impact of air, water, soil, noise pollution on environmental quality.
9. Discuss the impact of rapid population growth on natural resources.
10. Explain Environmental Protection Act.
11. *Explain* In-situ and Ex-situ conservation methods?

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KAKARAPARTI BHAVANARAYAN COLLEGE (AUTONOMOUS)	
V - SEMESTER END EXAMINATIONS	
Class : III B.Sc Hons(Comp Science/Physics)	Max Marks: 60
Subject : Physics	Pass Mark : 24
Title of Paper : Applications of Electricity and Electronics	Duration : 3Hrs
Paper Code : R23PHY501/R23MPHY501	Time : 2pm - 5pm
W.E.F : 2025-26	Date : 25-10-2025

SECTION-A

I. Answer any FIVE of the following questions.

5X4=20M

1. What is the colour coding used in resistors?
2. Write a short note on the use of choke in a fan.
3. Describe the series and parallel configuration of batteries.
4. What are the power sources? Write about AC and DC power sources.
5. Distinguish between DC and AC generators.
6. Write the applications of motor in water pump and fan.
7. What are the types of modulation?
8. Write about LCR series circuit.

SECTION-B

II. Answer ALL of the following questions

5X8=40M

9. What is a resistor? Describe different types of resistors. How a resistor is used as a fuse element?
- (OR)**
10. Define the capacitance of a capacitor. Explain its principle. Derive the equation for the energy stored in the capacitor.
 11. Give the construction of Lead -acid batteries. Explain its charging and discharging process.
- (OR)**
12. State and explain Norton's theorem.
 13. Explain the principle and construction of alternating current (AC) generator.
- (OR)**
14. What is the basic principle of operation of a transformer and derive its E.M.F equation?
 15. Discuss the frequency modulated (FM) receiver.
- (OR)**
16. Explain Amplitude modulation and modulation index
 17. Explain the construction and working principle of DC motor. Give the calculations of power, voltage and current in DC motor.
- (OR)**
18. What is a D.C. regulated power supply? Describe the construction of 5 volt regulated power supply.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Sc Hons [Physics]

Max Marks : 60

Subject : Physics

Pass Mark : 24

Title of Paper : **Optical Instruments and Optometry**

Duration : 3 Hrs

Paper Code : R23PHY503

Time : 2pm - 5pm

W.E.F : 2025-26

Date : 30.10.2025

(3)

SECTION-A

I. Answer any FIVE of the following Questions

5X4=20M

1. Explain the operating principle of Phase Contrast Microscope.
2. Write the differences between astronomical and terrestrial telescope.
3. Explain the working principle and applications of Binoculars.
4. Write a short note on X-ray microscope.
5. Give various applications of optical Microscope.
6. Explain the optical defect Hypermetropia.
7. Mention the guidelines for the preparation of a standardized eye chart.
8. Explain the working of simple Phoropter.

SECTION-B

II. Answer ALL the following Questions

5X8=40M

9. Explain the Construction, Magnifying power and normal adjustment of a Compound microscope.

[OR]

10. Explain the Construction, working and uses of a Travelling microscope.

11. Explain the Construction, working and Magnifying power of a Refracting Telescope.

[OR]

12. Explain the working principle and uses of an Astronomical telescope.

13. Explain about a Transmission Electron Microscope and give its applications.

[OR]

14. Explain about Infrared and Ultraviolet telescopes and give their applications.

15. Explain the Removal of defects in vision using ophthalmic lenses.

[OR]

16. Explain the working principle of Contact lenses. Mention various types of Contact lenses

17. Describe the working principles of an ophthalmoscope and Keratometer.

[OR]

18. Explain the various principles of computer-based eye testing.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V – SEMESTER END EXAMINATIONS



Class : III B.Sc Hons(Physics)

Max Marks : 60

Subject : Physics

Pass Mark : 24

Title of Paper : **Solar Energy and It's Applications**

Duration : 3Hrs

Paper Code : R23PHY504

Time : 2 pm - 5 pm

W.E.F : 2025-26

Date : 01-11-2025

SECTION-A

I. Answer any FIVE out of the following

5X4=20M

1. Explain the spectral distribution of solar Radiation.
2. Distinguish between direct, diffuse and total solar radiation.
3. Write a short note on construction and working of solar cookers and mention its uses.
4. Explain the terms involved in Energy Balance equation.
5. Explain briefly different types of semiconductor interfaces.
6. What is the role of Bypass and blocking diodes in PV modules?
7. What is a super capacitor? Explain its role in energy storage.
8. Write the difference between primary and secondary batteries.

