

**D-1536**

**Sub. Code**

**31311**

DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION, DECEMBER 2021.

First Semester

Information Technology

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. List the features of JK Flip-flop.
2. Write a note on Encoder and Decoder.
3. Define complement and its types.
4. What do you mean by weighted code?
5. Name the Registers in Computer organization.
6. Define Instruction cycle.
7. What are the components of Input-output Interface?
8. Why do we need Direct Memory Access?
9. What is memory interleaving
10. Define content addressable Memory.

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain the functionalities of Multiplexer.

Or

- (b) Compare combinational and sequential Circuits.

12. (a) Describe Fixed Point Representation.

Or

- (b) Explain about Logic Microoperation.

13. (a) Write any five Memory reference Instructions and explain each.

Or

- (b) What are the Data manipulation instructions? Explain.

14. (a) Narrate the concepts in Priority Interrupt.

Or

- (b) Write down the steps in Division Algorithm.

15. (a) Write short notes on Memory Management Hardware.

Or

- (b) Distinguish between Associative and Set Associative Mapping in cache Memory.

PART C — ( $3 \times 10 = 30$  marks)

Answer any THREE questions.

16. Describe function of Full Adder and Half Adder with Logic diagram.
  17. Explain the Shift Microoperation with suitable example.
  18. Narrate the features of Stack organization in CPU.
  19. Explain the steps involved in Multiplication Algorithm with a suitable example.
  20. Describe Virtual Memory. Illustrate its features in detail.
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**Sub. Code**

**31312**

DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION, DECEMBER 2021.

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. What is the role of Java Support System?
2. Is Java supports multiple inheritance? Justify.
3. What are final variables?
4. Compare vectors and arrays in Java.
5. Define error. What are its types?
6. When will you define package?
7. Mention the use of `'static'` keyword.
8. What do you meant by thread priority?
9. State the use of file class?
10. Name any two keyboard events.

PART B — (5 × 5 = 25 marks)

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

11. (a) Briefly explain about inline function? Give example.

Or

- (b) Write a java program to illustrate type conversion.

12. (a) Discuss about various Wrapper classes with example.

Or

- (b) Elucidate two uses of '*super*' keyword with suitable example.

13. (a) How applets differ from applications. Explain

Or

- (b) Write a java program to count the number of vowels for a given string.

14. (a) Sketch a neat diagram of various states of thread and explain.

Or

- (b) Write a Java program to define user defined function that check the age, if the age exceeds 18 then raise the exception "*Age greater than 18*"

15. (a) How will you read a text file myfile.txt in java using FileInputStream class.

Or

- (b) Write an applet program to draw and display car.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss in detail about various operators supported by Java.
17. How will you create and implement interface? Explain with simple java program.
18. Explain in detail about throw and throws clause with example.
19. Write a java program to illustrate finally keyword.
20. Discuss in detail about FileReader and FileWriter class to copy a text file.

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**31313**

DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION,  
DECEMBER 2021.

First Semester

DATA STRUCTURES AND ALGORITHMS

(CBCS 2018 – 19 Academic Year Onwards)

Time : 3 hours

Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What are the uses of algorithm?
2. What is linear data structure?
3. How to create circular linked list?
4. What are types of tree traversal?
5. Define siblings.
6. What is the use of hashing?
7. How binary search algorithm is best than linear search?
8. Define searching.
9. What are the uses of sorting?
10. Define swapping.

PART B — (5 × 5 = 25 marks)

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

11. (a) Write short notes on Space complexity of algorithm.

Or

- (b) Explain primitive and non-primitive data types in data structure.

12. (a) What are operations of queue? Explain with algorithms.

Or

- (b) Explain the differences between data types and data structure.

13. (a) Describe any one hashing technique with example.

Or

- (b) What is threaded binary tree? Explain its operations.

14. (a) Differentiate binary search and linear search algorithms.

Or

- (b) Describe the time complexity of searching algorithms.

15. (a) How radix sort works? Explain.

Or

- (b) Write the sorting algorithm for bubble sort.



PART C — ( $3 \times 10 = 30$  marks)

Answer any THREE questions.

