D–3172

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DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION, DECEMBER 2019.

First Semester

Information Technology

COMPUTER ORGANIZATION AND ARCHITECTURE

(CBCS 2018 – 2019 academic year onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions

1.   Convert the octal 623.77 to decimal.

2.   Write the truth table for AND gate.

3.   Define bus.

4.   What is buffer latch?

5.   Define Instruction cycle.

6.   What is stack?

7.   What is DMA?

8.   What do mean by Control word?

9.   Define main memory.

10.   What is Hit ratio?

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Illustrate the function of Half-Adder with a neat diagram.

Or

(b) Explain about sum of product (SOP) and product of sum (POS).

12. (a) How can you design a binary counter with parallel load? Discuss.

Or

(b) Explain the working of inverter.

13. (a) Describe the basic computer instruction formats.

Or

(b) Demonstrate the use of subroutine with an example.

14. (a) Describe the different modes of transfer.

Or

(b) Discuss the multiplication algorithm for two floating-point numbers.

15. (a) Write about memory hierarchy.

Or

(b) Write down the concept of memory mapping.

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PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Reduce the following function by Karnaugh map and represent the reduced function in sum of products and product of sums forms: F= π (0,3,7,8, 9, 12, 13)

17. Explain the one stage of arithmetic circuit with the neat diagram.

18. Explain the memory reference instructions in detail.

19. Discuss in detail about the handshaking method of asynchronous data transfer.

20. Describe the memory organization structure with neat sketch.

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DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, DECEMBER 2019.

First Semester

Information Technology

OBJECT ORIENTED PROGRAMMING AND JAVA

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours　　　　　　　Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. Define the concept of OOP.

2. What is meant by JVM?

3. State about static members.

4. Define overriding methods.

5. How to extend the thread class?

6. Mention the role of stop( ) method.

7. What is graphics class?

8. Differentiate Applets and Applications.

9. State the importance of character stream.

10. What is I/O exception?

PART B — (5 × 5 = 25 marks)

Answer ALL the questions.

11. (a) Describe about Java environments.

Or

(b) Write a Java Program to find area of Square, Rectangle and Circle using object.

12. (a) Explain about nesting of methods in java.

Or

(b) How two dimensional arrays are handled in Java? Explain.

13. (a) What are Java thread methods? Explain any two.

Or

(b) How to implement runnable interface in Java? Explain.

14. (a) What are the types of errors? Describe.

Or

(b) Elucidate the control loops in applets.

15. (a) Write notes on byte stream class.

Or

(b) How will you create files in Java? Discuss.

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PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Illustrate the significance of operators in java.

17. Write a Java Program to find GCD of two numbers using for loop and while loop.

18. Describe about life cycle of a thread.

19. Elucidate in detail about designing web page.

20. Write notes on role of random access files in Java.

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31313

DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, DECEMBER 2019.

First Semester

Information Technology

DATA STRUCTURES AND ALGORITHMS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. List the primitive data types.

2. How to initialize an array?

3. List the applications of queue data structure.

4. Write the postfix expression of the following infix expression.   A* B-(C+D)+E

5. What is meant by siblings?

6. Define Hashing.

7. Distinguish between linear and binary search.

8. What are the advantages of using binary search?

9. What is meant by bubble sort?

10. Write the average case and worst case time complexity of selection sort.

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) What are the types of data structures? Explain.

Or

(b) Explain the time and space complexity of algorithms.

12. (a) What are the operations performed on a stack? Explain with example.

Or

(b) Write an algorithm to search a particular element in a singly linked list.

13. (a) Explain the array representation of binary tree with example.

Or

(b) What are hashing functions? Explain their use.

14. (a) Describe the linear search algorithm with example.

Or

(b) Explain the time complexity of binary search algorithm.

15. (a) Explain the insertion sort algorithm with example.

Or

(b) Describe the selection sort algorithm.

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PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. What is an array? Explain the ways to represent the two dimensional Array in memory.

17. What is circular queue? Write an algorithm for inserting an element in a circular queue and deleting an element from a circular queue.

18. Describe various traversals of binary tree.

19. How Binary search works? Explain with example.

20. Sort the following numbers using radix sort.

    77, 12, 8, 39, 27, 21, 44, 18, 6, 427, 117, 237, 5671 and 600

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		31321

DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION, DECEMBER 2019.

Second Semester

Information Technology

DATA MINING AND WAREHOUSING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1.   Define Data Mining.

2.   What is the purpose of data cleaning?

3.   Mention about classification.

4.   What is a Decision Tree?

5.   What is machine learning?

6.   List the activation functions used in Neural Networks

7.   What do you mean by text mining?

8.   State about Rapid miner tool.

9.   What is Big Data?

10. Mention the advantages of Hadoop.

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) What are the OLAP operations? Explain.

Or

(b) Explain various activities involved in data preprocessing.

12. (a) Explain about Apriori algorithm.

Or

(b) Define ANN. Explain the advantages and applications of ANN.

13. (a) Explain the K-means algorithm and its implementation.

Or

(b) Discuss about the role of Genetic Algorithm in Data Mining.

14. (a) What is web structure mining? Illustrate.

Or

(b) Write short note on Weka data mining tool.

15. (a) Explain various types of Big Data.

Or

(b) What are core Hadoop components? Describe

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Illustrate the architecture of data warehouse.

17. Describe about Bayesian classification algorithm.

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18. What is Hierarchical clustering? Explain any one Hierarchical clustering algorithm with example.

19. Discuss about spatial data mining.

20. Elucidate the technologies available for Big Data.

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DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION, DECEMBER 2019.

Second Semester

Information Technology

RELATIONAL DATABASE MANAGEMENT SYSTEMS
(RDBMS)

(CBCS – 2018-19 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1.   Define DBMS.

2.   Write the three different data models.

3.   What is an integrity constraint?

4.   How Join operations are used?

5.   Write the basic form of an SQL query.

6.   What's trigger?

7.   What are the properties of transactions in a database system?

8.   Define the two modes of Locks.

9. List out the external storage devices.

10. What is cluster indexing?

PART B — (5 × 5 = 25 marks)

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

11. (a) Describe the functions of DBA.

Or

(b) What is transaction management? Discuss.

12. (a) How do you specify foreign key constraint? Illustrate.

Or

(b) What is selection and projection? Explain with suitable example.

13. (a) What are the problems caused by redundancy? Explain.

Or

(b) Describe about Boyce-Codd normal form.

14. (a) What is conflict serializability? Explain with example.

Or

(b) Discuss about implementation of locking.

15. (a) Describe the file organizations and indexing.

Or

(b) Write short note on clustered indexes.

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PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe the Data base system structure with neat block diagram.

17. Explain the logical data base design of entity sets to tables and relationship sets to tables.

18. Explain briefly about the Lossless-Join decompositions.

19. Explain about validation-based protocols.

20. What is Hash-Based indexing? Explain with example.

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DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, DECEMBER 2019.

