

MASTER OF COMPUTER APPLICATION

ASSIGNMENTS

MCA – 1st SEMESTER



(SESSION 2026-2027)

**Centre for Distance and Online Education
Guru Jambheshwar University of Science
& Technology, Hisar - 125001**

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

Course: Database Management System
Paper Code: MCA-11

Semester: 1st
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.

ASSIGNMENT-I

- Q1. What is the difference between a file system and a database system? Explain the main features that make a database system different from a traditional file system.
- Q2. What are the main duties and responsibilities of a Database Administrator (DBA)? Explain how these responsibilities help in managing and maintaining a database effectively.
- Q3. What do you mean by entity types, attributes, and relationships in the E-R model? Explain how these components are represented using an E-R diagram.

ASSIGNMENT-II

- Q1. Explain the process of normalization. What are database anomalies, and how does normalization help eliminate them?
- Q2. Describe the ACID properties of transactions in database systems. Why are these properties essential for maintaining the integrity of a database?
- Q3. Discuss the significance of locking techniques and time-stamp ordering in maintaining data consistency.

Prepared by:
Dr. Kapila Devi
Assistant Professor (CS)
CDOE, GJUS&T, Hisar

CENTRE FOR DISTANCE AND ONLINE EDUCATION
GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR
Programme: Master of Computer Application

Course Name: Web Designing
Paper Code: MCA-12

Semester: 1st
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. | Explain Various organization schemes and organization structures. | 5 |
| Q2. | Explain various core attributes in HTML with proper example. | 5 |
| Q3. | Explain Navigation System and its types. | 5 |

ASSIGNMENT-2

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|-----|--|---|
| Q1. | Explain JavaScript Object model in detail. | 5 |
| Q2. | What is PERL? Explain various data structures in PERL. | 5 |
| Q3. | Explain ASP and JSP Lifecycle in detail. | 5 |

Prepared By:
Dr. Neeraj Verma
Assistant Professor (CS)
CDOE, GJUS&T, Hisar

CENTRE FOR DISTANCE AND ONLINE EDUCATION
GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR
Programme: Master of Computer Application

Course Name: Java Programming
Paper Code: MCA-13

Semester: 1st
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. | Discuss looping structures (For, While and Do-while) in Java with proper example. | 5 |
| Q2. | Explain different types of Inheritance with proper example. | 5 |
| Q3. | Differentiate between overloading and overriding methods with example. | 5 |

ASSIGNMENT-2

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|-----|--|---|
| Q1. | Explain Byte Stream classes with example. | 5 |
| Q2. | Explain various types of Events in Java. | 5 |
| Q3. | What do you understand by Frame? Write down a program to create frame. | 5 |

Prepared by:
Dr. Neeraj Verma
Assistant Professor (CS)
CDOE, GJUS&T, Hisar

GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR

CENTRE FOR DISTANCE AND ONLINE EDUCATION

Programme: Master of Computer Application

Course Name: Software Engineering
Code: MCA-14

Semester: 1st
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 a software process model? Explain the Prototyping Model and mention its main advantages and limitations. 5

Q2. What is software project estimation? Explain Function Point Analysis and COCOMO in brief. 5

Q3. What is software risk? Explain the basic steps involved in identifying, analyzing, and managing risks in a software project. 5

ASSIGNMENT-II

Q1. What is Software Requirement Engineering? Explain functional and non-functional requirements with suitable examples. 5

Q2. What is a Software Requirement Specification (SRS)? Explain its purpose and the main characteristics of a good SRS. 5

Q3. Explain Black Box Testing and White Box Testing. Differentiate between them and give one suitable example of each. 5

Prepared By:

Dr. Ritu

Assistant Professor (CDOE)

GJUS&T, Hisar

CENTRE FOR DISTANCE AND ONLINE EDUCATION
GURU JAMBHESHWAR UNIVERSITY OF SCIENCE & TECHNOLOGY, HISAR
Programme: Master of Computer Application

Course Name: Computer Networks and Internet Protocols
Paper Code: MCA-15

Semester: 1st
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-1

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|-----|---|---|
| Q1. | Define Network Topology. Explain different types of network topologies in detail. | 5 |
| Q2. | Give a complete description of ISO-OSI reference Model with proper diagram. | 5 |
| Q3. | Discuss Flow Control Protocols in detail. | 5 |

