D–1545	Sub. Code
	31311

DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION, MAY 2023

First Semester

COMPUTER ORGANIZATION AND ARCHITECTURE

(CBCS 2018-19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

SECTION A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Define combinational circuits.

2. List out various types of flip-flops.

3. How to find 2's compliment of a decimal number?

4. What are the uses of register in computer?

5. Comment on Addressing Modes.

6. Define stack.

7. What is meant by peripheral devices? Give its types.

8. Draw the diagram for connection of I/O bus to input output devices.

9. List out the advantages of RAM.

10. Define Cache memory.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions. Choosing either (a) or (b)

11. (a) Explain about AND, OR, NOT gates.

Or

(b) Write a short note on Boolean Algebra.

12. (a) Explain about Arithmetic logic shift unit.

Or

(b) Explain about shift microoperations.

13. (a) Give the eight different conditions for addition and subtraction of signed magnitude numbers.

Or

(b) Explain different types of addressing modes.

14. (a) Explain about I/O interfaces.

Or

(b) What is meant by peripheral devices and its types?

15. (a) Evaluate three types of mapping procedure in cache memory.

Or

(b) Write short notes on virtual memory.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions

16. With neat diagram explain multiplexers.

17. Explain about register configuration for floating point arithmetic operations.

18. Write about general register organization.

19. Explain with example about asynchronous data transfer.

20. Discuss about operation of Associative memory.

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31312

DISTANCE EDUCATION

M.Sc. (Information technology) DEGREE EXAMINATION, MAY 2023.

First Semester

OBJECT ORIENTED PROGRAMMING AND JAVA

(CBCS 2018-19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. What is OOP?

2. Define Java Virtual Machine.

3. How to define a class in java?

4. Comment on Packages.

5. What is thread?

6. Define Priority in thread.

7. Comment on Exception.

8. Define Graphics class.

9. Write about Stream Classes.

10. Define I/O Exceptions.

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b)

11. (a) Write about Java Program Structure.

Or

(b) Explain various data types in Java.

12. (a) Elaborate how to creating objects in java?

Or

(b) Write a java program to create one dimensional array.

13. (a) How to extending the thread class? Explain with example.

Or

(b) Explain about Synchronization.

14. (a) Explain various types of errors.

Or

(b) How applets differ from Applications?

15. (a) Discuss about Random Access file.

Or

(b) How to reading and writing characters in a file using Java?

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain decision making and branching statements in Java.

17. Discuss about Multiple Inheritance.

18. Illustrate on Multithreading.

19. How to creating an Executable Applet? Explain with example program.

20. Discuss about Byte stream and character stream classes.

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DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION, MAY 2023.

First Semester

DATA STRUCTURES AND ALGORITHMS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. What is Algorithm?

2. Define Array.

3. What is stack and its operations?

4. Comment on Circular Queue.

5. Define Root and Leaf in Tree concept.

6. Define Parent and child of a tree.

7. What is Searching?

8. List out the uses of Searching techniques.

9. Define Sorting.

10. What is meant by Radix Sort?

SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL the questions, choosing either (a) or (b).

11. (a) Discuss about Time and Space Complexity of an Algorithms.

Or

(b) Explain about Two dimensional and Multidimensional array.

12. (a) Explain various applications of Queue.

Or

(b) Briefly explain about singly linked list.

13. (a) Differentiate Tree and Binary Tree.

Or

(b) Explain about Binary Search Tree.

14. (a) Explain various types of Searching.

Or

(b) Give a note on Linear Search.

15. (a) Write about Insertion Sort.

Or

(b) How selection sort works? Explain with example.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain various types of data structure.

17. Discuss about insertion and deletion of Linked List.

18. Illustrate on Binary Tree Traversals.

19. How to sort elements using Binary Search?

20. Discuss about Quick Sort.

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31321

DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION, MAY 2023

Second Semester

DATA MINING AND WAREHOUSING

(CBCS 2018-19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

SECTION A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Name different types of warehouse schema.

2. What is dimensionality reduction?

3. Define frequent itemset.

4. What is a decision tree?

5. Distinguish between supervised and unsupervised learning.

6. What is CLARA? Write its features.

7. Define web usage mining.

8. List the features available in WEKA data mining tool.

9. List the benefits of big data processing.

10. What are the modes that a Hadoop can run?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) What are the three models of data warehouse server? Explain any one / OLTP operations.

Or

(b) What is data visualization? Explain any two data visualization techniques.

12. (a) What is association rule? Explain the Pincher search association rule mining algorithm.

Or

(b) State Bayes theorem and discuss how Bayesian classifiers work.

13. (a) Explain the K-means clustering method.

Or

(b) What is a Neural Network? Explain the role of Neural Network in datamining.

14. (a) What is the purpose of web structure mining? Explain.

Or

(b) Describe all the Spatial Data Mining Primitives.

15. (a) What are the characteristics of Big Data? Explain.

Or

(b) Explain the data integration components of Hadoop Ecosystem.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe data warehouse architecture with neat diagram.