SECTION-B

II. Answer ALL of the following questions

5X8=40M

9. Define solar constant and explain the principle and working of a Pyrheliometer.
(OR)
10. Explain the principle and working of a Pyranometer with a neat diagram.
11. Explain the construction and working of a liquid heating type flat plate collector.
(OR)
12. Explain Natural and forced circulation systems.
13. Explain V-I characteristics of a solar cell with a neat diagram.
(OR)
14. Explain the effect of series and shunt resistance on the performance of solar cell.
15. Write the configuration, advantages and limitations of Cadmium Telluride PV cells.
(OR)
16. What are the steps involved in the fabrication of solar module?
17. Explain construction, working of a lead-acid battery. Write its advantages and disadvantages.
(OR)
18. Explain working of Fly wheel energy storage system.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

(5)

Class	: III B.Sc Hons [Physics & Computer Science]	Max Marks	: 60
Subject	: Physics	Pass Mark	: 24
Title of Paper	: Electronic Instrumentation	Duration	: 3 Hrs
Paper Code	: R23PHY502/R23MPHY502	Time	: 2pm - 5pm
W.E.F	: 2025-26	Date	: 12-11-2025

SECTION-A

I. Answer any FIVE of the following Questions

5X4=20M

1. Define accuracy and precision, sensitivity and resolution in measurements.
2. Write a short note on DC and AC Voltmeters.
3. What are various controls of CRO?
4. Write about digital storage oscilloscope.
5. Write about Piezo electric transducer.
6. Measure the frequency in Wien's bridge.
7. Explain seven segment display system.
8. Write a short note on radiography.

SECTION-B

II. Answer ALL the following Questions

5X8=40M

9. Write the construction and working of analog multimeter.
[OR]
10. Write the construction and working of digital multimeter.
11. Write the principle and block diagram of CRO.
[OR]
12. Mention the applications of CRO in measurement areas of AC & DC voltages, frequency and time period.
13. Explain briefly about LVDT.
[OR]
14. What are AC bridges? Explain about Maxwell's bridge.
15. Define display devices. Write a note on LED.
[OR]
16. Write about LCD (liquid crystal display).
17. Write about ultra sound scanning and ventilator.
[OR]
18. What are amplifiers? Write about RC coupled amplifier.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

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V - SEMESTER END EXAMINATIONS

Class : III B.Sc Hons[Biotechnology]

Max Marks : 60

Subject : Botany

Pass Mark : 24

Title of Paper : **Industrial Biotechnology**

Duration : 3 Hrs

Paper Code : R23BT501

Time : 2pm - 5pm

W.E.F : 2025-26

Date : 30.10.2025

SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

Draw labelled diagrams wherever necessary.

1. Synthetic media
2. Bioreactor
3. Batch bioreactor
4. Citric acid production
5. Production of Baker's yeast
6. Production of single cell protein
7. Monoclonal antibodies
8. Insulin

SECTION-B

II. Answer ALL the following questions.

5X8=40M

Draw labelled diagrams wherever necessary.

