MASTER OF COMPUTER APPLICATION

ASSIGNMENTS

MCA – 4th SEMESTER

(SESSON 2025-2026)

Directorate of Distance Education
Guru Jambheshwar University of Science & Technology
Hisar - 125001

CENTRE FOR DISTANCE AND ONLINE EDUCATION (CDOE)
GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR

Course Name: IoT and Cloud Computing **Semester: 4th**
Paper Code: MCA-41 **Total Marks: 30**

Important Instructions

1. Attempt all questions from each assignment given below.
2. Each assignment carries 15 marks.
3. All questions are to be attempted in legible handwriting on plane white A-4 size paper andupload the scanned copy of the assignments on student's portal.

ASSIGNMENT-I

Q1. Explain an information driven value chain for IoT with a neat diagram.

Q2. Explain how gateways are used for data management, local applications and devicemanagement in IoT.

Q3. What is the difference between Real Time and Local Analytics?

ASSIGNMENT-2

Q1. Explain various IoT Applications. And also explain the Legal challenges in IoT.

Q2. Explain about Wireless Technologies for the IoT and discuss about Edge Connectivity in IPBased Protocol for IoT.

Q3. Write short notes on Arduino function libraries.

Prepared By:
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GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR

Course Name: Mobile Application Development **Semester: 4th**
Paper Code: MCA-42 **Total Marks: 30**

Important Instructions

1. Attempt all questions from each assignment given below.
2. Each assignment carries 15 marks.
3. All questions are to be attempted in legible handwriting on plane white A-4 size paper andupload the scanned copy of the assignments on student's portal.

ASSIGNMENT-I

Q1. Explain Mobile OS Architecture with neat diagram.

Q2. Discuss about Android core building blocks.

Q3. Explain Toggle, Switch and Image Buttons.

ASSIGNMENT-2

Q1. Explain Activity Lifecycle with appropriate example.

Q2. Discuss about Android Menu in detail.

Q3. Describe SQLite and XML in detail.

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GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR
CENTRE FOR DISTANCE AND ONLINE EDUCATION

Programme: Master of Computer Application

Course Name: High Speed Network **Semester: 4th**
Code: MCA-43 **Total Marks: 30**

Important Instructions

1. Attempt all questions from each assignment given below.
2. Each assignment carries 15 marks.
3. All questions are to be attempted in legible handwriting on plane white A-4 size paper and upload the scanned copy of the assignments on student's portal.

ASSIGNMENT-I

Q1. What is Gigabit Ethernet? Explain the Gigabit Ethernet Frame Format in detail.

Q2. Define the different types of ISDN Channels and their respective functions.

Q3. Discuss the ATM Reference Model in detail.

ASSIGNMENT-2

Q1. Provide a comprehensive overview of the IEEE 802.11 (WLAN) standard.

Q2. Explain why TCP is considered "connection-oriented" and "reliable," while UDP is "connectionless" and "unreliable."

Q3. Provide a detailed comparison between IPv4 and IPv6 header formats.

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CENTRE FOR DISTANCE AND ONLINE EDUCATION
GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR

Course: Computer Graphics **Paper Code: MCA-44**
Semester: 4th **Total Marks: 30**

Important Instructions

i. **Attempt all questions from each assignment given below.**
ii. **Each assignment carries 15 marks.**
iii. **All questions are to be attempted in legible handwriting on plane white A-4size paper and same is uploaded through login your account.**

ASSIGNMENT-I

Q1. Explain the Bresenham's Line Drawing Algorithms. How do Bresenham's differ from DDA in terms of implementation and efficiency?

Q2. Compare Mid-point Circle Drawing Algorithm and Bresenham's Circle Drawing Algorithm with respect to efficiency and accuracy.

Q3. Discuss the different types of transformations in 2D graphics, focusing on translation, scaling, and rotation. Provide their respective matrix representations.

ASSIGNMENT-II

Q1. Describe the Z-buffer algorithm for hidden surface removal. How does it ensure that the closest surfaces are displayed in a 3D rendered scene?

Q2. Explain the properties of Bezier curves. Also derive the mathematical equation of a Bezier curve.

Q3. What is image processing in the context of computer graphics? Explain the importance of geometric transformations and filtering techniques in image manipulation.

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