Second Semester

Information Technology

VISUAL PROGRAMMING WITH .NET

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1.   What is a tool bar?

2.   Define work area.

3.   What are the four languages supported by VS-2000?

4.   Write the syntax of Select Case in VB.Net.

5.   Define Delegates.

6.   What is the use of an interface?

7.   Write the purpose of Call Hierarchy window.

8.   What is USE REMOTE MACHINE in debug properties.

9.   List out the layout controls in WPF.

10. Define XAML.

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) What is automatically generated code? Discuss

Or

(b) Describe about expanding and collapsing window.

12. (a) Explain any Five VB and C# primitive data types and their description.

Or

(b) Write the syntax of switch statement in C# with suitable example.

13. (a) How do you create and use an array in C# with suitable program?

Or

(b) How projects are created in Visual Studio? Discuss.

14. (a) Describe any Five options from the Break Point Context menu and their meaning.

Or

(b) Write short notes on Watch Window in Visual Studio.

15. (a) Describe the features of Canvas Layout.

Or

(b) How do you add a control to the visual studio designer? Explain.

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PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the different types of projects in Visual Studio.

17. How to declare parameters and Passing arguments? Explain with suitable program.

18. Explain about the Project properties window.

19. How table is created and records are inserted in Visual Studio? Explain with simple program.

20. Write a C# program using the Data grid to show, update and delete items multiple rows and columns.

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31331

DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, DECEMBER 2019.

Third Semester

Information Technology

OPEN SOURCE SOFTWARE

(CBCS – 2018 – 19 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1.   What is the need for open source?

2.   Define: Signal.

3.   What is MySQL?

4.   What is the relationship between MySQL and Web?

5.   List out the logical operators in PHP.

6.   Define: Function in PHP.

7.   How to declare and initialize a variable in Python? Give examples.

8.   How is a list different from a tuple?

9.   What Does "Perl" Stand for?

10. Distinguish between scalar and array in Perl.

PART B — (5 × 5 = 25 marks)

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

11. (a)   What is a process? Explain about the state diagram of a process.

Or

(b)   Explain about the cloning in Linux.

12. (a)   Explain the features of MYSQL.

Or

(b)   Explain about the INSERT, SELECT and UPDATE commands in MYSQL.

13. (a)   What are the comparison operators available in PHP? Give examples.

Or

(b)   Write a PHP program to find the factorial of a given number.

14. (a)   What are the data types of Python? Explain.

Or

(b)   Write a Python program to check whether a string is a palindrome or not.

15. (a)   What are input and output statements in Perl? Explain.

Or

(b)   Explain how can you manipulate files and directories.

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PART C — (3 × 10 = 30 marks)

Answer Any THREE Questions.

16. What are the three different scheduling policies? Explain.

17. Discuss in detail about strings, date and time and sorting in MySQL.

18. Explain any ten PHP array functions.

19. Describe any three control statements of Python with examples.

20. Discuss about the package and module in Perl.

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31332

DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, DECEMBER 2019.

Third Semester

OPERATING SYSTEMS

(CBCS – 2018-19 Academic year onwards)

Time : Three hours   Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions

1. Write down the objective of Multiprogramming.

2. Differentiate internal and external fragmentation.

3. What is an Interrupt vector?

4. What are the Scheduling Criteria?

5. Draw a Schematic view of a Monitor.

6. Write the importance of IPC.

7. Why do we need a deadlock – avoidance algorithm?

8. Define Paging.

9. What is Sequential – Access method?

10. What are the methods of implementing a directory?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions

11. (a) Explain the operating system operations.

Or

(b) Describe the concept of file management?

12. (a) What are the Process State? Explain with an diagram.

Or

(b) Illustrate the concept of Preemptive Scheduling.

13. (a) What is binary Semaphores? How to implement it?

Or

(b) When does a deadlock Situation arise?

14. (a) Explain the concept of Fragmentation.

Or

(b) What do you mean by Hierarchical paging? Explain with neat diagram?

15. (a) List out any explain the various common file types.

Or

(b) What are the types of Access Methods? Explain briefly.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. What are the problems that you can face when designing and implementing a system? Explain.

17. Describe the concept of Naming in detail.

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18. Explain in detail about Synchronization Hardware.

19. Discuss about Contiguous Memory Allocation.

20. What is free-space Management? Explain.

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31333

DISTANCE EDUCATION

M.Sc.(IT) DEGREE EXAMINATION, DECEMBER 2019.

Third Semester

Information Technology

COMPUTER NETWORKS

(CBCS 2018–19 Academic year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What do you mean by Network topology?

2. Define UTP.

3. What is known as Harming distance?

4. Define : Stop–and–wait protocol.

5. Differentiate Adaptive and Nonadaptive algorithms.

6. What are the other names of Distance Vector routing algorithm?

7. Name of two main transport layer protocols.

8. Define SNMP.

9. What is the Oldest known Ciphers?

10. What is known as Authentication?

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Discuss the uses of computer Networks.

Or

(b) Write short note on wireless Networks.

12. (a) Elucidate the purpose of an unrestricted simplex protocol.

Or

(b) Give a brief note on ALOHA.

13. (a) Write the comparison of virtual circuit and Datagram subnets.

Or

(b) Explain about Hierarchial routing.

14. (a) Discuss shortly about Transport service primitives.

Or

(b) What is process to process delivery? Discuss it.

15. (a) Explain about security services.

Or

(b) What is Traditional Cryptography? Explain.

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PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe in detail about the OSI reference model.

17. Illustrate the Error detecting and correcting codes.

18. Write a detailed note on shortest path routing algorithm.

19. Describe in detail about RPC.

20. Explain about symmetric key Cryptography.

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DISTANCE EDUCATION

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

First Semester

COMPUTER ORGANIZATION AND ARCHITECTURE

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1.   What are basic properties of Boolean algebra?

2.   What is a karnaugh map?

3.   Define bus.

4.   What is mean by arithmetic logic shift unit.

5.   Define instruction cycle.

6.   What are the different types addressing modes.

7.   Briefly explain priority interrupt.

8.   What is mean by asynchronous data transfer.

9.   Comment on Virtual memory.

10.   Define DMA.

PART B — (5 × 5 = 25 marks)

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

11. (a) What are Flip-Flops? Explain.

Or

(b) Explain about multiplexer.

12. (a) Explain the four condition of RS Flip-Flop.

Or

(b) Write short notes on register transfer.

13. (a) Discuss about register.

Or

(b) What is an Addressing Mode?

14. (a) Explain Peripheral Devices with example.

Or

(b) Write down Hardware implementation for multiplication operation.

15. (a) Write short notes on memory hierarchy.

Or

(b) Sketch the block diagram of associative memory.

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PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. What are universal gates? Explain with truth table.

