D–6477	Sub. Code
	34111

DISTANCE EDUCATION

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

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 the questions.

1. What is theta notation?

2. Define space complexity.

3. List the use of sorting.

4. Define the binary search.

5. What is memory functions?

6. Define Prim's algorithm.

7. Define heap sort.

8. What is reductions?

9. Comment on branch and bound.

10. What is graph traversals?

SECTION B — ($5 \times 5 = 25$ marks)

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

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

Or

(b) Discuss about the pseudo code for algorithms.

12. (a) Set up and solve a recurrence relation for the number of calls made by *F(n)*, the recursive algorithm for computing *n!*.

Or

(b) Discuss about the merge sort.

13. (a) Define optimal binary search trees.

Or

(b) Describe the Kruskals algorithm.

14. (a) Analyse the topological sorting with example.

Or

(b) Elaborate the transform and conquer.

15. (a) Explain the knapsack problem.

Or

(b) Discuss the spanning trees.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Elucidate the linear data structures with neat example.

17. Elaborate the divide and conquer method for quick sort.

18. Discuss about the Floyd's algorithm for the All-Pairs shortest-paths problem.

19. Explain about the depth first search and breadth first search.

20. Discuss about the 8 queens problem.

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DISTANCE EDUCATION

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

First Semester

APPLIED MATHEMATICS FOR COMPUTER SCIENCE

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

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

Answer ALL the questions.

1. What is connective?

2. Define atomic statement.

3. Write a short note on theory of inference.

4. Define quantifiers.

5. What is mean by Rooted trees?

6. Define binary trees.

7. What is mathematical foundation in LPP?

8. Comment on two phase methods.

9. Define constructors in C++.

10. What is meant by abstract classes?

SECTION B — ($5 \times 5 = 25$ marks)

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

11. (a) Explain about tautological implications.

Or

(b) Differentiate conjunction and disjunction.

12. (a) Write about valid formula and equivalence.

Or

(b) Explain about open statements and quantifiers.

13. (a) Differentiate spanning trees and binary trees.

Or

(b) Briefly explain about matrix representations of binary tree.

14. (a) Discuss about simplex methods.

Or

(b) Write about slack of variables.

15. (a) Give a note on assignment methods.

Or

(b) Explain testing for optimality.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Discuss about truth table of a formula with example.

17. Briefly explain about theory of inference, open statement and valid formulae with example.

18. Explain about graph and its representations in detail.

19. Discuss in detail about graphical solutions in LPP.

20. Explain about transportation table and solutions.

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DISTANCE EDUCATION

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

First Semester

ADVANCED JAVA PROGRAMMING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

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

Answer ALL the questions.

1. What is JDBC? Mention its use.

2. List out various JDBC drivers.

3. Write about the java.net packages.

4. What is the stub and skeleton?

5. List the need for Java Beans.

6. Mention the use of JAR utility.

7. List the basic steps in creating the Servlet.

8. What is persistence in Java Beans?

9. Analyze the advantages and disadvantages of JApplet.

10. Write about the setLayout( ) method.

SECTION B — ($5 \times 5 = 25$ marks)

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

11. (a) Illustrate about the JDBC Driver API.

Or

(b) Explain about SQL exception.

12. (a) Explain about Java Inet class methods.

Or

(b) Describe about Socket API.

13. (a) Describe in detail about the constrained properties.

Or

(b) List out the classes defined in java.beans.

14. (a) Describe about the lifecycle of Servlets.

Or

(b) Explain in detail about the session tracking.

15. (a) Describe about the lifecycle of Java Applet.

Or

(b) Explain about the methods of component class.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. How to print total numbers of tables and views of a database using JDBC?

17. Explain with example about the Java RMI.

18. Demonstrate with an example for building a simple bean builder application.

19. Describe in detail about the reading servlet parameters.

20. List out various hierarchy of Java AWT and Explain.

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DISTANCE EDUCATION

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

Second Semester

COMPUTER SYSTEM ARCHITECTURE

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

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

Answer ALL the questions.

1. Comment on magnetic disk technology.

2. What is mean by service accomplishment?

3. Write about hardware based speculation.

4. Define multithreading.

5. What is the need of multiprocessor?

6. State the performance measurements of multiprogramming.

7. What techniques can be used to reduce cache miss rates?

8. State the primary goals in optimizing cache performance.

9. What are the key reliability measures for storage systems?

10. Mention the major crosscutting issues in the design of I/O system.

SECTION B — ($5 \times 5 = 25$ marks)

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

11. (a) Explain the major factors that influence the cost of a computer.

Or

(b) Elaborate note on summarizing performance results.

12. (a) Illustrate the approaches to instruction level parallelism.

Or

(b) Explain in details about dynamic branch prediction.

13. (a) Classify the different mechanism employed for synchronization among processors.

Or

(b) Elaborate note on thread level parallelism.

14. (a) Describe the protection in virtual machine.

Or

(b) Define virtual memory and why is it important in modern computing? Discuss.

15. (a) What are the ways available to measure the I/O performance? Explain.

Or

(b) How do disk storage systems handle and recover from faults? Discuss.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain the various quality principle of computer design.

17. Classify the different types of data hazards.

18. Describe the distributed shared memory architecture.

19. Summarize the segmented virtual memory protections with suitable example.

20. Discuss in detail about types of storage devices.

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D–6481

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34122

DISTANCE EDUCATION

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

Second Semester

DISTRIBUTED OPERATING SYSTEM

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. Define distributed operating system.