9. Define Sterilization. Discuss the methods of sterilization.
(OR)
10. Describe the Isolation and Screening of Industrially Important Microorganisms
11. Write an account on basic Principles of the Bioreactor
(OR)
12. Classify Bioreactors based on their design and mode of operation
13. Write in detail the different steps involved in the production of wine
(OR)
14. Define Molasses. Explain in detail about Ethanol production
15. Explain the following: (1) Production of Amylase
(2) Production of Protease
(OR)
16. Explain the following: (1) Production of Streptomycin
(2) Production of Penicillin
17. Discuss in detail about the Production of Amino acids.
(OR)
18. Explain the production of Recombinant Vaccines.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

7

Class : III B.Sc Hons(Biotechnology)

Max Marks : 60

Subject : Biotechnology

Pass Mark : 24

Title of Paper : **Food and Nutritional Biotechnology**

Duration : 3Hrs

Paper Code : R23BT502

Time : 2 pm - 5 pm

W.E.F : 2025-26

Date : 01-11-2025

SECTION-A

I. Answer any FIVE of the following:

5X4=20M

Draw labelled diagrams wherever necessary

1. Food intoxication
2. Adulteration
3. Salting and Smoking
4. Preparation of Yoghurt
5. Any two Vitamin deficiency disorders
6. Calorie maintenance
7. Atherosclerosis and obesity
8. RDA

SECTION-B

II. Answer ALL of the following:

5X8=40M

Draw labelled diagrams wherever necessary

9. Explain about Microorganisms associated with food.

(OR)

10. Write an essay on storage methods at High temperature.

11. Explain the various methods of cooking.

(OR)

12. Write an essay on Food packing.

13. Write about importance, nutritional value and preservation methods of animals and sea foods.

(OR)

14. Write an essay on Microbiology of milk and milk products.

15. Write about types and sources of Vitamins.

(OR)

16. Write about nutritional deficiency disorders.

17. Write down the below following

i. BMR

ii. BMI

(OR)

18. Explain about food allergy, controlling measures and its importance in health.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

Class : III B.Sc Hons(Biotechnology)

Max Marks : 60

Subject : Biotechnology

Pass Mark : 24

Title of Paper : **Gene Biotechnology**

Duration : 3Hrs

Paper Code : R23BT503

Time : 2pm - 5pm

W.E.F : 2025-26

Date : 04-11-2025

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SECTION-A

I. Answer any FIVE of the following

5X4=20M

Draw labelled wherever necessary.

1. History of classical and modern genetics.
2. tRNA.
3. Chromosomal theory of inheritance.
4. Back cross and test cross.
5. Brief account on mutagens.
6. Repeated sequences.
7. Human karyotype.
8. ~~Yeast~~ T7 element.

SECTION-B

II. Answer ALL of the following

5X8=40M

Draw labelled wherever necessary.

9. Describe the structure, types and functions of DNA.
(OR)
10. Explain E. coli as genetic model organism and their significance.
11. Write as essay in Linkage.
(OR)
12. Write an essay on Mendal Laws of Inheritance.
13. Explain structural and Numerical alterations of chromosomes.
(OR)
14. Write an essay on DNA repair mechanisms.
15. Write an essay in mapping genes by interrupted mating.
(OR)
16. Write about method^s of gene transfer.
17. Explain about chromosomal banding techniques.
(OR)
18. Write about human genetic diseases.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)
V - SEMESTER END EXAMINATIONS

(9)

Class : III B.Sc Hons [Biotechnology]

Max Marks : 60

Subject : Biotechnology

Pass Mark : 24

Title of Paper : **Nanotechnology and Pharmaceutical Biotechnology**

Duration : 3 Hrs

Paper Code : R23BT504

Time : 2pm - 5pm

W.E.F : 2025-26

Date : 14/11/2025

SECTION-A

I. Answer any FIVE of the following Questions Draw labeled diagrams wherever necessary
5X4=20M

1. Give a note on Bio degradable polymers
2. Write about Liposomes and Hexosomes
3. What are Nanotubes and Nanorods
4. Define Bio nanoelectronics with suitable examples
5. What is Pharmacokinetics?
6. Brief note on Antiviral and anti-helminthic drugs
7. Write a note on Production of IFN
8. Write about Production of Human Growth Hormones

SECTION-B

II. Answer any FIVE of the following Questions Draw labeled diagrams wherever necessary
5X8=40M

9. Describe the nano composites and their applications and properties.
(OR)
10. Define Nanobiology and throw light on different examples of Nanoparticles and their applications.
11. Write about analysis of Biomolecular nanostructures by Atomic Force Microscopy.
(OR)
12. Explain in detail about different nanoparticles used in drug delivery system with suitable examples and applications.
13. What are nano scale drugs? Illustrate with examples and applications.
(OR)
14. Give a detail note on applications of nanobiotechnology in medicine.
15. Define pharmacology. Explain in detail with few drugs and classification systems.
(OR)
16. What are Chemotherapeutic Drugs? Discuss in detail about protein synthesis inhibitors and anti-cancer drugs.
17. Give a detail about production of Human Insulin and Clotting Factor 8
(OR)
18. What is Tissue engineering? Explain with suitable examples.