17. Give the hardware implementation for signed magnitude data.

18. Give detail note on stack organizations.

19. Design the flowchart for addition and subtraction of bfloating-point numbers with an example.

20. Explain how the auxiliary memory.

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DISTANCE EDUCATION

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

First Semester

OBJECT ORIENTED PROGRAMMING AND JAVA

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours　　　　　　　　Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. List out various benefits of OOPs.

2. Define Java Support Systems.

3. Give a note on Wrapper Classes.

4. What is meant by constructors?

5. Comment on Multithreading.

6. Define Synchronization.

7. What is Applet tag?

8. List out various types of errors.

9. Comment on I/O Class.

10. Define Random Access File.

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain about Tokens and Java Statements.

Or

(b) Write a java program to implement looping statements.

12. (a) Describe Method overloading in Java.

Or

(b) Write a note on Enumerated Types.

13. (a) Explain about creating a thread.

Or

(b) Discuss about Life cycle of a thread.

14. (a) How to throw our own exceptions? Explain with example.

Or

(b) How to draw Bar charts in Applet?

15. (a) Write about Byte Stream Classes.

Or

(b) Discuss about Reading/writing characters in Java.

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PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss various operators in Java.

17. Illustrate on Inheritance and its types.

18. How to implementing the Runnable Interface? Explain with example.

19. Explain about Applet Life cycle.

20. Discuss in detail about Input / Output Exceptions.

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	31313

DISTANCE EDUCATION

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

First Semester

DATA STRUCTURES AND ALGORITHMS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1.   What is meant by Data Structure?

2.   Define Primitive Data types.

3.   List out various applications of Queues.

4.   Comment on Circular Queue.

5.   What is Binary Tree?

6.   Define Hashing Techniques.

7.   What is Complete Binary Tree?

8.   Comment on Searching.

9.   Write about Bubble Sort.

10.   Define Sorting.

PART B — (5 × 5 = 25 marks)

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

11. (a) Write about Array and Initialization of Array.

Or

(b) Explain various types of data structures.

12. (a) What is Queue? Explain various operation of Queue.

Or

(b) Write a note on representation of linked list.

13. (a) How to perform insertion and deletion operation in Binary Tree?

Or

(b) Explain about Binary Tree traversals.

14. (a) Briefly explain various types of Searching.

Or

(b) What is Linear Search? Explain with example.

15. (a) Explain about Insertion Sort.

Or

(b) Write a note on Tree Sort.

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PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss about One dimensional array and its representation.

17. Explain about Stack and its implementation.

18. Illustrate on Binary Search Tree.

19. How to sorting elements using Linear Search? Explain with example program.

20. Which sorting algorithm is best? Justify with example.

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DISTANCE EDUCATION

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

Second Semester

DATA MINING AND WAREHOUSING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1.   What ia data cleaning?

2.   List out the use of data pre-processing.

3.   Define AR algorithms.

4.   Define classification.

5.   What do you meant by K-Means algorithm?

6.   List out the uses of Neural Networks.

7.   Why we need Web mining?

8.   What is knowledge mining?

9.   List out various types of big data.

10. Define Hadoop.

PART B — (5 × 5 = 25 marks)

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

11. (a) Describe data warehouse server.

Or

(b) How do you use data transformation in data mining?

12. (a) Explain about the pincher search algorithm.

Or

(b) Discuss about the decision tree classification.

13. (a) Describe about hierarchical clustering.

Or

(b) Elucidate the supervised learning.

14. (a) Give a note on spatial mining.

Or

(b) Discuss about the Weka.

15. (a) Discuss about the technologies available for big data.

Or

(b) List out the core Hadoop components.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain different forms of knowledge.

17. Discuss about classification by Back Propagation.

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18. Elaborate the STIRR and ROCK.

19. Write a note on Text clustering and temporal mining.

20. Compare Traditional versus Big data approach.

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		31322

DISTANCE EDUCATION

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

Second Semester

RELATIONAL DATABASE MANAGEMENT SYSTEM
(RDBMS)

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1.   Define Database System.

2.   List out the features of ER Model.

3.   What is meant by integrity constraint?

4.   Write a note on selection operation.

5.   Give any 2 basic SQL queries.

6.   What is aggregative Operators?

7.   Outline the atomicity and durability.

8.   Define multiple granularity.

9.   What is file organization and indexing?

10.   Define B+ trees.

PART B — (5 × 5 = 25 marks)

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

11. (a) Compare database system and file system.

Or

(b) Elaborate on database design and ER diagrams.

12. (a) Illustrate on querying relational data.

Or

(b) Explain about projection operations with example.

13. (a) Explain nested queries with example.

Or

(b) Elaborate logical connectivity's with example.

14. (a) Outline the transaction concept.

Or

(b) Elaborate on lock based protocols.

15. (a) Compare the cluster, primary and secondary indexes.

Or

(b) Elaborate on free base indexing.

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PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain about database languages and DDL with examples.

17. Elaborate various joins in relational algebra with example.

18. Demonstrate the first, second and third normal forms.

19. Elaborate time stamp protocols.

20. Illustrate the ISAM.

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DISTANCE EDUCATION

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

Second Semester

VISUAL PROGRAMMING WITH .NET

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is Visual Studio?

2. Describe Share Point Projects.

3. Illustrate Main Method.

4. How do you create a code snippet?

5. Define Delegates.

6. Write about Startup object.

7. What is use of Breakpoints?

8. Define Foreign Keys.

9. What are layouts in WPF?

10. Mention the uses of DataGrid.

PART B — (5 × 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 notes on Design Concepts

Or

(b) List out various steps for Interface Design.

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

Or

(b) Explain various metrics for measurement.

15. (a) Comment on Software Risks.

Or

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

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss about Visual Studio Project Types.

17. Illustrate Loops in visual studio with example.

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18. How use arrays and generics in visual studio?

19. Briefly explain debugging methods in visual studio with example.

20. How to deploy web services with WCF?

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DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION, DECEMBER 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.   Write basic concepts in Linux.

2.   Define Signals.

3.   How do you access a string in SQL?

4.   Define Sequence.

5.   How to declare variables in PHP?

6.   Mention various modes of open ( ) function.

7.   What is called Dictionaries?

8.   Define Exceptions.

9.   How to modify variables in Perl?

10. What is called Modules?

PART B — (5 × 5 = 25 marks)

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

11. (a)   Write a note on Kernel Mode.

Or

(b)   Explain about Personalities in Linux.

12. (a)   How do you terminating account in SQL?

Or

(b)   Write a note on Generating Summary in SQL.

13. (a)   Write a PHP program to find Armstrong numbers.

Or

(b)   Comment on PHP Templates.

14. (a)   Give brief notes on Sequences in Python.

Or

(b)   Write a Python program to find the size of a dictionary.

15. (a)   Comment on Subroutine.

Or

(b)   Demonstrate IF Statement using Perl.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Briefly explain about various advanced concepts in Linux.

