D–2206	Sub. Code
	34111

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
DECEMBER 2023.

First Semester

DESIGN AND ANALYSIS OF ALGORITHMS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

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

Answer ALL questions.

1. What are the basic characters of an algorithm?

2. Write the steps for developing a program.

3. What is the use of searching algorithms?

4. How does divide and conquer works?

5. What is greedy method?

6. How to create a spanning tree from a graph?

7. What do you mean by graph traversing?

8. What is the use of branching and bounding of algorithm?

9. Define backtracking.

10. How to represent graph in the memory?

SECTION B — (5 × 5 = 25 marks)

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

11. (a) What are the notation of an algorithm? Explain.

Or

(b) Discuss the procedure for problem solving.

12. (a) What is recursion? Explain with example.

Or

(b) What is called searching and Explain about binary search?

13. (a) Write short notes on optimal binary search tree.

Or

(b) Explain Kruskal's Algorithm.

14. (a) How to find topological sort for a graph?

Or

(b) Describe the Depth First Search technique.

15. (a) Discuss LIFO branch and bound search with example.

Or

(b) Explain the terminologies associated with graphs.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss the role of space and time complexity for developing efficient algorithms.

17. How does merge sort works using divide and conquer techniques?

18. Explain greedy method with example.

19. How to construct heap and explain its types?

20. How to solve sum of subset problem using backtracking?

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D–2207	Sub. Code
	34112

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
DECEMBER 2023.

First Semester

APPLIED MATHEMATICS FOR COMPUTER SCIENCE

(CBCS 2018-19 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. What is a proposition? Give example.

2. Define the term tautology.

3. What is conjunctive normal form?

4. What are free and bound variables?

5. Define degree of a vertex in a graph.

6. Write the applications of binary tree.

7. What is a slack variable?

8. State the optimality conditions for simplex method.

9. What do you mean by degenerate basic feasible solution of Transportation problem?

10. Give the mathematical formulation of assignment problem.

PART B — (5 × 5 = 25 marks)

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

11. (a) Construct truth table for $(p \to q) \to (p \wedge q)$.

Or

(b) Without constructing truth table prove that $\neg p \to (q \to r) \Leftrightarrow q \to (p \vee r)$.

12. (a) Show that SVR is tautologically implied by $(PVQ) \wedge (P \to R) \wedge (Q \to S)$.

Or

(b) Prove the implication $\forall x(P(x) \to Q(x))$, $\forall x(R(x) \to \neg Q(x)) \Rightarrow \forall x(R(x) \to \neg P(x))$.

13. (a) Write short notes on :

(i) Hamiltonian graph

(ii) Complete graph.

Or

(b) Explain the matrix representation of graphs with example.

14. (a) Use Graphical method to solve the following LP problem :

Maximize $Z = 15x_1 + 10x_2$

Subject to the constraints :

$4x_1 + 6x_2 \leq 360$

$3x_1 \leq 180$

$5x_2 \leq 200$ and $x_1, x_2 \geq 0$.

Or

(b) Explain the two phase method to solve linear programming problem.

15. (a) Solve the following Transportation Problem using North West corner method.

Destination

		1	2	3	4	Supply
	1	3	1	7	4	300
Source	2	2	6	5	9	400
	3	8	3	3	2	500
	Demand	250	350	400	200	

Or

(b) Describe the method to solve assignment problem.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Prove that the following implications by using truth table $p \to (q \to r) \Rightarrow (p \to q) \to (p \to r)$.

17. Obtain the principal disjunctive normal form and principal conjunctive normal form of the statement $p \to ((p \to q) \wedge \neg(\neg q \vee \neg p))$.

18. What is a spanning tree? How spanning trees are constructed? Explain any one approach with example?

19. Use simplex method to solve the following LPP :

Maximize $Z = 4x_1 + 10x_2$

Subject to the constraints :

$$2x_1 + x_2 \leq 50,$$
$$2x_1 + 5x_2 \leq 100,$$
$$2x_1 + 3x_2 \leq 90,$$
$$x_1, x_2 \geq 0.$$

20. Determine the optimum assignment schedule and cost of the following assignment problem.

	1	2	3	4	5	6
A	12	10	15	22	18	8
B	10	18	25	15	16	12
C	11	10	3	8	5	9
D	6	14	10	13	13	12
E	8	12	11	7	13	10

D–2208	Sub. Code
	34113

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
DECEMBER 2023.

First Semester

ADVANCED JAVA PROGRAMMING

(CBCS 2018-19 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define the term Metadata.

2. What do you mean by Result set in JDBC?

3. Define URL address.

4. What do you mean by Remote Method Invocation?

5. What is the purpose of JAR files?

6. What is Persistence?

7. Define Cookies.

8. What do you mean by Servlets?

9. What is the purpose of Trees in JApplet?

10. How to Work with Graphics in AWT Classes?

PART B — (5 × 5 = 25 marks)

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

11. (a) Describe the Meta Data function with suitable illustration.

Or

(b) Write short notes on SQL Exception.

12. (a) Explain briefly about the TCP/IP Client Sockets with neat Sketch.

Or

(b) Describe the URL Connection with suitable illustration.

13. (a) Elucidate on Bean Development Kit with proper example.

Or

(b) What are the Design Patterns for Properties? Explain.

14. (a) What is a Generic Servlet? Explain.

Or

(b) Describe Servlet Parameters with suitable illustration.

15. (a) Explain the role of Buttons in JApplet.

Or

(b) Write short notes on Colors and Font.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain in detail about the Statement and Result Set Parameter of JDBC.