17. Explain the apriori algorithm for association rule mining.

18. Explain the General Steps of Hierarchical Clustering method with example.

19. Describe Web content Mining in detail.

20. What are the core components of Hadoop? Explain.

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DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION, MAY 2023.

Second Semester

RELATIONAL DATABASE MANAGEMENT SYSTEMS (RDBMS)

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. What is cemanting data model?

2. Write any five data models with the example systems.

3. What is key constraint?

4. What is relational database query? Give example.

5. Write a basic form of an sql query.

6. What is functional dependency?

7. Write down the properties of transactions to maintain the data base systems.

8. What is locking and write down the two modes of lock?

9. Define buffer manager.

10. What are heap files?

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Describe the drawbacks of file systems.

Or

(b) Discuss the advantages of DPMS.

12. (a) What are integrating conscience? How they are specified and enforced?

Or

(b) How set operations are used in relational algebra? Discuss.

13. (a) Describe union, intersect and except constructs with suitable examples.

Or

(b) Describe the problems related to decomposition.

14. (a) Discuss the atomicity properties of transactions.

Or

(b) Write short notes on the time stamp and-ordering protocal.

15. (a) Write short notes on clustered indexing.

Or

(b) What is Hash-based indexing? Discuss.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain the six steps in the database design process.

17. What is Tuple relational calculus? Explain the syntax and sematics of TRC queries.

18. Explain the problems caused by retedency.

19. Explain the following storage problems

    (a) redo and undo transactions

    (b) check points.

20. (a) Write short notes on sorted files.

    (b) What are composite search keys? Explain.

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	31323

DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION, MAY 2023.

Second Semester

VISUAL PROGRAMMING WITH .NET

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. Write any six projects in Visual Studio.

2. What are the applications supported by office projects.

3. Mention C# primitive data types.

4. What is Enum? How it is declared in VB.Net?

5. Define class view.

6. What is the use of UAC settings in VB.Net?

7. What is the purpose of “The quick watch window”?

8. How to use pin to source in Visual Studio?

9. What is the use of StackPanel layout?

10. Write any four handling events.

SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL the questions, choosing either (a) or (b).

11. (a) Describe about automatically generated code and rapid coding experience in Visual Studio.

Or

(b) Discuss about customizability and extensibility.

12. (a) What is the Main method? How does it declared in C# and VB.Net?

Or

(b) How to create a class inheritance in VB.Net with suitable example?

13. (a) Describe about assembly information.

Or

(b) Write short notes on rebuilding solutions.

14. (a) How do you create a breakepoint in C#? Explain with suitable example.

Or

(b) Write short notes on IntelliTrace.

15. (a) Discuss about DockPanel layout.

Or

(b) How do you deploy web services with WCF? Discuss.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Describe the Visual Studio IDE.

17. How do you declare fields and properties in VB.Net? Explain with suitable program.

18. Explain the project properties window.

19. How table are created in database? Write a program to create tables with foreign keys.

20. How do you setting up a data source? Explain with suitable example.

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DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION, MAY 2023.

Third Semester

OPEN SOURCE SOFTWARE

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Why needs open source software?

2. Define Cloning.

3. How do you write SQL programs?

4. Define metadata.

5. List out various data types in PHP.

6. Define an Array.

7. What is Tuples?

8. Demonstrate Simple IF Statement using Python.

9. Define Subroutines.

10. What is Packages?

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Write about Application of Open Sources.

Or

(b) Explain about Scheduling.

12. (a) How do you create an account in SQL Programs?

Or

(b) Write a short note on MySQL.

13. (a) Comment on various operators in PHP.

Or

(b) How configure LDAP in PHP?

14. (a) Write a python program to find the length of a string.

Or

(b) Explain about Inheritance in Python.

15. (a) What is the syntax of Perl? Explain it.

Or

(b) How to create module in Perl? Give an Example.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Illustrate Open Sources.

17. How do you sort query results in ascending order? Explain it.

18. Demonstrate sending and receiving E-mails using PHP.

19. Write Python program for finding maximum and minimum K elements in Tuple.

20. Explain about Packages in Perl.

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31332

DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION, MAY 2023.

Third Semester

OPERATING SYSTEMS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. What is meant by Operating System?

2. List out various operations of OS.

3. Comment on Process scheduling.

4. List out various operations on processes.

5. What is critical section problem?

6. Define synchronization hardware.

7. What is Deadlock recovery?

8. Comment on Contiguous memory allocation.

9. Define File System.

10. What is meant by Disk management?

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Write about System calls and system programs.

Or

(b) Explain about computer system organization.

12. (a) Explain about inter process communication.

Or

(b) Briefly explain about Multiple processor scheduling.

13. (a) Define Semaphores.

Or

(b) Explain about Deadlock characterization.

14. (a) Explain about swapping.

Or

(b) Give a note on paging.

15. (a) Explain about File system structure.

Or

(b) Write a note on Free space Management.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Illustrate on Operating system structure.