17. Comment on Working with strings in SQL.

18. Demonstrate Error handling in PHP.

19. Write a Python program to build flashcard using class in python.

20. Discuss about working of files in Perl.

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Sub. Code
31332

DISTANCE EDUCATION

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

Third Semester

OPERATING SYSTEMS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1.   Define Operating Systems.

2.   List out various types of OS.

3.   What is Process?

4.   Comment on Scheduler.

5.   What is synchronization?

6.   Define deadlock recovery.

7.   Comment on Semaphore.

8.   What is memory allocation?

9.   Define Mass Storage structure.

10. What is meant by Directory?

PART B — (5 × 5 = 25 marks)

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

11. (a)   Explain various operations of operating system.

Or

(b)   Write a note on OS Services.

12. (a)   Give a short note on inter process communication.

Or

(b)   Briefly explain about Scheduling criteria.

13. (a)   Write a note on Deadlock characterization.

Or

(b)   Explain about Deadlock prevention.

14. (a)   Give a short note on contiguous memory allocation.

Or

(b)   Write a note on Segmentation.

15. (a)   Briefly explain about File sharing and protection.

Or

(b)   How Disk scheduling performed in OS?

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Illustrate on Operating System Structure.

17. Discuss various operation on processes.

18. Explain various methods for handling deadlocks.

19. How paging works in operating system?

20. Discuss about File system structure and implementation.

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	31333

DISTANCE EDUCATION

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

Third Semester

COMPUTER NETWORKS

(CBCS 2018-19 Academic Year onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1.   Why we need wireless network?

2.   List the use of WAN.

3.   Define framing.

4.   What is ARQ?

5.   What do you mean by static routing?

6.   Define broad cast.

7.   Why we need TCP?

8.   Expand HTTP and define.

9.   What is Encryption?

10.   Define AES.

PART B — (5 × 5 = 25 marks)

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

11. (a) List out the application of Computer networks.

Or

(b) Elaborate the transmission media.

12. (a) Illustrate the Cyclic Redundancy Check.

Or

(b) Discuss about ALOHA.

13. (a) Describe about the shortest path routing.

Or

(b) Explain control algorithms.

14. (a) Write a note on file transfer.

Or

(b) Elaborate the remote file access.

15. (a) Elucidate the cryptography.

Or

(b) What is the use of security services? Explain.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Illustrate the analog and digital signals performance.

17. Evaluate about selective - repeat ARQ.

18. Explain in detail about distance vector routing.

19. Discuss about the following: (a) WWW (b) SNMP.

20. Describe about the cryptographic principles with details.

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D–2226

DISTANCE EDUCATION

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

Fourth Semester

WEB TECHNOLOGY

(CBCS 2018-2019 Academic Year onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is the tag used for changing the font name in HTML?

2. List out various features of XML?

3. What are the three tags used in JSP bean development?

4. Mention the roles in EJB.

5. What is servlet?

6. Mention the role and responsibility of Http request method.

7. Define Java Server Pages.

8. How to deal with syntax errors in JSP page?

9. What is JDBC in Java?

10. Mention the components of Struts Framework.

PART B — (5 × 5 = 25 marks)

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

11. (a) In HTML, mention the steps carried out to insert an image and an alternate text for the same.

Or

(b) Give a short note on the XML structure.

12. (a) What are the steps to be followed in creating a new Bean?

Or

(b) What is EJB life cycle? Describe it with suitable diagram.

13. (a) Explain the life cycle of servlet.

Or

(b) What is session tracking? Explain the way of handling session in servlet.

14. (a) Write a JSP program to design Employee registration form.

Or

(b) Explain about sharing session.

2 **D–2227**

15. (a) Bring out the various classes used in JDBC extension API used in Java.

Or

(b) Give a brief account on JDBC architecture.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. What is table in HTML? Create table in HTML using HTML tags and Format table with HTML tags.

17. Discuss about Bean Introspection in detail.

18. Explain in detail about Servlet API and javax.servlet package.

19. Discuss in detail about (a) problems with Servlets (b) Anatomy of JSP Page.

20. Write a JSP program to connect MS Access database.

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DISTANCE EDUCATION

M.Sc.(Information Technology) EXAMINATION,
DECEMBER 2023.

Fourth Semester

SOFTWARE ENGINEERING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1.   What are the characteristics of the software?

2.   Can you able to list out various approaches in process assessment?

3.   What is called Thumb rule?

4.   Comment on Preliminary use case diagram.

5.   Define a term Information Hiding.

6.   Why is Architecture Important?

7.   Write short note on black box testing.

8.   Define Cohesion.

9.   Describe a Risk Refinement.

10. What is Quality?

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain about Layered Technology.

Or

(b) How you assess the process?

12. (a) Write a tasks of requirement engineering.

Or

(b) How to create a Behavioral Model?

13. (a) Comment on Data Design.

Or

(b) How to evaluate user interface design?

14. (a) Write test strategies for Object-Oriented Software.

Or

(b) Mention metrics for Software Quality and Software Process.

15. (a) Compare Reactive vs. Proactive Risk Strategies.

Or

(b) Comment on Software Reviews.

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PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Comment on Process Patterns.

17. Illustrate Flow-Oriented Modeling.

18. Briefly explain the design models.

19. Mention the various metrics for Analysis model, Design model and Measurement.

20. Review on Quality Management.

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DISTANCE EDUCATION

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

Fourth Semester

CLOUD COMPUTING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1.   List down the pros and cons of cloud service development.

2.   Write down the types of cloud service development.

3.   Define collaboration on group projects.

4.   Explain the computing for corporation.

5.   Elaborate the collaborating on word procession.

6.   Explain the collaboration on contact management.

7.   List out the overview of cloud storage.

8.   Write about software as a security service.

9.   Comment on open nebula.

10. List the importance of nimbus tool.

SECTION B — (5 × 5 = 25 marks)

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

11. (a) Explain the Cloud computing.

Or

(b) Elaborate the developing of cloud services.

12. (a) Elaborate how to collaborate schedules.

Or

(b) Explain collaborating on group projects and events.

13. (a) Explain how to explore the online scheduling applications?

Or

(b) Explain the exploring online planning and task management.

14. (a) Outline the security in cloud.

Or

(b) Elaborate on Map reduce.

15. (a) Illustrate the tool — Nimbus.

Or

(b) Elaborate on open nebula tool.

2 **D–2229**

SECTION C — (3 × 10 = 30 marks)

Answer ANY THREE questions

16. Elaborate discovering cloud services development service and tools.

17. Elaborate the communicating across the community.

18. Explain the collaboration on project management.

19. illustrate the Amazon S3.

20. Demonstrate the tool - nimbus.

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D–1466

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31311

DISTANCE EDUCATION

M.Sc. (Information Technology)
DEGREE EXAMINATION, MAY 2019.

First Semester

COMPUTER ORGANIZATION AND ARCHITECTURE

(CBCS – 2018 – 19 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is sequential circuit?