17. Elucidate with proper example the Client/Server TCP Sockets.

18. Describe the Events and Methods with suitable example.

19. Explain the Life Cycle of a Servlet with neat Sketch.

20. Describe in detail on Working with Graphics with proper illustration.

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D–2209	Sub. Code
	34121

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
DECEMBER 2023.

Second Semester

COMPUTER SYSTEM ARCHITECTURE

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Define Latency.

2. Find the number of dies per 300 mm(30cm) wafer for a die that is 1.5 cm on a side.

3. What is loop level parallelism.

4. When hazard is created.

5. What is known as Ideal processor.

6. Expand SIMD.

7. Define Snooping.

8. When the situation occurs for Sequential Inter leaving.

9. What is RAID 4 level.

10. Tell about Transaction Processing.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Explain the two measures of dependability which quantify the transition.

Or

(b) Illustrate Amdahl's Law.

12. (a) Explain how the loop unrolling used to improve scheduling.

Or

(b) Discuss the Implementation issues and Extension in Speculation.

13. (a) Illustrate the basic Structure of distributed memory multiprocessor.

Or

(b) Describe the Cross-cutting issues related to memory consistency.

14. (a) Analyse the Fourth optimization: pipelined cache access to increase cache bandwidth.

Or

(b) Elaborate DRAM Technology in Memory with a neat diagram.

15. (a) Explain the characteristics of Poisson Distribution of random variables.

Or

(b) Compare Block Server vs Filers.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions

16. When do we undertake summarising the performance and Explain the reasons.

17. Elaborate the Multithreading using ILP support to exploit thread - level parallelism

18. Justify the Performance measurement in multiprogramming and OS workload.

19. List out the Cross cutting issues in protection and instruction set architecture.

20. Discuss about the Internet Archive Cluster.

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D–2210	Sub. Code
	34122

DISTANCE EDUCATION

M.Sc.(Computer Science) DEGREE EXAMINATION,
DECEMBER 2023.

Second Semester

DISTRIBUTED 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 distributed computing system?

2. Define WAN.

3. What is buffering?

4. Define Decoding.

5. State granularity.

6. What is Thrasing?

7. Define file models.

8. What is atomic transaction?

9. Define the authentication.

10. List out the uses of digital signatures.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Explain about the distributed operating system models.

Or

(b) Evaluate the issues in designing distributed computing system.

12. (a) Describe about the encoding and decoding.

Or

(b) Give an account on failure handling.

13. (a) Illustrate the heterogeneous DSM.

Or

(b) Describe the election algorithm.

14. (a) Analyse the distributed file system desirable features.

Or

(b) Explain the fault tolerance.

15. (a) Describe about the cryptography.

Or

(b) Discuss about the access control.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Elucidate the network types in details.

17. Summarize the Process addressing.

18. Discuss about the architecture of DSM system.

19. Explain about the file caching schemes.

20. Write notes on design principles with details.

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D–2211

Sub. Code
34123

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
DECEMBER 2023.

Second Semester

.NET PROGRAMMING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Wrote shore note on CTS.

2. Define modules.

3. What is meant by sub procedures?

4. Comment on Dialog boxes.

5. Write a note on tab controls.

6. Define Exception handling.

7. List out various usage of Global asax file.

8. Mention various Data controls in ASP. NET.

9. Define data namespace.

10. What is known as a data grid?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Write a short note on . NET garbage collection.

Or

(b) Explain about overloading in .NET.

12. (a) Explain various data types in Visual Basic. NET

Or

(b) Write a Visual Baisc .NET program to demonstrate the For loop.

13. (a) Write a note on the progress bar.

Or

(b) Explain structured exception handling.

14. (a) Write notes on custom controls.

Or

(b) Comment on the Server Utility.

15. (a) Give notes on the Data namespace.

Or

(b) Explain the data list.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Discuss about OOPS concepts.

17. Briefly explain looping statements.

18. Write a Visual Basic .NET program to demonstrate exception handling.

19. Discuss about AJAX controls.

20. Briefly explain data binding controls with an example.

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D–2212	Sub. Code
	34131

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
DECEMBER 2023.

Third Semester

CRYPTOGRAPHY AND NETWORK SECURITY

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

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

Answer ALL questions

1. Write any two challenges of computer security.

2. Define traffic padding.

3. What is called stream cipher?

4. What are the distinct functions of AES transformation?

5. What is the use public key?

6. What is an elliptic curve?

7. Define traffic analysis.

8. Expand DSS, SHA, and DSA.

9. What are the possible ways to provide Web Security?

10. What are the operations involved in PGP?

SECTION B — ($5 \times 5 = 25$ marks)

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

11. (a) Explain the OSI security architecture.

Or

(b) Draw the Simplified model of Symmetric Encryption and write the function of its components.

12. (a) Write short notes on DES design criteria.

Or

(b) Describe the concept shift rows transformation.

13. (a) Explain the basic terminologies of public key crypto system.

Or

(b) Describe the working of Elliptic Curve Cryptography.

14. (a) Write short notes on message authentication codes.

Or

(b) How does data authentication algorithm works?

15. (a) List out the parameters defined by the SSL session state.

Or

(b) Write short notes on IP security.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. How do transposition ciphers work and explain its types with example?

17. Explain encryption and decryption process of AES block cipher technique.

18. Describe the RSA algorithm with example.

19. What are the requirements of digital signature? Explain its schemes.

20. How does PGP used for electronic mail and file storage applications? Explain.

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D–2213	Sub. Code
	34132

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
DECEMBER 2023.