16. What are non- linear data types? Explain with suitable example.
  17. How to delete or Insert a node in a linked list?
  18. Explain the various representations of Binary Tree in detail.
  19. How binary search algorithm works? Explain with suitable example.
  20. Explain the quick sort algorithm with example.
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**31321**

DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION,  
DECEMBER 2021.

Second Semester

DATA MINING AND WAREHOUSING

(CBCS 2018 – 19 Academic Year Onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define: Data Mart.
2. What are the types of data?
3. Define a border set.
4. What is a decision tree?
5. Define: Cluster Projection.
6. What are the uses of neural network?
7. What is the underlying principle of the Hidden web?
8. What is page rank?
9. How "Big" is Big Data?
10. Why do we need Hadoop?

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain about the star and snowflake schemas.

Or

- (b) Discuss the current trends affecting data mining.

12. (a) Discuss the concepts of frequent sets, confidence and support.

Or

- (b) Define a FP Tree. Explain the method of computing a FP Tree,

13. (a) Compare supervised and unsupervised learning.

Or

- (b) How is CLARANS different from CLARA? Illustrate this using an examples.

14. (a) What are the different types of web mining? Explain.

Or

- (b) What is Weka? Write down the features of weka.

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

Or

- (b) Explain the technologies available for Big Data.

PART C — ( $3 \times 10 = 30$  marks)

Answer any THREE questions.

16. Explain the different models of the warehouse server.
  17. Describe the working dynamic itemset counting technique.
  18. What is clustering? What are the different clustering techniques? Explain.
  19. Explain the essential features of temporal data and temporal inferences.
  20. Discuss the main components of HDFS and MapReduce.
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**31322**

DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION, DECEMBER 2021.

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 attributes.
2. Give an examples for participation constraint.
3. What is an entity set?
4. Write down the atomic formula.
5. What are the aggregate operations supported by SQL?
6. Define first Normal Form.
7. What is a locking protocol?
8. Why we need Buffer management?
9. What is a clustered index?
10. How to allocate pages in ISAM?

SECTION B — (5 × 5 = 25 marks)

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

11. (a) What is a data model? What is relational data model?

Or

- (b) Explain the concept of aggregation.

12. (a) What are the approaches to handling ISA hierarchie's by applying them to the ER diagram?

Or

- (b) Differentiate tuple relational calculus and domain relational calculus.

13. (a) How does SQL support set-comparison operators? Explain with an example.

Or

- (b) What are the problems caused by redundancy? Explain.

14. (a) Describe Thomas write Rule.

Or

- (b) What is Log-Record buffering? Explain.

15. (a) Explain Tree-Based indexing with a diagram.

Or

- (b) Describe the Intuition for tree indexes.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Why we need transaction management? How does it work in DBMS?
  17. What is a view? How to allow updates on views?
  18. Discuss about the concept of third normal form.
  19. Explain the architecture of remote backup system.
  20. Describe the structure of ISAM Index.
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**31323**

DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION, DECEMBER 2021.

Second Semester

Information Technology

VISUAL PROGRAMMING WITH .NET

(CBCS 2018 – 19 Academic Year Onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is Visual Studio?
2. What is Share Point?
3. Define: Namespace.
4. List out the keyboard commands for bookmarks.
5. Define: Delegate.
6. What is an array?
7. What do you mean by stepping through code?
8. What is the use of watch windows?
9. Define: WPF.
10. What is the use of layout?



PART B — (5 × 5 = 25 marks)

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

11. (a) Explain the various components of toolbar and work area.

Or

- (b) How managing visual studio windows?

12. (a) Explain the overview of VS Code editor.

Or

- (b) What are the types of primitive data types? Give examples.

13. (a) How to implement an interface? Describe.

Or

- (b) Write a simple C# program to illustrate a generic list collection.

14. (a) How can you set breakpoints?

Or

- (b) What is a stored procedure? Explain with an example.

15. (a) Write a short note on Grid layout and StackPanel layout.

Or

- (b) Explain about the designing Silverlight applications.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. What are the types of windows and web projects created in Visual Studio? Explain.
  17. Write a program to arrange the names in alphabetical order.
  18. Explain how to create new project in the Solution Explorer Window.
  19. Write a short note on immediate window and call stack window.
  20. Discuss about WPF controls.
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**31331**

DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION, DECEMBER 2021.