2. What is Encoder?

3. Draw the graphic symbol of three–state buffer.

4. Illustrate the mask operation.

5. What is effective address?

6. Classify the computer instructions.

7. What is biased exponent?

8. What is the disadvantage of strobe control method?

9. Define : Hit Ratio.

10. What is virtual address?

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) State and prove Demorgan's theorem.

Or

(b) Describe the working principle of SR flip–flop.

12. (a) Construct a 4 – bit adder – subtractor and explain.

Or

(b) Draw one stage of logic circuit and explain.

13. (a) Demonstrate the direct and indirect address.

Or

(b) Describe the Register stack organization.

14. (a) Compare Isolated I/O with memory–mapped I/O.

Or

(b) How CPU and IOP communicated each other?

15. (a) Write about memory hierarchy.

Or

(b) Describe the hardware unit associated with the memory.

2 **D–1466**

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16.   What are Multiplexers? Explain with an example.

17.   Explain how the numbers are represented in fixed–point representation.

18.   Describe the different types of addressing modes.

19.   Explain the addition and subtraction algorithm of signed magnitude data.

20.   Describe the organization of Associative memory and explain its match logic.

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3   **D–1466**

D–1467

DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2019.

First Semester

Information Technology

OBJECT ORIENTED PROGRAMMING AND JAVA

(CBCS – 2018 – 19 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1.   Write the process of building and running Java application programs.

2.   What is the procedure of Arithmetic operators?

3.   Write the usage of wrapper classes.

4.   What are the frequently used API packages.

5.   Write the syntax of set Priority ( ) method.

6.   How to start a new thread?

7.   Write down the exception handling mechanism.

8.   How to add Applet to HTML file?

9.   Write the functions performed by the Input stream clan.

10. Name any two stream classes.

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Discuss shortly about Java environment.

Or

(b) Explain the various forms of IF statement with examples.

12. (a) Illustrate the concept of inheritance with an example.

Or

(b) Discuss the various levels of access protection available for packages and their implications.

13. (a) Write a program in Java to create threads using the thread class.

Or

(b) Give a brief note on synchronization.

14. (a) How to use exceptions for debugging? Discuss it.

Or

(b) Write a short note on graphics class.

15. (a) Describe the functions of file class.

Or

(b) Write statements to create a file stream that concatenates two existing files.

2 **D–1467**

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the various types of operators used in Java.

17. Write a program in Java to illustrate the application of single inheritance.

18. Write a program to illustrate the use of yield( ), sleep ( ) and stop ( ) methods.

19. Discuss in detail about the Applet life cycle.

20. Write a program to create a sequential file that could store details about the students.

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3   **D–1467**

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	31313

DISTANCE EDUCATION

M.Sc. (Information Technology)
DEGREE EXAMINATION, MAY 2019.

First Semester

DATA STRUCTURES AND ALGORITHMS

(CBCS – 2018 – 19 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1.   What do you mean by performance analysis of an algorithm?

2.   Consider the 25 × 4 matrix array a. Base (A) = 200, w = 4. Find the address of A [1, 2, 3] in row major order.

3.   Give any two applications of stack.

4.   What is circular queue?

5.   Express the following expression in the form of tree $(a - b)/((c * d) + e)$.

6.   Give the maximum number of nodes on level i of a binary tree.

7.   What is the order of radix sort?

8.   What is the average and worst case of bubble sort?

9.   Write the advantages of binary search.

10. Write the advantages of circular list over singly linked list.

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a)   Describe the different types of data structure.

Or

(b)   How are dimensional array is represented?

12. (a)   What are the operations that can be performed on stack? Explain.

Or

(b)   Write an algorithm to add an element in a queue.

13. (a)   Write an algorithm for in order traversal.

Or

(b)   Describe the deletion operation on binary tree.

14. (a)   Describe the procedure for linear search.

Or

(b)   What is recursive? Write the recursive procedure which returns the nth fibonacci number.

15. (a)   Describe the insertion sort procedure.

Or

(b)   Illustrate the selection sort.

2   **D–1468**

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Classify the rate of growth of an algorithm and explain.

17. Write an algorithm for polynomial addition using linked list and explain.

18. Describe the different ways of representing the binary tree in memory.

19. Write a procedure to search a given element in an array using binary search and explain.

20. With an example, explain the radix sort procedure.

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D–1469

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31321

DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION, MAY 2019.

Second Semester

DATA MINING AND WAREHOUSING

(CBCS 2018 – 2019 Academic year onwards)

Time : Three hours   Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define the term "Data Warehouse".

2. What are the two fundamental goals of Data Mining?

3. Define a frequent set.

4. What is an association rule?

5. Define: Genetic Algorithm.

6. What is clustering?

7. How do you distinguish spatial mining from temporal mining?

8. Write down any two features of Matlab.

9. What is Big Data? Give an example.

10. What are the main goals of Hadoop?

SECTION B — (5 × 5 = 25 marks)

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

11. (a) What are the basic OLAP operations for a multidimensional model? Explain.

Or

(b) Explain the different forms of knowledge.

12. (a) Discuss the importance of discovering association rules.

Or

(b) Explain about the Bayesian classification.

13. (a) Describe the working of the PAM algorithm. Compare its performance with CLARA arid CLARANS.

Or

(b) What is neural network? Explain the uses of neural network?

14. (a) How is web usage mining different from web structure mining and web context mining?

Or

(b) Explain about the spatial mining tasks.

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

Or

(b) Compare traditional data warehouse approach and Big Data approach.

2 **D–1469**

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16.   Discuss about the data warehousing architecture.

17.   Explain the working of the Pincer-search algorithm.

18.   Describe the working of the DBSCAN algorithm.

19.   Explain the principles underlying text clustering.

20.   What are the components of Hadoop? Explain.

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D–1469

D–1470

Sub. Code
31322

DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2019.

Second Semester

Information Technology

RELATIONAL DATABASE MANAGEMENT SYSTEMS
(RDBMS)

(CBCS – 2018 – 19 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1.   Define DBMS.

2.   What do you mean by transaction?

3.   Write down the attributes of the relation.

4.   What is a domain variable?

5.   What are the syntax of a basic SQL query?

6.   Define Multi valued Dependencies.

7.   What is a Serializable schedule?

8.   List out the Timestamp Based Protocols.

9.   What do you mean by Primary and Secondary Indexes?

10. What are the characteristics of a B+ tree?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain the architecture of a DBMS with diagram.

Or

(b) Describe when we need participation constraints.

12. (a) What are the standard operations on sets? Explain.

Or

(b) How can you express certain kinds of queries by using the division operator?

13. (a) Discuss the specification of complex integrity constraints in SQL.

Or

(b) Write a short note on closure of a set of FDs.

14. (a) Explain the Two–phase Locking Protocol.

Or

(b) What do you mean by Database Buffering? Explain.

15. (a) Describe Hash–Based Indexing with a diagram.

Or

(b) Explain the structure of a B+ Tree.

2 **D–1470**

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss the database design process in detail.