Third Semester

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. List the components of Cloud Computing.

2. What are the benefits of Migrating to Cloud Computing?

3. How to centralize the Email communication?

4. How will the Cloud Services collaborate on To-Do Lists?

5. Define Contact Management in Cloud

6. What types of Calendars can you create with Google Calendar?

7. What is the Web-based storage available in Cloud?

8. What is VMware?

9. What do you mean by Logical Partitioning?

10. What are Virtualized Data Centers in Cloud?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Describe in brief about the Developing Cloud Service Models with neat sketch.

Or

(b) Briefly explain the Pros and Cons of Cloud Computing.

12. (a) How will the Scheduling Collaborate takes place in Cloud Paradigm?

Or

(b) Write Short notes on Cloud Computing for Corporation.

13. (a) Elucidate the Online Calendar Applications in Cloud Computing.

Or

(b) Explain in detail about Event Management in Cloud Computing.

14. (a) What are VCloud Services? Explain.

Or

(b) Describe the Platform–as–a–Service with suitable illustration.

15. (a) Explain the working of VIO Server for Cloud.

Or

(b) Describe the Way, how Storage Virtualization works in Cloud Scenario.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain in detail about the Cloud Computing Service Development Tools with neat Sketch.

17. What are the various ways to Collaborating on Household budgets using Cloud? Explain in detail.

18. Describe in detail on the Word Processing and Database via Online with suitable example.

19. Explain in detail with proper illustration, the Amazon Web Services for Cloud Implementation.

20. Explain the Cloud Storage Area Networks with suitable example.

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D–2214	Sub. Code
	34133

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
DECEMBER 2023.

Third Semester

WEB TECHNOLOGY

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL the questions.

1. What is an URL?

2. Denote the purpose of class selectors.

3. Specify the use of functions in JavaScript.

4. Define Dynamic HTML.

5. State the hardware needed for Web Server.

6. Define name space.

7. How servlet is better than CGI?

8. State the use of Java Virtual Machine.

9. Mention about JSP.

10. Define Hyper Text Transfer Protocol.

PART B — (5 × 5 = 25 marks)

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

11. (a) Describe about Cascading Style Sheets and its benefits.

Or

(b) Write notes on significance of table tag in HTML.

12. (a) What are operators in JavaScript? Explain.

Or

(b) Discuss how to perform animations in JavaScript.

13. (a) Explain the properties of node object with examples.

Or

(b) Illustrate SAX Parser.

14. (a) Explain about single thread model.

Or

(b) Write a note on life cycle of Servlet.

15. (a) Describe about types of directives in JSP.

Or

(b) Compare JSP and Servlet technologies.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Elucidate about formatting blocks of information.

17. Discuss about arrays in Javascript.

18. Write a JavaScript program to display the grade of a student by accepting the marks of five subjects.

19. Describe about functions used for retrieving information.

20. Write a note on creating, installing and running a JSP page.

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D–2215

Sub. Code
34141

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
DECEMBER 2023.

Fourth Semester

DATA MINING AND WARE HOUSING

(CBCS–2018–2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL the questions.

1. Define OLAP.

2. What is meant by Decision Support System?

3. Mention pros and cons of Data Mining.

4. What is meant by data exploration?

5. Define association rule.

6. What is classification?

7. What is meant by CLARANS?

8. Define supervised machine learning.

9. What is meant by web content mining?

10. Where the text clustering used?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Write a note on OLAP operations.

Or

(b) Write down the transformation tools in data warehouse.

12. (a) Briefly explain about knowledge and its types.

Or

(b) How the feature subset selection is performed? Explain.

13. (a) Describe about Apriori Algorithm.

Or

(b) Discuss about dynamic item set algorithm.

14. (a) Explain about CLARA.

Or

(b) Explain in detail about unsupervised machine learning algorithm.

15. (a) Short note on Temporal Data mining.

Or

(b) Write a note on Knowledge mining.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Illustrate extraction tools in data warehouse technology in detail.

17. Describe in detail about KDD process in data mining.

18. Explain about Decision Tree Classification Algorithm.

19. Exemplify Neural networks and its types.

20. Discuss in detail about web mining in detail.

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D–2216

Sub. Code
34142

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
DECEMBER 2023.

Fourth Semester

MOBILE APPLICATION DEVELOPMENT

(CBCS–2018–2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL the questions.

1. Define Operators.

2. What are the applications of mobile ecosystem?

3. Mention pros and cons of the Mobile Websites.

4. What is meant by Utility Apps?

5. Define Wireframes.

6. What is iconography?

7. What is meant by MIDlet?

8. When Event Handling is used?

9. Define SDK.

10. Where Android AVD is used?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Write a note on Mobile Networks in Mobile Ecosystem.

Or

(b) Write down the Platforms of the Mobile Ecosystem.

12. (a) What is SMS? Explain briefly.

Or

(b) Write short notes on GPS.

13. (a) What are Sitemaps.? Explain.

Or

(b) What is interpreting design? Explain.

14. (a) Explain about Event Handling.

Or

(b) Explain in detail about 'Hello world' application using wireless toolkit.

15. (a) Describe the features of Google Android.

Or

(b) Write a note on RIM Balckberry.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Illustrate the mobile ecosystem architecture and its components.

17. Describe in detail about Apps in Mobile Device Profiles.

18. What are the elements of mobile design? Explain.

19. Exemplify Software Development Kit.

20. Discuss in detail about Development framework of Google Android.

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D–2217

Sub. Code
34143

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
DECEMBER 2023.