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V - SEMESTER END EXAMINATIONS

(10)

Class : III B.Sc Hons[Biotechnology/CS]

Max Marks : 60

Subject : Chemistry

Pass Mark : 24

Title of Paper : **Environmental Chemistry**

Duration : 3 Hrs

Paper Code : R23MCHE501

Time : 2 pm - 5 pm

W.E.F : 2025-26

Date : 25-10-2025

SECTION-A

I. Answer any FIVE of the following Questions.

5X4=20M

1. Explain briefly the reactions of atmospheric oxygen
2. Discuss about Bhopal Gas Tragedy
3. Write the classification of Air Pollutants.
4. Explain the terms DO and BOD.
5. Write a note on Hardness.
6. Write an essay on the Toxic effects of Lead and Mercury.
7. Write an essay on the Toxic effects of Arsenic and Cadmium.
8. Write a short note Food Chain.

SECTION-B

II. Answer ALL the following questions.

5X8=40M

9. Write a note on Non Renewable sources.

(OR)

10. Describe the Hydrological Cycle.

11. Discuss the various controlling methods for Air Pollution.

(OR)

12. Write a note on following

- i) Formation and Depletion of ozone layer ii) Photochemical smog

13. Discuss various methods for Industrial waste water treatment.

(OR)

14. Describe Ion Exchange Method to remove Permanent Hardness

15. Discuss the Solid Waste Management.

(OR)

16. Explain in detail about Cyanides and its toxic effects.

17. Discuss the significance of Biodiversity.

(OR)

18. Discuss the structure and functions Ecosystem

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KAKARAPARTI BHAVANARAYANA COLLEGE (AUTONOMOUS)

V – SEMESTER END EXAMINATIONS

(11)

Class : III B.Sc Hons [Computers & Biotechnology]

Max Marks : 60

Subject : Chemistry

Pass Mark : 24

Title of Paper : **Chromatography and Instrumental Methods of Analysis**

Duration : 3 Hrs

Paper Code : R23MCHE502

Time : 2pm - 5pm

W.E.F : 2025-26

Date : 12-11-2025

SECTION-A

I. Answer any FIVE of the following Questions

5X4=20M

1. Write a note on Eluents
2. Write a note on Applications of Thin layer Chromatography
3. What is radial or Circular Paper Chromatography
4. What is the basic Principle of HPLC
5. What is the Principle of Column Chromatography
6. Write a note on applications of UV-Visible Spectroscopy
7. What is Polarized light
8. State the principle of refractometry

SECTION-B

II. Answer ALL the following Questions

5X8=40M

9. What are the factors that affect Rf Values in Chromatography

[OR]

10. Write an essay on the nature and role of adsorbents used in Chromatographic techniques

11. Explain Principle of thin layer Chromatography. How does it help in separating and identifying chemical Substances?

[OR]

12. Explain different Modes of Paper Chromatography

13. Describe the instrumentation of HPLC with the help of Block diagram. Explain the function of each component

[OR]

14. Give the detailed experimental procedure for Column Chromatography

15. Give the detailed instrumentation of Single beam and double beam spectrometer

[OR]

16. Write an essay on the applications of Beers Lamberts Law in quantitative analysis. How is it used to determine Fe²⁺, Mn²⁺, Pb²⁺, ions in solution

17. Describe the construction and working of Polarimeter. How is it used to measure optical rotation of substance

[OR]

18. Describe the construction and working of a refractometer. What are its main components and how are accurate readings obtained?