17. Discuss various scheduling algorithms.

18. Explain about Deadlock avoidance and detection.

19. Discuss about segmentation.

20. Explain Mass storage structure in detail.

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31333

DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION, MAY 2023.

Third Semester

COMPUTER NETWORKS

(CBCS – 2018-19 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. What is ring topology?

2. List the use of MAN.

3. Define CRC.

4. State the ALOHA.

5. What do you mean by packet switching?

6. Define dynamic routing.

7. Why we need UDP?

8. Expand RPC and define.

9. What is decryption?

10. Define DES.

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Explain about Transmission modes.

Or

(b) Differentiate LAN, MAN and WAN.

12. (a) Illustrate error detection and correction.

Or

(b) Discuss about CSMA.

13. (a) Describe message switching.

Or

(b) Explain hierarchical routing.

14. (a) Analyse the process to process delivery.

Or

(b) Elaborate DNS.

15. (a) Explain about the encryption model.

Or

(b) Discuss about the RSA.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Illustrate the OSI layer with neat diagram.

17. Evaluate the stop – wait protocol and sliding window protocol.

18. Give an account on virtual circuit and datagram subnets.

19. Compare connection oriented and connectionless services.

20. Describe about the transposition and substitution chippers.

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DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION, MAY 2023.

Fourth Semester

WEB TECHNOLOGY

(CBCS 2018-19 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. State the importance of image tag used in HTML.

2. State the difference between XML and HTML.

3. Bring out the advantages of Java Beans.

4. What is meant by entity bean?

5. Give the advantage and disadvantage of servlet over CGI.

6. What are cookies?

7. What is Session tracking?

8. How to declare variables in JSP?

9. What is datasource and rowset in javax.sql package?

10. What is Struts Framework?

PART B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).

11. (a) Write a short note on CSS.

Or

(b) Explain about XML Presentation Technologies.

12. (a) Explain shortly on the different properties of a Java Bean.

Or

(b) Give a brief note on Java Beans API.

13. (a) How to handle cookies in servlet? Explain it with suitable example.

Or

(b) Explain in detail about javax.servlet.http package.

14. (a) What are the implicit objects in JSP? Describe it.

Or

(b) What is Data Sharing? Write a sample program of data sharing in JSP pages.

15. (a) Demonstrate how to use a Bean in a JSP page.

Or

(b) Bring out the steps required to create a new Database using JDBC application.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe How DHTML Work With Javascript?

17. Explain the following :

    (a) Bean Info interface

    (b) Bound properties

    (c) Constrained Properties

18. Write the steps to Installing and configuration of Tomcat web server over standalone servlet.

19. Discuss about the JSP Application based on MVC Architecture.

20. Explain the architecture of struts framework with suitable diagram.

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DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION, MAY 2023.

Fourth Semester

SOFTWARE ENGINEERING

(CBCS – 2018-2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Define a Process Framework.
2. List out the merit of Incremental Process Model.
3. What is Requirement Engineering?
4. Define Data Modeling.
5. What is called a Data Abstraction?
6. What is Coupling?
7. List out the objectives of testing.
8. Define Complexity.
9. Define a term Risk Identification.
10. Describe RMMM Plan.

PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) Write notes on Role of Software.

Or

(b) Explain about the Unified process.

12. (a) How do you validating requirements?

Or

(b) Comment on Scenario-Based Modeling.

13. (a) Write a note on Design Concepts.

Or

(b) List out steps for Interface Design.

14. (a) What is called a Unit Testing? Explain it.

Or

(b) Write about metrics for measurement.

15. (a) Comment on Software Risks.

Or

(b) Write a notes on the ISO 9000 quality standards.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Differentiate the Waterfall model and Evolutionary process model.

17. Explain about Data Modeling Concepts.

18. Demonstrate the process of User Interface Design.

19. Examine the Inventory Management System by using White-Box Testing techniques.

20. Discuss about Risk Strategies.

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DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION, MAY 2023.

Fourth Semester

CLOUD COMPUTING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Define Cloud Computing.

2. List out some benefits of Cloud Computing.

3. Write about Grocery lists.

4. What is meant by collaborating cloud on contact lists?

5. Explain about online calendar application.

6. Explain about storing and sharing of files in online account.

7. List out the four levels of federation.

8. Explain cloud file system.

9. Write about open source cloud platforms.

10. List the importance of Eucalyptus tool.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions choosing either (a) or (b).

11. (a) Demonstrate the working on cloud computing.

Or

(b) Explain how to discover cloud services development services and tools.

12. (a) Elaborate how to collaborate on household budgets.

Or

(b) Explain cloud computing for corporation.

13. (a) Explain how to collaborate on event management?

Or

(b) Explain how to collaborate on contact management?

14. (a) Outline the privacy in cloud.

Or

(b) Elaborate on cloud storage providers.

15. (a) Illustrate the tool-Eucalyptus.

Or

(b) Elaborate on open nebula tool.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain developing cloud services.

17. Demonstrate the collaboration on schedules.

18. Explain the exploring online planning and task management.

19. Make a case study on Aneka.

20. Outline the study of open source cloud platforms.

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