Fourth Semester

ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS

(CBCS–2018–2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Define Forward Reasoning.

2. What are Local Search Algorithms?

3. What do you mean by Syntax and Semantics?

4. Define Pattern Recognition.

5. What are the Components of an Expert System?

6. What is the purpose of defining domain knowledge?

7. How will the triangle table works?

8. Define Graph Planning.

9. Define Quantization.

10. What do you mean by Image Data Reduction?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Explain the Forward and Backward Reasoning.

Or

(b) Elucidate with neat Sketch on working of Genetic Algorithm.

12. (a) What are Inference Rules? Explain with suitable example.

Or

(b) Write Short notes on Learning Phase.

13. (a) Elucidate the Characteristics feature of an Expert System.

Or

(b) Describe in detail about Expert System Shell.

14. (a) Write short notes on Robot Problem Solving with suitable example.

Or

(b) Describe shortly on Symbolic Spatial Relationships.

15. (a) Describe in brief about functions in Vision System.

Or

(b) What is Object Recognition? Explain.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain in detail about the Measuring Problem Solving Agents with neat Sketch.

17. Describe the Knowledge Engineering Process with proper illustration.

18. What are the components of an Expert System? Explain their functions with suitable example.

19. Explain with proper illustration, the Monkey and Banana Problem.

20. Elucidate in detail on Training the Vision System with neat Sketch.

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D–1460

Sub. Code
34111

DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION, MAY 2019.

First Semester

Computer Science

DESIGN AND ANALYSIS OF ALGORITHMS

(CBCS 2018-19 Academic year onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define average case efficiency.

2. What is algorithm design technique?

3. What is the difference between empirical and theoretical analysis of algorithm?

4. Write a non-recursive algorithm to find out the largest element in a list of n numbers.

5. Write down the running time of 0/1 knapsack problem.

6. What is greedy technique?

7. What is a directed acyclic graph?

8. Define Heap.

9. What is Hamiltonian cycle in an undirected graph?

10. Define spanning tree.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) List the properties of various asymptotic notations.

Or

(b) Describe briefly the steps in designing algorithm.

12. (a) What are the necessary steps for analyzing the efficiency of recursive algorithms? Explain.

Or

(b) Distinguish between the binary search and linear search algorithms.

13. (a) Explain briefly the Floyd's algorithm.

Or

(b) What is optimal binary search tree? Explain its algorithm.

14. (a) Write short on DFS based sorting algorithm.

Or

(b) Explain the general structure of linear programming problem.

15. (a) Write backtracking algorithm for subset-sum problem.

Or

(b) What is NP complete problem? Explain with example.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. What are the important problem types focused by the researchers? Explain any two with examples.

17. Briefly explain the procedure used for strassen's matrix multiplication.

18. Describe the Dijikstras algorithm in detail with an example and analyze its efficiency.

19. Explain the Heap sort algorithm with example.

20. Apply branch and bound algorithm to solve travelling salesman problem.

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D–1461

Sub. Code
34112

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
MAY 2019.

First Semester

APPLIED MATHEMATICS FOR COMPUTER SCIENCE

(CBCS 2018-2019 Academic Year onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Explain the conditional proposition and its truth table.

2. What is tautology?

3. Define PCNF statement.

4. What are quantifiers? Explain.

5. When a graph is said to be multigraph? Give example.

6. Define spanning tree.

7. What is linear programming?

8. Defile slack variable.

9. What do you mean by independent allocations in a transportation problem? Explain.

10. What is an assignment problem?

PART B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Construct a truth table for $\neg(p \vee (q \wedge r) \leftrightarrow ((p \vee q) \wedge (p \rightarrow r))$.

Or

(b) Determine whether the given statement is tautology or contradiction $(p \vee q) \wedge (\neg p \vee r) \rightarrow (q \vee r)$.

12. (a) Find the conjunctive normal form for the statement $(q \vee (p \wedge q)) \wedge \neg((p \vee r) \wedge q)$.

Or

(b) Show that $\forall x(P(x) \rightarrow (Q(y) \wedge R(x)))$, $\exists x\, P(x) \Rightarrow Q(y) \wedge \exists x(P(x) \wedge R(x))$.

13. (a) Draw the graph represented by the following adjacency matrix $\begin{bmatrix} 1 & 2 & 0 & 1 \\ 2 & 0 & 3 & 0 \\ 0 & 3 & 1 & 1 \\ 1 & 0 & 1 & 0 \end{bmatrix}$.

Or

(b) Represent the expression $((a-c)*d)/(a+b-d)$ as a binary tree and write the prefix and post fix forms of expression.

14. (a) Solve the following linear programming problem graphically.

Maximize $z = x_1 + 2x_2$

Subject to :

$-x_1 + 2x_2 \leq 8$

$x_1 + 2x_2 \leq 12$

$x_1 - x_2 \leq 3$

$x_1, x_2 \geq 0.$

Or

(b) Explain the computational procedure for solving LPP using two phase method.

15. (a) Explain the North West Corner rule to solve a transportation problem given.

	D_1	D_2	D_3	D_4	
O_1	8	10	7	6	50
O_2	12	9	4	7	40
O_3	9	11	10	8	30
	25	32	40	23	120

Or

(b) Solve the following unbalanced minimal assignment problem.

		Machine		
		A	B	C
	1	9	26	15
Job	2	13	27	6
	3	35	20	15
	4	18	30	20

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Prove the following equivalences without using truth tables.