17. How can you destroying altering tables and views? Explain in detail.

18. Explain the need for a schema refinement in database design.

19. Describe the concept of multiple Granularity.

20. Explain the Indexed sequential access method in detail.

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DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION,
MAY 2019.

Second Semester

Information Technology

VISUAL PROGRAMMING WITH .NET

(CBCS 2018 – 2019 Academic year onwards)

Time : Three hours   Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is IDE?

2. What is the use of solution explorer window?

3. Define: Main method in C#.

4. What is the use of an enum?

5. Define the term "Event".

6. What is icon?

7. What is the use of breakpoints?

8. Distinguish between locals and autos windows.

sp1

9.   What is windows presentation foundation?

10.   What is the data binding?

        SECTION B — (5 × 5 = 25 marks)

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

11. (a)   Write down the features of Visual Studio

                    Or

     (b)   What are the windows type projects created for
           desktop applications? Explain.

12. (a)   What are the types of statements in VB? Explain.

                    Or

     (b)   How to create a class? Explain.

13. (a)   Explain the features of interfaces.

                    Or

     (b)   Write a -simple C# program to illustrate create and
           using an array.

14. (a)   What are the options from the breakpoint context
           menu? Explain.

                    Or

     (b)   What are step operations? Describe.

15. (a)   Explain the ComboBox properties for data binding.

                    Or

     (b)   Write down the uses of MVC objects.

                2   D–1471

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the different portion of the Visual Studio Start Screen.

17. What are parameter passing mechanisms? Explain.

18. Explain how to navigating a project with class view window.

19. Write a pregram to create a database for an employee.

20. What are the different layout controls? Discuss.

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3   D–1471

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 × 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.

2   **D–1545**

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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D–1545

D-1546		Sub. Code
		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 × 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?

D-1546

PART C — (3 × 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 × 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 × 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.

2   **D–1547**

SECTION C — (3 × 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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D-1548	Sub. Code
	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 × 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.

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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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D-1548

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 × 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 × 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.

D–1549

PART C — (3 × 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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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 × 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.

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SECTION C — (3 × 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.

2 **D–1551**

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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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 × 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 × 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 × 10 = 30 marks)

Answer any THREE questions.

16. Illustrate on Operating system structure.

17. Discuss various scheduling algorithms.

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18. Explain about Deadlock avoidance and detection.

19. Discuss about segmentation.

20. Explain Mass storage structure in detail.

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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 × 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.

2 **D–1553**

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.

2 **D–1554**

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 × 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 × 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.

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PART C — (3 × 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 × 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.

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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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	31311

DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2024.

First Semester

COMPUTER ORGANIZATION AND ARCHITECTURE

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1.   What is the purpose of digital computers?

2.   Define logic gates.

3.   Define combinational circuits.

4.   What are flip-flops used for in digital circuits?

5.   Explain the role of multiplexers in digital circuits.

6.   Define registers in the context of digital components.

7.   Describe the process of bus and memory transfers in register transfer.

8.   What are arithmetic microoperations in computer organization?

9.   What are the different instruction codes in computer organization?

10. Describe the role of computer registers.

PART B — (5 × 5 = 25 marks)

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

11. (a) Design a 4-to-16 line decoder using two 3-to-8 line decoders.

Or

(b) Explain the concept of a flip-flop and compare different types of flip-flops.

12. (a) Convert the decimal number 25 into binary, octal and hexadecimal representations.

Or

(b) Perform 2's complement arithmetic to subtract two signed binary numbers : 10110 – 01101.

13. (a) Explain the concept of a memory reference instruction and its components.

Or

(b) Design an instruction format for a hypothetical computer architecture with three address fields.

14. (a) Perform binary multiplication using the Booth's algorithm for the numbers 1101 and 1010.

Or

(b) Implement a division algorithm using restoring division for the numbers 101011 (quotient) and 1101 (divisor).

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15. (a) Compare the advantages and disadvantages of different memory hierarchies.

Or

(b) Discuss the concept of associative memory and its use in address translation.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the operation of a flip-flop and design a sequential circuit using flip-flops.

17. Describe the concept of register transfer language and design a register transfer circuit for a specific task.

18. Design a simple central processing unit (CPU) with specific register organization and addressing modes.

19. Discuss the input-output organization in computer systems.

20. Explain the concept of cache memory and discuss its role in improving system performance.

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DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2024.

First Semester

OBJECT ORIENTED PROGRAMMING AND JAVA

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1.   Define Object-Oriented Programming (OOP) and discuss its benefits.

2.   How does Java differ from C and C++? Highlight the features that make Java unique.

3.   Define Class.

4.   What is method overloading in Java?

5.   What is a thread in Java?

6.   What is the life cycle of a thread in Java?

7.   Define exceptions in Java.

8.   How do you handle multiple exceptions using the catch statement in Java?

9.   What are streams in Java?

10. How to read and write characters using Java I/O classes?

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain the concepts of inheritance in object-oriented programming and provide an example demonstrating single inheritance.

Or

(b) Discuss the significance of constructors in Java classes and explain the difference between default constructors and parameterized constructors.

12. (a) Define and explain the concept of encapsulation in Java.

Or

(b) Discuss the concept of interfaces in Java.

13. (a) Explain the difference between a process and a thread in Java.

Or

(b) Discuss the concept of thread synchronization in Java.

14. (a) Describe the purpose and functionality of Java exceptions.

Or

(b) Explain the concept of exception handling in Java.

2 **D–4497**

15. (a) Explain the concept of streams in java and discuss the difference between byte stream classes and character stream classes.

Or

(b) Describe the process of reading and writing characters to files in Java using the appropriate stream classes.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the role of Java applets and their life cycle in web development.

17. Implement a Java program that utilizes arrays, strings and vectors. Provide examples.

18. Discuss the advantages and challenges of multithreaded programming.

19. Design and implement a Java applet that utilizes graphics programming to create interactive visual elements.

20. Explain the advantages and limitations of random access files compared to other file handling methods.

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31313

DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2024.

First Semester

DATA STRCTURES AND ALGORITHMS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. Name the two main types of data structures.

2. Define primitive data types in programming.

3. Define an array.

4. Differentiate between one-dimensional and multi-dimensional arrays.

5. What is a Stack?

6. What are the advantages of circular queue?

7. Define binary trees and their types.

8. How are binary trees represented in memory?

9. What is linear search algorithm?

10. Define a bubble sort algorithm.

PART B — (5 × 5 = 25 marks)

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

11. (a) Describe the time and space complexity of algorithms. Compare the complexity of linear and binary search algorithms.

Or

(b) Discuss the different types of data types in programming.

12. (a) Implement a singly linked list and demonstrate the insertion and deletion of nodes.

Or

(b) Design a circular queue using an array and illustrate its implementation.

13. (a) Implement a hash table for storing string data and handle collisions using open addressing.

Or

(b) Compare and contrast Breadth-First Search and Depth-First Search algorithms.

