D–5539	Sub. Code
	31311

DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION, MAY 2022.

First Semester

COMPUTER ORGANIZATIONS 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 decimal 109 to octal.

2. Write the truth table for OR gate.

3. Define interpreter.

4. What is multiplexer?

5. What do you mean by interrupt?

6. What is an instruction set?

7. Write down the data transfer modes.

8. What is divide overflow?

9. Define virtual memory.

10. What do you mean by memory consistency?

PART B — ($5 \times 5 = 25$ marks)

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

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

Or

(b) Describe about BCD counter.

12. (a) Write a short notes on types of complements.

Or

(b) Discuss shortly about registers and shift registers.

13. (a) Give short notes on memory reference instruction.

Or

(b) Discuss shortly about the instruction cycle with demonstration.

14. (a) How CPU and IOP communicate with each other? Discuss.

Or

(b) Write short notes about priority interrupt.

15. (a) Briefly explain the memory management hardware.

Or

(b) Discuss about the associative memory.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions

16. Explain k-map method of simplification steps in detail

17. Design a multiplexer and explain its working.

18. Explain the different types of addressing modes.

19. Explain the parallel priority interrupt scheme.

20. Explain the concept of memory mapping.

———————

D–5540	Sub. Code
	31312

DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION, MAY 2022.

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. What is meant by object?
2. Mention about tokens in java.
3. What is meant by constructors?
4. Point out the use of vectors.
5. Specify the role of thread class.
6. Define priority.
7. What is exception handling?
8. State the importance of applet tag.
9. Define stream classes.
10. What is meant by I/O files?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Elucidate about the differences between java and C++.

Or

(b) Write a simple java program to find the given string is a palindrome or not.

12. (a) Discuss about method overloading.

Or

(b) Write notes on the significance of interfaces.

13. (a) Describe bout using thread methods.

Or

(b) Elucidate about the role of synchronization.

14. (a) Illustrate the designing of a web page using applets.

Or

(b) Write a java application that has three buttons labeled Red, Green and Blue and on clicking, the background color should change accordingly and have a label displaying the color selected.

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

Or

(b) Write a java program to read and write files.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions

16. Describe about inheritance and Polymorphism in Java.

17. Create a class whose object represents a complex number. Write a java program to add two objects of this class and store the result in third object.

18. Explain thread life cycle in detail. Write a code to create thread in Java.

19. Enlist and explain the difference between error and exception. Write a program to handle interrupted exception, illegal argument exception using try-cat-finally and throw.

20. Write a program to replace all “word 1” by "word2" to a file without using temporary file and display the number of replacement.

———————

D–5541

Sub. Code
31313

DISTANCE EDUCATION

M.Sc. (Information Technology) DEGREE EXAMINATION, MAY 2022.

First Semester

DATA STRUCTURES AND ALGORITHMS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Why do we need data structure?

2. Define Array Initialization.

3. List out the different ways to implement the list.

4. What are linear and nonlinear data structures?

5. Write the routine for deletion operation of singly linked list.

6. What is Queue, how it is different from stack?

7. Convert the given infix to Postfix notation

   $(J * K) + (X + Y)$.

8. Write the searching of elements in an array.

9. Define sorting.

10. What is insertion sort?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Explain about various primitive data types. Give examples.

Or

(b) Write a short note on time and space complexity of algorithms.

12. (a) Briefly explain about Stack and its operations.

Or

(b) Write an algorithm to insert and delete an element from Circular Queue.

13. (a) Discuss about various types of Binary tree.

Or

(b) Draw a binary search tree. Write an algorithm to insert and search an element in a binary search tree.

14. (a) Write the recursive procedure to find the factorial of a given number if the number is positive.

Or

(b) What is the time and space complexity of binary search algorithm?

15. (a) Explain the use of Selection sort to sort the following numbers:

14, 33, 27, 10, 35, 19, 42, 44.

Or

(b) Discuss about Tree sort procedure with suitable example.

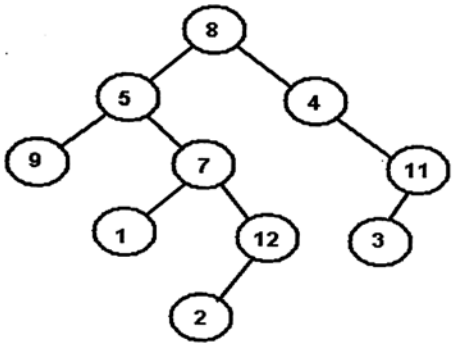
PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. What is an Array? Explain insertion, deletion operations in array with neat diagram.