(a) $(\neg p \wedge (\neg q \wedge r)) \vee (q \wedge r) \vee (p \vee r) \equiv r$

(b) $p \rightarrow (q \vee r) \equiv (p \rightarrow q) \vee (p \rightarrow r)$.

17. Find the principal disjunctive normal for the statement $p \vee \neg(q \vee r)) \vee (((p \wedge q) \wedge \neg r) \wedge p)$.

18. What are the algorithms for constructing minimum spanning trees? Explain any one.

19. Use Simplex method to solve the following LP problem.

Maximize $Z = x_1 + x_2 + 4x_e + 2x_4$

Subject to :

$x_1 + 3x_3 + x_4 \leq 4$

$x_3 + 2x_4 \leq 3$

$x_1 + 4x_w + x_3 \leq 3$

and $x_1, x_s, x_3, x_4 \geq 0.$

20. Solve the following assignment problem to minimize the total cost represented as elements in the matrix (costs in thousand rupees).

	Customer			
Building	1	2	3	4
A	48	48	50	44
B	56	60	60	68
C	96	94	90	85
D	42	44	54	46

D–1462	Sub. Code
	34113

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
MAY 2019.

First Semester

ADVANCED JAVA PROGRAMMING

(CBCS 2018-19 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. Define JDBC.

2. What is meant by java exception handling?

3. What is Server-side programming?

4. Mention the Interfaces used for creating RMI.

5. How to generate a JAR File?

6. What is Java Bean?

7. State the primary function of package “java.util.jar”.

8. Mention the role of HttpServlet Class.

9. What is Japplet?

10. Write any two methods of Font class.

SECTION B — (5 × 5 = 25 marks)

Answer ALL the questions.

11. (a) Enumerate the features and the applications of Java.

Or

(b) What are JDBC drivers? Explain.

12. (a) Compare and contrast the features of TCP and UDP.

Or

(b) Illustrate about TCP/IP Sockets.

13. (a) Describe how to develop a Simple Bean using the BDK.

Or

(b) Write notes on Design patterns for Events.

14. (a) Explain the significance of GenericServlet Class.

Or

(b) What are initialization parameters? When are they used?

15. (a) Discuss about the importance of Radio Buttons.

Or

(b) How to Initialize and Terminate Applets in Java? Explain.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Write a Java program for storing, retrieving, delete and update student details using JDBC.

17. Discuss about simple client-server application using RMI.

18. Write steps for developing a simple beans using BDK.

19. Write a program for implementing Session Tracking.

20. Discuss the type of controls for user interface available in AWT package.

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D–1463

Sub. Code
34121

DISTANCE EDUCATION

M.Sc. DEGREE EXAMINATION, MAY 2019.

Second Semester

Computer Science

COMPUTER SYSTEM ARCHITECTURE

(CBCS 2018-19 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Define module reliailability.

2. What is spatial locality?

3. What is Loop-Level Parallelism?

4. Define data hazard.

5. What is Cache coherence protocols in Centralized shared memory architecture? Give the two class names.

6. What are the three states of cache block in directory based cache coherence protocols?

7. What is the need for cache?

8. List out the need for memory hierarchy.

9. What is RAID?

10. Give the types of storage devices.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Discuss about Semiconductor DRAM technology.

Or

(b) What are the advantages of Parallelism? Explain.

12. (a) Write short note on Control Dependences.

Or

(b) What is Dynamic scheduling? Explain briefly.

13. (a) Briefly explain the multiprocessor architecture.

Or

(b) Explain the performance of symmetric shared memory multiprocessor.

14. (a) Explain briefly how the protection of processes from each other is done via virtual memory.

Or

(b) Discuss about the impact of virtual machines on virtual memory.

15. (a) Explain the functionality of I/O sub system.

Or

(b) Write short notes on designing a cluster.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Explain in detail about Trends in Cost.

17. How to overcome Data Hazards with dynamic scheduling? Explain.

18. Explain the Distributed shared memory architecture.

19. Describe the hierarchy followed in memory structure.

20. Explain about the practical issues in interconnecting the networks.

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D–1464

Sub. Code
34122

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
MAY 2019.

Second Semester

DISTRIBUTED OPERATING SYSTEM

(CBCS 2018-19 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. What is DCE?

2. Mention the uses of Application layer.

3. What is the purpose of Bridges in networks?

4. What is the function of ATM layer?

5. Give the uses of encoding of message data.

6. What is Exception handling?

7. State any two advantages of distributed Shared memory.

8. How computer clocks are implemented?

9. What do you mean by read only replication?

10. Define access control.

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Explain about the DCE component.

Or

(b) Explain about Circuit switching and packet switching.

12. (a) Draw the diagram and explain the RPC model.

Or

(b) What are the different types of Buffering? Explain.

13. (a) Explain in detail about the write request and read request.

Or

(b) What is mutual exclusion? Explain mutual exclusion in distributed systems.

14. (a) Explain the necessary conditions for Deadlock.

Or

(b) How does unstructured file differ from structured files? Explain.

15. (a) Distinguish between the replication and caching.

Or

(b) Explain about the right revocation in access control.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss various issues while designing a distributed operating system.

17. Draw the diagram and explain about the ATM protocol Reference model.

18. Explain about the client server binding in detail with an example.

19. Describe the strategies to handle deadlock in distributed system.

20. Explain about the key distribution problem in cryptography.

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D–1465

Sub. Code
34123

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
MAY 2019.

Second Semester

.NET PROGRAMMING

(CBCS 2018 – 2019 Academic year onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

All questions carry equal marks.