14. (a) Implement binary search on a sorted array of characters and demonstrate its working.

Or

(b) Describe the process of using a hash table for searching and explain its advantages and disadvantages.

2 **D–4498**

15. (a) Design a program to perform insertion sort on a list of strings in alphabetical order.

Or

(b) Describe the process of radix sort algorithm with suitable example.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the importance of data structures in computer programming. Describe two different types of data structures and provide examples of each.

17. Design a program to implement a stack using an array. Discuss the operations of the stack and demonstrate its usage with suitable examples.

18. Illustrate a binary tree with nodes containing integer data. Perform different tree traversal methods on the tree.

19. Compare and contrast linear search and binary search algorithms. Provide examples and discuss their time complexities.

20. Develop a program to implement the bubble sort algorithm. Analyze its time complexity and discuss its advantages and limitations in sorting large datasets.

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DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION, MAY 2024.

Second Semester

DATA MINING AND WAREHOUSING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is OLAP?

2. List out various of data.

3. Define association rule mining.

4. What is back propagation?

5. List the use of clustering.

6. Define the unsupervised learning.

7. Why we need text mining?

8. List out various tools of data mining.

9. What do you mean by big data analytics?

10. What is Hadoop?

PART B — (5 × 5 = 25 marks)

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

11. (a) Elucidate the data warehouse schema.

Or

(b) How do you use data cleaning in data mining?

12. (a) Evaluate the methods to discover association rule.

Or

(b) Discuss about the Bayesian classification.

13. (a) Describe about categorical clustering algorithms.

Or

(b) Elucidate the machine learning.

14. (a) Give a note on web structure mining.

Or

(b) Discuss about knowledge mining.

15. (a) Explain various types of big data.

Or

(b) List out the Hadoop limitations.

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PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Elucidate the data warehousing architecture.

17. Evaluate the FP tree growth algorithm.

18. Give an account on working of Genetic algorithm.

19. Write a note on Weka and Rapid Miner.

20. Explain about the physical architecture of Hadoop.

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DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION, MAY 2024.

Second Semester

RELATIONAL DATABASE MANAGEMENT SYSTEM
(RDBMS)

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1.   Outline the ER model.

2.   What is meant by relational model?

3.   Define logical database design.

4.   Write a note on tuple relational calculus.

5.   Define rules for 1NF.

6.   What is lossless join decomposition?

7.   Summarize the testing for serializability.

8.   Explain buffer management.

9.   Define index data structures.

10. Outline the tree based indexing.

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain database system structure.

Or

(b) Summarize about relationships and relationship sets.

12. (a) Demonstrate the altering tables.

Or

(b) Explain domain relational calculus.

13. (a) Explain the schema refinement in database design.

Or

(b) Explain logical connectivity's with example.

14. (a) Explain the serializability and recoverability.

Or

(b) Explain log based recovery.

15. (a) Elaborate hash based indexing.

Or

(b) Explain dynamic index structure.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain about storage manager and query processor.

17. Elaborate the views and altering views with example.

2 D–4500

18. Demonstrate the sql triggers and active databases.

19. Elaborate lock based protocols.

20. Illustrate the index data structure and tree base indexing.

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D–4501

DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION,
MAY 2024.

Second Semester

VISUAL PROGRAMMING WITH .NET

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1.   Write about StatusBar.

2.   What is standard toolbar in Visual Studio?

3.   List out primitive types in C#.

4.   Define Inheritance.

5.   What is called Events?

6.   Write about Default Namespace.

7.   List out the uses of immediate window.

8.   Define Tables.

9.   Write about DockPanel Layout in WPF.

10.   Define Data Source.

PART B — (5 × 5 = 25 marks)

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

11. (a)   Write a short note on Toolbar in Visual Studio.

            Or

     (b)   Explain about Web Projects.

12. (a)   Demonstrate IF-Else Statement using C#.NET

            Or

     (b)   Write a short note on Declaring and using
            Properties in Visual Studio.

13. (a)   Comment on Delegates.

            Or

     (b)   Describe on Target Framework.

14. (a)   What is called the Call Stack Window? Explain it.

            Or

     (b)   Write about Server Explorer.

15. (a)   How to Configure ComboBox using WPF Controls?

            Or

     (b)   Write steps to design Silverlight applications.

            PART C — (3 × 10 = 30 marks)

            Answer any THREE questions.

16. Briefly explain about menus in visual studio.

17. How to create classes in C#.NET? Explain it.

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18. Comment on Compiling Applications and Rebuilding Projects.

19. How to create database in visual studio? Give an example.

20. Demonstrate use of DataGrid with example application.

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D–4502

DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2024.

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 the questions.

1.   List out the logical operators in PHP.

2.   Difference between list and tuple.

3.   Expand Perl.

4.   What is a subroutine?

5.   Write the syntax for SELECT command in SQL.

6.   How do you define a function in Python?

7.   List few packages in Perl.

8.   How you create and use array in PHP?

9.   List the features of open source software.

10. Describe about conditional operators in Perl.

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain how to manipulate files and directories.

Or

(b) Explain the features of MYSQL.

12. (a) What is open source? List the advantages of open source.

Or

(b) Illustrate how to add and edit records in MYSQL.

13. (a) Write a Python program to check if the input year is a leap year or not.

Or

(b) Describe about different types of loops in Perl with example.

14. (a) How will you handle files in PHP? Explain.

Or

(b) Explain about Dictionaries in Python.

15. (a) Explain debugging and error handling features in PHP.

Or

(b) What is a subroutine? How do you create subroutine in python?

2 **D–4502**

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the operation cloning and signaling in Linux.

17. Describe the concept of record selection technology with a suitable example.

18. Illustrate the way to create PHP connectivity with SQL database.

19. Discuss about the package and module in Perl.

20. Explain about conditional and loop structures in python.

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DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2024.

Third Semester

OPERATING SYSTEMS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. Define Operating System.

2. What are the main components of the Computer System Architecture?

3. Define Process Concept.

4. What is the significance of Process Scheduling?

5. Define Semaphores.

6. What is the Critical Section Problem?

7. Define Swapping and Paging in Memory Management.

8. Define Contiguous Memory Allocation.

9. List the main components of File System.

10. What are the different Access methods used to access files in an Operating System?

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain the concept of Operating System Operations.

Or

(b) Discuss the key functions of an Operating System and how they contribute to the smooth operation of a computer system?

12. (a) Discuss the advantages and disadvantages of using multiple processors for process scheduling in a multi-core system.

Or

(b) What is Process Scheduling? Compare different process scheduling algorithms.

13. (a) Explain the role of Synchronization Hardware in an OS and how it aids in process coordination?

Or

(b) Compare and contrast the classic problems of synchronization.

14. (a) Compare the advantages and disadvantages of contiguous Memory Allocation and Paging.

Or

(b) Explain the concept of Segmentation and its implementation in an OS.

2   **D–4503**

15. (a) Define the File Concept and the different access methods used in file management.