17. Explain about various operations of Doubly Linked list with neat sketch and example.

18. Consider the following tree: Write an algorithm to find out In-Order, Pre-Order, Post-Order traversal for the given tree and explain.



19. Explain the linked representation of linear search technique. Give example.

20. Discuss about Bubble sort with an example and algorithm. What are its time and space complexities?

———————

D–5542	Sub. Code
	31321

DISTANCE EDUCATION

M.Sc.(IT) DEGREE EXAMINATION, MAY 2022.

Second Semester

DATA MINING AND WAREHOUSING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions

1. Mention the use of warehouse server.

2. What is data quality?

3. Define classification.

4. Point out the role of decision tree in classification.

5. What is clustering?

6. Differentiate machine learning and deep learning.

7. What is meant by text mining?

8. State any two features of Matlab tool.

9. What is big data?

10. Write the use of Hadoop.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Describe the data warehouse technology.

Or

(b) Write a note on data selection.

12. (a) Explain the dynamic item set algorithm.

Or

(b) Explain about importance of Bayesian classification algorithm.

13. (a) Explain the K-means algorithm with example.

Or

(b) List the differences between supervised and unsupervised learning.

14. (a) Elucidate about text clustering.

Or

(b) Describe the features of rapid minor data mining tool.

15. (a) What are the characteristics of big data? Explain.

Or

(b) Describe the core Hadoop components and their functions.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions

16. Describe OLAP and OLTP operations with examples.

17. Discuss in detail about FP tree growth algorithm.

18. Explain about neural networks and its various applications.

19. Write a note on knowledge mining in detail.

20. Elucidate about technologies available for big data.

———————

D–5543	Sub. Code
	31322

DISTANCE EDUCATION

M.Sc. (INFORMATION TECHNOLOGY) DEGREE EXAMINATION, MAY 2022.

Second Semester

RELATIONAL DATABASE MANAGEMENT SYSTEM (RDBMS)

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL quesions

1. What is DBMS?
2. Define relational data model?
3. What do you mean by key constraint?
4. What is relational calculus?
5. What is conceptual evaluation strategy?
6. Write any four set-comparison operators in SQL.
7. Write the ACID properties of a transaction.
8. What do you mean by useless transaction?
9. Define ISAM.
10. What is Hash based indexing?

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain various scheme in DBMs.

Or

(b) Discuss the requirement analysis in database design process.

12. (a) Discuss the standard set operations in relational algebra.

Or

(b) Write short note on Tuple relational calculus.

13. (a) What are outer joins? Explain with suitable example.

Or

(b) Define active database. How triggers are created in SQL? Explain with example.

14. (a) Discuss about validation based protocols.

Or

(b) Write short note on Buffer management.

15. (a) What do you mean by tree base indexing? Discuss.

Or

(b) Describe about embedded SQL?

PART C — (3 × 10 = 30 marks)

Answer any THREE questions

16. List the drawbacks of file system and advantages of DBMS in detail.

17. How do you enforcing integrity constraints with suitable examples.

18. Explain in detail about various normal forms with suitable examples.

19. Explain about non locking schedulers.

20. What are the file organization method? Explain.

———————

D–5544	Sub. Code
	31323

DISTANCE EDUCATION

M.Sc. (INFORMATION TECHNOLOGY) DEGREE EXAMINATION, MAY 2022.

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 menu bar, file menu and edit menu?

2. Distinguish between toolbar and status bar.

3. Write the console application skeleton code for visual basic.

4. How book marks are used in visual studio code editor?

5. Define the term deligates.

6. What are the features of generics?

7. What is the meaning of “kit count” option in break point?

8. Write the three statements of immediate window.

9. Define GUL.XAML

10. Write any 4 WPF controls.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Discuss about work area and solution explorer in visual studio.

Or

(b) Write short notes on doing windows and floating windows.

12. (a) What is branching statements? How select case statements is used in vb with suitable program.

Or

(b) Distinguish between for loop and for each loop in c# with suitable code.

13. (a) Write short notes on solution explorer window.

Or

(b) How class designer code is generated in c# with suitable code.

14. (a) Discuss about the call stack window.

Or

(b) Explain about watching variables with pin to source.

15. (a) How the wrap panel layout control is created in visual studio? Discuss.

Or

(b) How to design a silver light application? Discuss.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions

16. (a) Discuss about the tabbed windows and closing and opening windows.

