

D-1466

Sub. Code

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.

PART C — ($3 \times 10 = 30$ 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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D-1467

Sub. Code

31312

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.

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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D-1468

Sub. Code

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 n^{th} fibonacci number.
15. (a) Describe the insertion sort procedure.
Or
(b) Illustrate the selection sort.

PART C — ($3 \times 10 = 30$ 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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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 and 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.

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-1470

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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.

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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D-1471

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31323

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.

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.

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 program to create a database for an employee.
 20. What are the different layout controls? Discuss.
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