Or

(b) Compare and contrast the different File Allocation methods.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain the structure of an Operating System and the role of each component in managing computer resources.

17. Describe the concept of Inter-Process Communication and the various mechanisms used for it.

18. Analyse the critical section problem and its solution using semaphores and monitors.

19. Explain how memory Scheduling algorithms work and their significance in improving system performance.

20. Explain the directory structure and file system mounting process in detail.

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Sub. Code
31333

DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2024.

Third Semester

COMPUTER NETWORKS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. Define Computer Networks.

2. Differentiate between LAN, MAN and WAN in terms of coverage.

3. Define cyclic redundancy check.

4. What is the significance of data link layer?

5. Define circuit switching.

6. What is packet switching?

7. Define UDP and TCP in process-to-process delivery.

8. What is the key functioning of transport layer?

9. Define cryptography.

10. What is encryption?

PART B — (5 × 5 = 25 marks)

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

11. (a) Compare half-duplex and full-duplex transmission modes and their applications in network communication.

Or

(b) Describe the role of repeaters, hubs, bridges and switches in network communication.

12. (a) Explain the concept of multiple access protocols.

Or

(b) Discuss the role of MAC addresses in data link layer.

13. (a) Describe the functions of the network layer in routing and forwarding packets.

Or

(b) Compare and contrast static routing and dynamic routing algorithms.

14. (a) Explain the role of port numbers in transport layer addressing.

Or

(b) Describe the process of establishing and terminating a TCP connection using three-way handshake.

15. (a) Discuss the basic principles of cryptography.

Or

(b) Describe the concept of public-key infrastructure (PKI).

2 **D–4504**

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe the various types of transmission media used in computer networks and compare their performance characteristics.

17. Compare and contrast stop-and-wait protocol and sliding window protocol for flow and error control.

18. Explain about circuit switching, packet switching, and message switching.

19. Explain the differences between UDP and TCP in terms of connection-oriented vs. connectionless services, reliability and error recovery mechanisms.

20. Describe the principles of symmetric key cryptography.

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D–4504

DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2024.

Fourth Semester

WEB TECHNOLOGY

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. List three common HTML tags.

2. Explain the role of Cascading Style sheets (CSS) in web design.

3. Define Java Beans and list some of its advantages.

4. Explain the purpose of Bound properties in Java Beans.

5. Describe the lifecycle of a Servlet.

6. What are the core packages provided by Javax.servlet?

7. Describe Java Server Pages.

8. Describe the anatomy of a JSP page.

9. How does JDBC facilitate database programming in Java web applications?

10. Discuss the use of javax.sql*package.

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain the basic structure of an HTML document.

Or

(b) Discuss the advantages of using Cascading Style Sheets (CSS) to control the presentation of a website.

12. (a) Describe the concept of introspection in Java Beans.

Or

(b) Explain how to enables tools to analyze and manipulate beans at runtime.

13. (a) Illustrate the steps to design Servlet-based web application that allows users to upload images and store them on the server.

Or

(b) Explain the lifecycle of a Servlet.

14. (a) Discuss the purpose of JSP tags such as jsp:include, jsp:use Bean and jsp:set Property.

Or

(b) Compare the benefits of using Java Beans in JSP pages.

15. (a) Explain the role of JDBC in database access.

Or

(b) Discuss the advantages of using prepared statements over simple SQL statements in Java applications.

D–4505

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Compare and contrast Document Type Definition (DTD) and XML Schemas.

17. Analyze the significance of Bound properties and constrained properties in Java Beans.

18. Compare different session tracking mechanisms in web applications.

19. Discuss the benefits and drawbacks of using Java Server Pages (JSP) over traditional Servlets for developing web applications.

20. Explain the key components of the Struts framework.

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D–4505

DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2024.

Fourth Semester

SOFTWARE ENGINEERING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. Define Software.

2. Explain the Capability Maturity Model Integration (CMMI).

3. List requirement engineering tasks.

4. How do you validate software requirements?

5. Explain software architecture.

6. What is the design engineering process?

7. Compare unit testing and integration testing.

8. What is the art of debugging?

9. Differentiate proactive and reactive risk strategies.

10. Describe risk identification.

PART B — (5 × 5 = 25 marks)

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

11. (a) Discuss the role of software in modern computer systems and debunk common software myths.

Or

(b) Explain the capability Maturity Model Integration (CMMI) and its significance in software process assessment.

12. (a) Explain the requirement engineering tasks and the process involved in validating requirements.

Or

(b) Describe the different modeling techniques.

13. (a) Discuss the design process and quality in software engineering.

Or

(b) Explain the concepts of software architecture and data design in the architectural design phase.

14. (a) Compare and contrast different testing strategies.

Or

(b) Explain the process of black-box and white-box testing.

15. (a) Explain the differences between reactive and proactive risk strategies.

Or

(b) Describe the process of risk identification and risk projection.

2 **D–4506**

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss the different process models in software engineering.

17. Explain the steps involved in building an analysis model during requirement engineering.

18. Compare and contrast architectural design and user interface design.

19. Discuss the significance of software metrics and how they can be used to measure software quality and process domains.

20. Explain the concept of software quality assurance.

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DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2024.

Fourth Semester

CLOUD COMPUTING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. Define Cloud Computing.

2. What are the pros and cons of Cloud Computing?

3. Describe the collaboration on grocery lists using cloud computing.

4. How can cloud computing be used for centralizing email communications?

5. Explore the use of online calendar applications in cloud services.

6. How does cloud computing help in online planning?

7. Define federation.

8. What are the four levels of federation in cloud computing?

9. What are open-source cloud platforms?

10. Mention some examples of open-source cloud platforms.

PART B — (5 × 5 = 25 marks)

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

11. (a) Elaborate on the benefits and drawbacks of adopting cloud computing for businesses.

Or

(b) Explain the various types of cloud service development tools available and their applications.

12. (a) Discuss the significance of cloud computing in streamlining collaboration for household tasks.

Or

(b) Evaluate the role of cloud-based tools in managing household budgets and to-do lists.

13. (a) Discuss the importance of online word processing and database tools in collaborative environments.

Or

(b) Explain the advantages and disadvantages of using cloud-based project management platforms.

14. (a) Explore the concept of federation in cloud computing and its implications for data sharing.

Or

(b) What are the security challenges and measures required to safeguard sensitive data in the cloud?

15. (a) What are the key features and capabilities of Open Nebula for managing cloud infrastructure?

Or

(b) Write shorts on Amazon S3.

D–4507

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss the evolution of Cloud Computing and its impact on the modern IT landscape.

17. Analyze the challenges and benefits of centralizing email communications using cloud-based solutions.

18. Evaluate the role of online planning and task management tools in enhancing team collaboration.

19. Investigate the concept of federation in cloud computing and its potential impact on interoperability.

20. Compare and contrast the features of Eucalyptus and Nimbus as open-source cloud deployment platforms.

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D–4507