ASSIGNMENT-2

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|-----|---|---|
| Q1. | What is IP addressing? Explain IPV4 and IPV6 in detail. | 5 |
| Q2. | Explain various routing algorithms in detail. | 5 |
| Q3. | Explain TCP, UDP and Internet Protocol. | 5 |

Prepared By:
Dr. Neeraj Verma
Assistant Professor (CS)
CDOE, GJUS&T, Hisar

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

Course Name: Database Management System Lab.
Code: MCA-16

Semester: 1st
Max. Marks: 30

Important Instructions

1. Attempt any **seven** experiments/assignments.
2. All assignments are to be completed either in legible handwriting on plain white A4-size paper or typed in a Word file, along with appropriate screenshots of the output of the respective assignments. Practical file must be uploaded on the LMS portal.

List of experiments/assignments:

1. Use Oracle software and login with valid userid and password. Explore its GUI and practice some basic commands of it.
2. Three assignments related to creation of database with tables having different fields and data types.
3. Two assignments on the creation of table with different types of constraints.
4. Two assignments on insert, delete and modify records from the tables.
5. Two assignments on modifying the table using the alter command.
6. Two assignments on exploring select statement using various clauses like where, order by, group by, having and aggregate functions.
7. Two assignments on the use of set operations to query the tables.
8. Two assignments on creating joins and views on the tables.
9. One assignment on generating sub-queries.

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

Course Name: Web Designing Lab.
Code: MCA-17

Semester: 1st
Max. Marks: 30

Important Instructions

1. Attempt any **ten** experiments/assignments.
2. All assignments are to be completed either in legible handwriting on plain white A4-size paper or typed in a Word file, along with appropriate screenshots of the output of the respective assignments. Practical file must be uploaded on the LMS portal.

List of experiments/assignments:

- Q1. Create a simple webpage using HTML.
- Q2. Designing of registration form with table and use of hyperlink.
- Q3. Design a page with frames to include Images and Videos.
- Q4. Add a cascading style sheet for designing the web page.
- Q5. Use user defined function to get array of values and sort them in ascending order on webpage
- Q6. Design a dynamic web page with validation of form field using Java Script.
- Q7. Design a catalogue in ASP.
- Q8. Event Handling Validation of registration form.
- Q9. Open a Window from the current window on Mouse Over event.
- Q10. Create a simple application to demonstrate Servlets Request and Response object.
- Q11. Demonstrate Array Objects and Date Object's predefined methods
- Q12. Display calendar for the month and year selected from combo box
- Q13. Create a welcome Cookie (Hit for a page) and display different image and text content eachtime when the user hit the page.
- Q14. Demonstrate Request and Response object using HTML Form.
- Q15. Database Connection to display all the values in the table.

CENTRE FOR DISTANCE AND ONLINE EDUCATION
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HISAR

Course Name: Java Programming Lab
Code: MCA-18

Semester: 1st
Max. Marks: 30

Important Instructions

1. Attempt any ten experiments/assignments.
2. All assignments are to be completed either in legible handwriting on plain white A4-size paper or typed in a Word file, along with appropriate screenshots of the output of the respective assignments. Practical file must be uploaded on the LMS portal.

List of experiments/assignments:

- Q1. Use eclipse or NetBeans platform and acquaint with the various menus, create a test project, add a test class and run it to see how you can use auto suggestions and auto fill functionalities. Try code formatter and code refactoring like renaming variables, methods and classes. Try debug step by step with a small program of about 10 to 15 lines which contains at least one if else condition and a for loop.
- Q2. Two assignments illustrating class, objects, methods, arrays and various data types in java.
- Q3. Two assignments on the use of control, looping statements and user defined functions.
- Q4. One assignment illustrating the implementation of various forms of inheritance.
- Q5. One assignment on method overloading.
- Q6. One assignment on polymorphism and method overriding.
- Q7. One assignment on implementing exception handling.
- Q8. One assignment to illustrate interfaces in java.
- Q9. One assignment to create package in java.
- Q10. One assignment to design of multithreaded programs in java.
- Q11. One new assignment on event handling.
- Q12. Two assignments related to java applets.
- Q13. One assignment to design a GUI application.
- Q14. One assignment to access and update data from a database using JDBC.