1. Define the term Polymorphism.

2. What is garbage collection?

3. Write a program to concatenate two strings using VB .Net.

4. How to pass data from one form to another?

5. List out the general properties of control.

6. Define the term Exception. List out the various types of errors.

7. State the importance of globat.asax files.

8. List out the properties of HTTP Request and Response types.

9. List out the various ADO Net namespaces.

10. What is the difference between Dataset and Data Table class?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

All questions carry equal marks.

11. (a) Describe in detail about the role of Common Language Runtime (CLR) in .NET.

Or

(b) Explain briefly about assemblies.

12. (a) Write short notes on array and give examples.

Or

(b) How to create MDI Form in VB .Net? Explain with an example.

13. (a) What is the purpose of status bar? Write a program to create status bar and explain.

Or

(b) Write short notes on the following controls:

(i) Combo boxes

(ii) List boxes

(iii) Panel.

14. (a) Write short notes on data controls in ASP .Net.

Or

(b) Write a program to illustrate custom controls in ASP Net.

15. (a) Discuss briefly on ADO Net. What are the benefits of using of ADO .NET?

Or

(b) Write a program to maintain the student data (Roll number, Name, Address, Ph. Number) using ADO NET and SQL Server.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

All questions carry equal marks.

16. Explain the architecture of NET Framework with neat diagram.

17. Describe in detail about looping statements in VB Net.

18. Explain the use of status bars and progress bars with suitable program code.

19. List the different types of validation controls supported in ASP Net and explain their use.

20. Explain in detail about the steps to be followed to create a complete data table.

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D–4484

Sub. Code
34111

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
MAY 2024.

First Semester

DESIGN AND ANALYSIS OF ALGORITHMS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Define the algorithm.

2. What is time complexity?

3. State the recursive algorithm.

4. What is quick sort?

5. Define Warshall's Algorithm.

6. What is the Greedy technique?

7. State the insertion sort.

8. Define Reductions.

9. What is backtracking?

10. State the spanning trees.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) How do you analysing an algorithm?

Or

(b) Discuss about theta notation.

12. (a) How many modulo divisions are made by Euclid's algorithm on two consecutive Fibonacci numbers $F(n)$ and $F(n-1)$ as the algorithm's input?

Or

(b) Illustrate the strassens matrix multiplication.

13. (a) Illustrate the optimal search binary trees.

Or

(b) Discuss about dijikstras algorithm.

14. (a) Elaborate on decrease and conquer.

Or

(b) Describe about Reduction to graph problems.

15. (a) Discuss about the Hamiltonian cycle.

Or

(b) Explain about the connected components.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Discuss about Time and space complexity of an Algorithm.

17. Explain about the Binary search with neat example.

18. Analyse the Knapsack Problem and Memory Functions.

19. How to perform the Heap sort? Explain with example.

20. Illustrate on travelling salesman problem.

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	34112

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
MAY 2024.

First Semester

APPLIED MATHEMATICS FOR COMPUTER SCIENCE

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. What is TF statement?

2. Define Tautology.

3. Write a short note on principal normal forms.

4. Define open statement.

5. What is meant by Trees?

6. Define spanning Trees.

7. Comment on Slack variables.

8. What is LPP?

9. Define transportation problem.

10. What is meant by testing for optimality?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Explain about atomic and compound in detail.

Or

(b) Describe about well-formed formulas.

12. (a) Write about theory of inference.

Or

(b) Comment on theory of inference for predicate calculus.

13. (a) Briefly explain various terminologies of trees.

Or

(b) Differentiate Rooted trees and Binary trees.

14. (a) Discuss about Graphical Solutions.

Or

(b) Write about two phase methods.

15. (a) Explain about Assignment problem.

Or

(b) Briefly explain about Transportation table.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Discuss in detail about connective with example.

17. Briefly explain about theory of inference for predicate calculus example.

18. Explain about Basics concept of graph theory.

19. Discuss about simplex methods with example.

20. Illustrate on Assignment problem and its special cases with example.

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D–4486

Sub. Code
34113

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
MAY 2024.

First Semester

ADVANCED JAVA PROGRAMMING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Write about the java.sql package.

2. What is result set?

3. Mention the need for the Java net Address.

4. List the advantages of Java Networking.

5. Mention the use of Manifest file.

6. What are the advantages of Java Beans?

7. Define servlet.

8. Write about the Servlet Interface.

9. Analyze the use of getContentPane( ) method.

10. Expand AWT and Explain it's use.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) What is JDBC driver? Explain its role and compare various JDBC drivers.

Or

(b) Explain the JDBC components.

12. (a) Explain the commonly used methods of Java URL class.

Or

(b) Demonstrate with a Program to demonstrate methods of InetAddress class.

13. (a) Describe about the Interfaces defined in java.beans.

Or

(b) Explain about using the bound properties.

14. (a) Mention the steps on using the Tomcat For Servlet Development.

Or

(b) Explain about the cookies class in Java.

15. (a) What is the use of JTextComponent? Explain with an example.

Or

(b) Demonstrate with an example the JButton Class.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. How to connect Java application with Oracle and Mysql database using JDBC?

17. Explain the process of creating and running the client application.

18. Discuss the process of Using the Bean Developer Kit.

19. Demonstrate with an example the process of creating and compiling the Servlet.

20. Draw and Explain the hierarchy of Applet.

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	34121

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
MAY 2024.

Second Semester

COMPUTER SYSTEM ARCHITECTURE

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Define ISA.