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. List out the features of Open Source Software.
2. How do you send Signals in Linux?
3. Write the features of MYSQL.
4. How will you create and delete users in MYSQL?
5. Write about Typecasting in PHP.
6. How to use array in PHP?
7. Define Numbers in Python.
8. What is Tuple? How to create it?
9. Define Conditional statements in Perl.
10. What is mean by module in Perl?

PART B — (5 × 5 = 25 marks)

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

11. (a) How you manage Process in Linux?

Or

- (b) Discuss Kernel mode in Linux Environment.

12. (a) What do you mean by metadata in Mysql? Explain.

Or

- (b) Explain the Date and Time functions in Mysql.

13. (a) What are the various Operators in PHP? Explain.

Or

- (b) Discuss about PHP and LDAP.

14. (a) Write short note on Sequences in Python.

Or

- (b) How you create a function in Python?

15. (a) Explain the parsing rules in Perl.

Or

- (b) How you manipulate data in Perl?

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss the scheduling mechanism in Linux.
17. How will you sort Query results in MYSQL? Explain.

18. Describe the steps involved in Send and receive mail in PHP.
  19. Discuss Conditional and Looping Statements in Python.
  20. Narrate the concepts of Packages in Perl.
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**31332**

DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION, DECEMBER 2021.

Third Semester

Information Technology

OPERATING SYSTEMS

(CBCS 2018 – 19 Academic Year Onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define Operating System.
2. What is DMA? Explain.
3. What do you mean by booting?
4. Illustrate Process Control Block.
5. Write about Mutual Exclusion.
6. How you use Hold and Wait?
7. Define Fragmentation.
8. What is paging? Why we need it
9. List any four file types recognized by operating System.
10. Define Linked allocation.

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain the Storage Structure in Computer System organization.

Or

- (b) Discuss Client Server Computing.

12. (a) What is Preemptive Scheduling? Explain.

Or

- (b) Write short notes on Remote Procedure calls.

13. (a) Discuss the Critical Section Problem.

Or

- (b) What are the necessary conditions for deadlock? Explain.

14. (a) Discuss about Memory mapping.

Or

- (b) What is segmentation? Explain any one segmentation method.

15. (a) Elucidate Tree structured Directories.

Or

- (b) Write about the features of free space management.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. What is system call? Describe various types of system calls.
  17. Elaborate the concepts of InterProcess Communication.
  18. What are Deadlock Prevention methods? Explain.
  19. Discuss in detail about continuous memory allocation.
  20. Narrate the concepts of File allocation methods.
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DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION, DECEMBER 2021.

Third Semester

Information Technology

COMPUTER NETWORKS

(CBCS 2018 – 19 Academic Year Onwards)

Time : Three hours

Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define Personal Area Network.
2. Differentiate Analog and Digital Transmission.
3. What is framing?
4. State the importance of Sliding Window Protocol.
5. Mention the role of Network Layer.
6. Define Flooding.
7. Differentiate UDP and TCP.
8. What is the function of SNMP?
9. State the Components of a Cryptosystem.
10. Mention the difference between Symmetric and Asymmetric Encryption.

SECTION B — (5 × 5 = 25 marks)

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

11. (a) Write notes on applications of Computer Networks.

Or

- (b) Explain about Guided Transmission Media.

12. (a) Discuss about functions of Data Link Layer.

Or

- (b) Illustrate Selective Repeat ARQ Protocol.

13. (a) Differentiate Circuit switching and packet switching.

Or

- (b) Explain about Repeaters and Gateways.

14. (a) Describe the role of Pretty Good Policy.

Or

- (b) Write short notes on Transport Layer Security.

15. (a) What are Security Protocols? Explain.

Or

- (b) Discuss about Encryption Model

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Describe about different types of Network Topology with suitable diagrams.

17. Explain Carrier Sense Multiple Access with Collision Detection and Collision Avoidance.

18. Elucidate about Networking and Internetworking Devices.
  19. Explain in detail about the Remote Procedure Call.
  20. Discuss in detail Secure Electronic Transactions.
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**31341**

DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION, DECEMBER 2021.