    (b) Write short notes on web projects and data base projects.

17. What are properties? How they are declared and used in c# with suitable program.

18. Explain about the building, rebuilding and cleaning the solution projects.

19. How data base is created and tables are added in visual studio with suitable examples.

20. (a) What are the compobox properties for data binding? Explain.

    (b) How to set up a data source? Illustrate.

———————

D–5545	Sub. Code
	31331

DISTANCE EDUCATION

M.Sc. (INFORMATION TECHNOLOGY) DEGREE EXAMINATION, MAY 2022.

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 we need open source software?

2. List the features of open source software.

3. Write about the date and time functions in MYSQL.

4. Describe metadata.

5. Define data type and constants in PHP.

6. What is typecasting in PHP?

7. State the dictionaries in python.

8. What are objects in python?

9. Write the parsing rules in perl.

10. Mention the conditional operators in Perl.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Discuss the advantages and disadvantages of open source software.

Or

(b) Write about scheduling in Linux.

12. (a) How do you use sequence in MYSQL?

Or

(b) List the queries used to generate summary in MYSQL.

13. (a) Write about functions in PHP.

Or

(b) List the usage of debugging and error handling features in PHP.

14. (a) Write a note on list and tuples in python.

Or

(b) Discuss the features of modules in python.

15. (a) How do you create subroutine in perl?

Or

(b) Write about packages in perl.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions

16. Discuss cloning and scheduling in linux.

17. Explain the record selection technology with a suitable example.

18. Discuss in detail about file handling in PHP.

19. Explain about conditionals and loops in python.

20. Explain the control structures with a suitable program in perl.

———————

D–5546	Sub. Code
	31332

DISTANCE EDUCATION

M.Sc.(Information Technology) DEGREE EXAMINATION, MAY 2022.

Third Semester

OPERATING SYSTEM

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions

1. What is an operating system?

2. Define spooling?

3. What is the use of fork() system call?

4. Define process scheduling?

5. Write any two advantages of semaphore.

6. What are the conditions for dead lock to occur?

7. Define symbolic address and physical address.

8. What are the differences between contiguous and non-contiguous storage allocation?

9. What are the ways the file can be accessed?

10. Write any four criteria for choosing file organization.

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain any five important services of operating system.

Or

(b) Discuss about system programs in operating system.

12. (a) Discuss about states of process.

Or

(b) Compare long-term scheduler with short-term scheduler.

13. (a) Write short notes on methods for handling dead locks.

Or

(b) Explain mutual-exclusion implementation with test and set().

14. (a) What is contiguous memory allocation? Explain its types.

Or

(b) What are page replacement algorithms? Explain any one.

15. (a) Explain the Unix file system structure.

Or

(b) Write short notes on directory.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions

16. What are system calls? Explain various types of system calls.

17. Explain any two process scheduling algorithms with example.

18. What are dead lock prevention methods? Explain.

19. Illustrate the paging memory management technique.

20. Explain disk scheduling algorithms.

———————

D–5547	Sub. Code
	31333

DISTANCE EDUCATION

M.SC.(IT) DEGREE EXAMINATION, MAY 2022.

Third Semester

INFORMATION TECHNOLOGY

COMPUTER NETWORKS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions

1. Specify the different types of transmission modes.
2. Differentiate analog and digital signals.
3. What is meant by CRC?
4. Point out the role of stop-and-wait protocol.
5. Define switching technique.
6. State the advantage of dynamic routing.
7. Mention the significance of transport layer.
8. Differentiate UDP and TCP.
9. What is meant by cryptography?
10. Specify the use of authentication.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Elucidate about wireless networks and its components.

Or

(b) Discuss various applications of computer networks.

12. (a) Write notes on Cyclic Redundancy Check. (CRC)

Or

(b) Illustrate about sliding window protocol.

13. (a) Describe the concept of packet switching.

Or

(b) Explain in detail about multicast routing.

14. (a) Describe the organization and functions of TCP.

Or

(b) Explain simple network management protocol.

15. (a) Compare transposition and substitution ciphers with suitable examples.

Or

(b) What are the network security services? Explain.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions

16. Explain different types of network topologies with suitable diagrams.

17. Elucidate about error detection and correction codes with examples.

18. Describe in detail about shortest path routing with neat diagram.

19. What is RPC? Explain the concept with neat diagram.

20. Discuss in detail the RSA algorithm in network security.

———————

D–5548	Sub. Code
	31341

DISTANCE EDUCATION

M.Sc. (IT) DEGREE EXAMINATION, MAY 2022.