2. What is a Service Level Agreement?

3. What is Instruction - Level Parallelism?

4. List out the four steps involved in Instruction Execution.

5. Expand SISD.

6. What is Cache Coherence Problem?

7. Tell about N- way Set associative.

8. Define Non- blocking cache.

9. What is Disk power?

10. Differentiate between fault and error.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Explain the impact of Trends of power in IC's.

Or

(b) Discuss various types of benchmarks to measure the performance of real applications.

12. (a) Explain various types of dependencies in ILP.

Or

(b) What are the assumptions made for an ideal processor? Explain it.

13. (a) Illustrate the basic structure of a centralized shared memory multiprocessor.

Or

(b) What properties must be enforced among reads and writes to different locations by different processors? Discuss it.

14. (a) Elaborate the Second Optimization way prediction to reduce hit time.

Or

(b) Describe SRAM technology in memory.

15. (a) Compare Throughput vs Response time.

Or

(b) Classify the Transaction Processing benchmarks in I/O performance.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Describe about quality principles of computer design.

17. Explain various features of Branch target buffers as Advanced Techniques for Instruction Delivery.

18. Analyze on Performance measurement in commercial workload.

19. How to perform the protection via machines? Explain in detail.

20. Illustrate Berkeley's Tertiary Disk with a neat diagram.

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D–4488

Sub. Code
34122

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
MAY 2024.

Second Semester

DISTRIBUTED OPERATING SYSTEM

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. What is distributed operating systems?

2. Define LAN.

3. State the synchronization.

4. What is encoding?

5. State DSM.

6. What is Deadlock?

7. State the distributed file system.

8. Define Fault tolerance.

9. List out the uses of security.

10. State the cryptography.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Write note on distributed operating system evaluations.

Or

(b) Explain about ATM technology.

12. (a) Write about the issues in PC message passing.

Or

(b) Illustrate the Group communication.

13. (a) Evaluate the structure of shared memory.

Or

(b) Discuss about mutual exclusion.

14. (a) Elaborate the file accessing models.

Or

(b) Describe the atomic transaction.

15. (a) Sketch the authentication.

Or

(b) Explain about the design principles.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Elucidate on internetworking with details.

17. Explain about the multi datagram messages.

18. Analyse the clock synchronization.

19. Elaborate the file sharing semantics.

20. Illustrate the potential attacks to computer system.

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D–4489	Sub. Code
	34123

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
MAY 2024.

Second Semester

.NET PROGRAMMING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Write a short note on CLR.

2. Define the term overriding.

3. What is meant by dynamic arrays?

4. Comment on labels.

5. Demonstrate timers.

6. Mention the types of errors.

7. Describe on file types in ASP.NET.

8. Write short notes in Script Manager Control.

9. Define data objects.

10. What is known as a data set?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Write notes on namespaces.

Or

(b) Explain polymorphism in .NET.

12. (a) Classify types of operators in Visual Basic.NET.

Or

(b) Illustrate msgbox.

13. (a) Write notes on scrollbars.

Or

(b) Explain syntax errors.

14. (a) Write notes on HtttpRequest.

Or

(b) Comment on the UpdatePanel control.

15. (a) Give notes on the characteristics of ADO.NET.

Or

(b) Explain the data grid.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Discuss various .NET component.

17. Briefly explain arrays in Visual Basic.NET.

18. Write a Visual Basic.NET program to demonstrate menus.

19. Write notes on List controls in ASP.NET.

20. Explain about Data table and Data row.

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D–4490	Sub. Code
	34131

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
MAY 2024.

Third Semester

CRYPTOGRAPHY AND NETWORK SECURITY

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Define the term threat.

2. What is known as data Integrity?

3. What is the purpose of the S-boxes in DES?

4. Write notes on the inverse add round key transformation.

5. Define the public key.

6. What is known as the Weierstrass equation?

7. Write short notes on Masquerade.

8. Define Cryptanalysis.

9. Write notes on the SSL session.

10. Write notes on Encapsulating Security Payload.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Compare Passive and Active Attacks.

Or

(b) Illustrate a Model for Network Security.

12. (a) What is the difference between differential and linear cryptanalysis?

Or

(b) Illustrate the MixColumns Transformation.

13. (a) Write a note on Public-Key Cryptanalysis.

Or

(b) Comment on the PRNG Based on RSA.

14. (a) Write notes on Brute-Force Attacks.

Or

(b) Comment on the DSS Approach.

15. (a) Give notes on the Handshake Protocol

Or

(b) Explain Pretty Good Privacy.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Illustrate the symmetric cipher model.

17. Discuss about AES structure.

18. Explain Elliptic curve cryptography.

19. Discuss about message authentication codes.

20. Write brief notes on the digital signature standard.

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D–4491	Sub. Code
	34132

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
MAY 2024.

Third Semester

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 Client/Server Computing.

2. What is Cloud Storage?

3. Define the term Collaboration.

4. What is meant by Email Communications?

5. List out various benefits of web-based word processors.

6. Give a note on Google Docs.

7. Define IaaS.

8. What is known about SaaS/PaaS?

9. Define Virtualization.

10. What is meant by Virtualized Data Centre?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) What you understand about Cloud Architecture?

Or

(b) List out various advantages of Cloud Computing.

12. (a) Explain about collaborating on To-Do Lists.

Or

(b) Briefly explain about Collaborating on Group Projects and Events.

13. (a) Write a short note on Online Calendar applications.

Or

(b) Explain about Project Management.

14. (a) Briefly explain about Amazon Web Services.

Or

(b) Describe about Windows Azure Platform.