Fourth Semester

Information Technology

WEB TECHNOLOGY

(CBCS 2018 – 19 Academic Year Onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define markup language.
2. Differentiate SAX with DOM parser.
3. Mention about Bean info interface.
4. State the use of EJB.
5. Define the significance of Bean Developer Kit.
6. Mention about javax.servlet package.
7. What is implicit JSP object?
8. State how to handle methods in JSP.
9. What is meant by error handling?
10. Define Callable statement in JDBC.

PART B — (5 × 5 = 25 marks)

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

11. (a) Design a HTML coding for creating student information to participate in a technical workshop.

Or

- (b) Elucidate about Java script array handling and array methods.

12. (a) Describe about XML schema and its type.

Or

- (b) Write notes on Java Beans API.

13. (a) Illustrate about Java session handling.

Or

- (b) Discuss about the various ways by which authorization and Security can be imposed in the Internet.

14. (a) Explain about the architecture of Tomcat server.

Or

- (b) Write a Java program to demonstrate session tracking through cookie.

15. (a) Elucidate about how to access the database from JSP page.

Or

- (b) Explain how to develop web application using struts framework.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Write a Java program that acts as a web server and transfer the HTML file requested by the browser client.
  17. Describe about variables, operators, and control structures of objects in java script.
  18. Explain about Servlet life cycle with example.
  19. Write a java program that reads a file of words and replaces all words with upper case.
  20. Elucidate about how JDBC is used to connect various database.
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**D-1546**

**Sub. Code**

**31342**

DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, DECEMBER 2021.

Fourth Semester

Information Technology

SOFTWARE ENGINEERING

(CBCS 2018 – 19 Academic Year Onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define Software Engineering.
2. What is a process pattern?
3. Mention the uses of data attribute
4. What do you mean by software domain analysis?
5. What is Coupling?
6. What is an Architectural design?
7. Define alpha testing.
8. State the use of project metrics.
9. What are technical risks? Explain.
10. What is software quality?

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain briefly about CMMI.

Or

- (b) What are the Unified Process phases? Explain briefly.

12. (a) Describe the non-functional requirements with example.

Or

- (b) Explain the steps to create behavioral model for requirement analysis.

13. (a) What are the architectural styles? Explain any one.

Or

- (b) Explain the issues in user interface design.

14. (a) Distinguish between white box testing and black box testing.

Or

- (b) What are the software quality metrics? Explain.

15. (a) Explain the method for identifying Risks.

Or

- (b) Write short notes on ISO 9000 standard.



PART C — ( $3 \times 10 = 30$  marks)

Answer any THREE questions.

16. What is software process model? Explain any one process model.
  17. What is requirements engineering? Explain various requirements engineering tasks.
  18. Briefly describe each of the four elements of the design model.
  19. Explain the test strategies for conventional software.
  20. Describe the Formal technical review for software quality control.
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**Sub. Code**

**31343**

DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION, DECEMBER 2021.

Fourth Semester

Information Technology

CLOUD COMPUTING

(CBCS 2018 – 19 Academic Year Onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is Cloud?
2. Give any two benefits of cloud computing
3. Write short notes on public cloud.
4. What is web-based scheduling?
5. Write short notes on Yahoo! calendar
6. What is Blist?
7. What is permissive ederation?
8. Define Hadoop
9. Discuss shortly about Nimbus.
10. What is Google App Engine.

PART B — (5 × 5 = 25 marks)

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

11. (a) Discuss shortly about cloud computing

Or

- (b) Briefly explain the Pros and Cons of cloud service development

12. (a) Write short notes on collaborating on schedules

Or

- (b) Discuss about the collaboration on household budget

13. (a) How to explore online scheduling applications. Discuss

Or

- (b) Briefly explain the working of Web-based word processor

14. (a) Shortly discuss about privacy in cloud

Or

- (b) Briefly explain the cloud security challenges.

15. (a) Enumerate the study on open source cloud platforms.

Or

- (b) With a neat diagram explain the OpenNebula architecture.

PART C — ( $3 \times 10 = 30$  marks)

Answer any THREE questions.

16. Explain the types of cloud service development
  17. Write a detailed notes on cloud computing for corporation
  18. Explain the collaboration on project management.
  19. Explain in detail about the four levels of federation
  20. With a neat diagram explain the Eucalyptus architecture.
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