Fourth Semester

WEB TECHNOLOGY

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions

1. Define web clients.
2. What are the two major protocols for accessing email from servers?
3. Define HTTP protocol.
4. What is XML namespace?
5. What are web services?
6. What is the use of WSDL?
7. Write the expansion for the following:

   (a) SOAP (b) ODBC
8. What is UDDI?
9. What is the role of server?
10. Define WWW.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Differentiate between private assembly and shared assembly.

Or

(b) Differentiate static web pages and dynamic web pages.

12. (a) Briefly explain about ASP.NET applications.

Or

(b) Difference between markup language and scripting language.

13. (a) What are the two fundamental objects in ADO.NET?

Or

(b) Discus about SQL basics: Select, Update, Insert, Delete.

14. (a) What is conditional processing? How can we give conditions in JSP?

Or

(b) How does a web server and browser communicate with each other?

15. (a) Difference between custom controls and user controls?

Or

(b) Discuss in detail authorization and security.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions

16. Define assembly. What are the several types of assemblies? Explain them in detail.

17. How many types of rich controls are provided by ASP NET?

18. Discuss about state management? What are the types of state management in ASP NET?

19. Explain web service architecture in detail. How does a web service work? What are the benefits of web services?

20. What happens when someone accesses a web application that uses forms authentication?

———————

D–5549	Sub. Code
	31342

DISTANCE EDUCATION

M.SC. (IT) DEGREE EXAMINATION, MAY 2022.

Fourth Semester

Information Technology

SOFTWARE ENGINEERING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions

1. List the goals of software engineering.
2. What is the prime objective of software engineering?
3. Distinguish between process and methods.
4. Give the importance of software engineering.
5. Distinguish between verification and validation.
6. What are the functions of data architecture?
7. Define system modeling.
8. Mention some of the factors to be considered during system modeling.
9. What are the three phases of risk management?
10. What is the role of data dictionary?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Explain iterative waterfall and spiral model for software life cycle and discuss various activities in each phase.

Or

(b) Discuss about user interface design process.

12. (a) Explain data architectural and procedural design for a software.

Or

(b) Explain the importance of user interface design in sale of software.

13. (a) Discuss in detail about the design process in software development process.

Or

(b) What are the various software architectures available for the developer according to you? Which is the best and why?

14. (a) What do you mean by modularity in software development? Why is it needed? What is its strength?

Or

(b) Discuss the various life cycle models in software development.

15. (a) Describe the concept of information hiding.

Or

(b) Explain the set of principles for software engineering design.

PART C — ($10 \times 3 = 30$ marks)

Answer any THREE questions

16. Explain iterative waterfall and spiral model for software life cycle and discuss various activities in each phase.

17. Identify the umbrella activities in software engineering process.

18. Explain the ways and means for collecting the software requirements and how are they organized and represented?

19. Explain the software requirement analysis and modeling.

20. Describe how software requirements are documented? State the importance of documentation.

———————

D–5550

Sub. Code
31343

DISTANCE EDUCATION

M.Sc.(IT) DEGREE EXAMINATION, MAY 2022.

Fourth Semester

Information Technology

CLOUD COMPUTING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions

1. Define – Cloud computing.
2. What are the innovative characteristics of cloud computing?
3. What are the properties of cloud computing?
4. What are the major advantages of cloud computing?
5. What are the disadvantages of virtualization?
6. What is QOS?
7. What is grid computing?
8. What features can you expect from a web conferencing service?
9. What are the two most popular social networking sites?
10. What is cloud storage?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Discuss the security challenges in cloud computing?

Or

(b) What are the fundamental principles of cloud security design?

12. (a) Discuss the cloud computing reference model.

Or

(b) Classify the various types of clouds.

13. (a) List some of the challenges in cloud computing?

Or

(b) Give overview of applications of cloud computing?

14. (a) What fundamental advantages does cloud computing technology bring to scientific application?

Or

(b) Draw the architecture of cloud and explain in detail.

15. (a) What are the collaboration schedules in communicating across the community?

Or

(b) Distinguish between authentication and authorization.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions

16. How to discover cloud service development services and tools? Explain it with example.

17. Explain the types of cloud service development in detail.

18. Describe the cloud service development in detail.

19. Explain in detail about centralizing e-mail communication.

20. Explain the activities on cloud computing for the corporation?

———————