15. (a) Explain various benefits of virtualization.

Or

(b) Briefly explain about virtual infrastructure requirements.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain various types of Cloud Service Development.

17. Briefly explain about communicating across the community.

18. Discuss about Cloud Storage. Explain about Uses and Risk of Cloud Storage.

19. Explain various classification of cloud implementation.

20. Illustrate on Cloud Virtualization in detail.

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D–4492

Sub. Code
34133

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
MAY 2024.

Third 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. Write short notes on lists.

2. Illustrate the structure of HTML.

3. Define arrays.

4. Define events.

5. What are the levels of DOM?

6. Write short notes in XSLT.

7. Write short notes on the single thread model.

8. Comment on background processing.

9. Write notes on the POST method.

10. How do I run a JSP page?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Write notes on the Multimedia objects in HTML.

Or

(b) Write an HTML program to demonstrate style sheets.

12. (a) Write a Java script to demonstrate functions.

Or

(b) Discuss cookies.

13. (a) Write notes on the browsers and DOM.

Or

(b) Comment on DOM based XML processing.

14. (a) Write notes on the page generations.

Or

(b) Comment on the servlet alternative.

15. (a) Give notes on the HTTP request/response model.

Or

(b) How do I install JSDK? Explain it.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Write an HTML program to demonstrate tables.

17. Illustrate Rollover buttons and moving images.

18. Compare SAX, XSL & XSLT.

19. Comment on the Java Servlets.

20. How do I set up a JSP environment? Explain it.

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D–4493	Sub. Code
	34141

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
MAY 2024.

Fourth Semester

DATAMINING 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. What is data transformation? Give example.

2. Classify OLAP tools.

3. What is data cleaning?

4. How mining can handle noisy data?

5. Define confidence of an association rule.

6. Give an example for maximal frequent item sets.

7. What are the objectives of clustering?

8. What is the need of outlier detection? List two applications of it.

9. Write about the web content mining.

10. List the importance of rapid miner tool.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Explain star schema for multidimensional view.

Or

(b) Elaborate transformation tools.

12. (a) Elaborate the reduction and enrichment in data mining.

Or

(b) Explain data pre-processing.

13. (a) Write about basic concept in Association Rule mining.

Or

(b) What is Bayes theorem? Explain.

14. (a) Explain the CLARA.

Or

(b) Compare and contrast machine learning and data mining.

15. (a) Explain temporal mining.

Or

(b) Elaborate the weka tool.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain about Three-tier data warehouse architecture with a neat diagram.

17. Discuss about tasks of data mining with suitable examples.

18. (a) What are the drawbacks of Apriori Algorithm?

    (b) Write the FP Growth Algorithm.

19. Define Clustering? Explain various types of Data in Cluster Analysis?

20. Elaborate web structure mining.

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D–4494	Sub. Code
	34142

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
MAY 2024.

Fourth Semester

MOBILE APPLICATION DEVELOPMENT

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is carrier?

2. Mention the three different proprietary platforms used in PalmOS.

3. State the common uses of SMS application.

4. State the goal of Utility context.

5. What is clickstreams?

6. Bring out the various elements of mobile design.

7. List the software layers comprise the J2ME architecture.

8. Mention the difference between J2ME and J2SE.

9. Enlist the features of Android OS.

10. What is the framework that is utilized to build an applications interface for iOS?

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) What are the characteristics and benefits of mobile application system? Explain.

Or

(b) Explain in short on GSM.

12. (a) State the Pros and Cons of SMS Application.

Or

(b) Can you provide a step-by-step guide for developing mobile web applications, along with an illustrative example?

13. (a) What are the points to be considered about mobile information architecture?

Or

(b) Bring out the different elements of mobile design.

14. (a) Explain the MIDlet lifecycle in detail.

Or

(b) What are the best ways to solve complex J2ME programming problems?

15. (a) Explain in detail the role of simulators in Mobile Application.

Or

(b) Discuss the design issues in Apple iPhone.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Give a detailed note on the layers of mobile ecosystem.

17. Give a detailed explanation on Location Based Services (LBS) and explain its functionalities.

18. Elaborate on how to create a simple sitemap in mobile architecture.

19. Explain the J2ME architecture and the attributes of manifest file.

20. Discuss different types of mobile OS in detail.

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D–4495

Sub. Code
34143

DISTANCE EDUCATION

M.Sc. (Computer Science) DEGREE EXAMINATION,
MAY 2024.

Fourth Semester

ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

PART A — ($10 \times 2 = 20$ marks)

Answer ALL questions.

1. Define Artificial Intelligence.

2. What is graphs and trees?

3. Write about the inference rules.

4. What is meant by Bayesian networks?

5. List out the characteristic features of expert systems.

6. Give note on expert system shell.

7. Define State space search.

8. What is planning?

9. Write about the machine vision.

10. List the importance of segmentation techniques.

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Explain forward and backward reasoning.

Or

(b) Explain optimization problems.

12. (a) Elaborate inference methods.

Or

(b) Explain pattern recognition.

13. (a) Write about rule based system architecture.

Or

(b) Elaborate expert system components.

14. (a) Outline the monkey and banana problem.

Or

(b) Elaborate on graph planning.

15. (a) Illustrate the A-D conversion.

Or

(b) Elaborate robotic applications of machine vision.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain local search algorithms and optimization problems.

17. Elaborate knowledge engineering process – Handling uncertain knowledge.

18. Explain the reasoning and knowledge acquisition.

19. Discuss various phases in robot task planning.

20. Explain quantization and encoding image storage.

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