2. What is internetworking?

3. Comment on message passing.

4. State the common types of failures that can occur in message passing.

5. Define the term thrashing.

6. Why is synchronization important in distributed systems?

7. What is mean by atomic transaction?

8. What are the various file accessing models in distributed systems?

9. What is the primary goal of cryptography?

10. Define digital certificate.

SECTION B — ($5 \times 5 = 25$ marks)

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

11. (a) Explain the concept of distributed OS with the help of a diagram.

Or

(b) Describe the various design issues in distributed system.

12. (a) List the various issues in PC message passing.

Or

(b) Explain different methods for addressing processes in a distributed system.

13. (a) Classify the different types of consistency models.

Or

(b) Describe alternative approaches to implementing DSM.

14. (a) Explain the distributed file system.

Or

(b) Discuss the different file caching schemes used in distributed systems.

15. (a) Differentiate between authentication and authorization.

Or

(b) Classify the different types of virus.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Describe the different models of distributed operating systems.

17. Explain the requirement of encoding and decoding in communication system.

18. Describe the general architecture of a DSM system.

19. Illustrate the different file modes that can be used in a distributed file system.

20. Describe the encryption and decryption processes in cryptography.

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D–6482	Sub. Code
	34123

DISTANCE EDUCATION

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

Second Semester

.NET PROGRAMMING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

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

Answer ALL the questions.

1. What is garbage collection in .NET?

2. How is abstraction implemented in .NET?

3. State any four string handling functions.

4. Mention the purpose of the MsgBox.

5. What are the different types of errors?

6. What is the purpose of timer control?

7. Which namespace are required to enable the use of database in ASP.NET?

8. What is the purpose of the Global.asax file in an ASP.NET?

9. What are list controls in ASP.NET?

10. Define database.

SECTION B — ($5 \times 5 = 25$ marks)

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

11. (a) Interpret the .NET class library.

Or

(b) Describe the role of CLR in the execution of .NET applications.

12. (a) Explain the data types supported by VB.NET.

Or

(b) How do you resize a dynamic array in VB.NET? Discuss.

13. (a) Explain the use of combo boxes with an example.

Or

(b) How do you use a List View control to display a list of items? Explain.

14. (a) Compare Server-side AJAX with client-side AJAX.

Or

(b) How do you create and use custom controls in ASP.NET? Explain.

15. (a) Explain the characteristics of ADO. NET.

Or

(b) How do you use a Data List control in ASP.NET for data binding? Explain.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Classify the various OOPs concepts implemented in .NET.

17. Explain the different types of operators used in VB.NET.

18. How exceptions are handled in VB.net? Explain.

19. Interpret the different types of validation controls available in ASP.NET.

20. Explain the concept of a data set in ANO.NET and how it is used to manage data.

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	34131

DISTANCE EDUCATION

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

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 the questions.

1. Define a security attack.

2. What is known as cryptography?

3. Define a block cipher.

4. Write notes on interchanging InvShiftRows and InvSubBytes.

5. Define a secrete key.

6. What is an elliptic curve?

7. Write short notes on message authentication.

8. Define a digital signature.

9. Write notes on the SSL connection.

10. List out RFC 4301 services.

SECTION B — ($5 \times 5 = 25$ marks)

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

11. (a) Write notes on the passive attacks.

Or

(b) Comment on the hill cipher technique.

12. (a) Explain stream ciphers and block ciphers.

Or

(b) Illustrate the AES general structure.

13. (a) Write note on public-key cryptography.

Or

(b) Comment on the analog of Diffie-Hellman key exchange.

14. (a) Write notes on message authentication requirements.

Or

(b) Comment on the ElGamal digital signature scheme.

15. (a) Give notes on the Web Security threats.

Or

(b) Explain IP traffic processing.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Illustrate the OSI security architecture.

17. Discuss about block cipher design principles.

18. Explain the RSA algorithms.

19. Discuss about MAC based hash functions.

20. Write brief notes on transport layer security.

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	34132

DISTANCE EDUCATION

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

Third Semester

CLOUD COMPUTING

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

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

Answer ALL the questions.

1. What is cloud computing?

2. Write short note on SaaS.

3. Define the term to-do list.

4. What is meant by collaboration?

5. How Google calendar works?

6. Define online planning and task management.

7. What is VMware?

8. Describe about Microsoft live.

9. Define VIO server.

10. What is cloud server virtualization?

SECTION B — ($5 \times 5 = 25$ marks)

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

11. (a) Who benefits from cloud computing? Explain in detail.

Or

(b) Explain about cloud service development advantages and disadvantages.

12. (a) How to collaborating on contact list? Explain in detail.

Or

(b) Write a note on managing projects.

13. (a) Briefly explain about exploring online scheduling applications.

Or

(b) Explain about event management applications.

14. (a) Discuss various classification of cloud implementation.

Or

(b) Write a note on Google AppEngine.

15. (a) Give a short note on virtualization.

Or

(b) Explain about logical portioning.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Discuss about Pros and Cons of Cloud computing.

17. Briefly explain about collaborating on schedules.

18. Explain about exploring web-based Word processor.

19. Classify various cloud computing platforms.

20. Illustrate on Hypervisor management software.

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DISTANCE EDUCATION

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

Third Semester

WEB TECHNOLOGY

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

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

Answer ALL the questions.

1. What is HTML?

2. Define style sheets.

3. What is meant by Java Script?

4. Comment on cookies.

5. What is meant by DOM?

6. Define XSLT.

7. Comment on servlets.

8. What is meant by caching?

9. Define MVC.

10. What is JSP?

SECTION B — ($5 \times 5 = 25$ marks)

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

11. (a) Write notes on Basic HTML.

Or

(b) Explain about multimedia objects.

12. (a) Write a note on string manipulations in DHTML.

Or

(b) Give a note on data validation in DHTML.

13. (a) Briefly explain about DOM history and levels.

Or

(b) Explain about namespaces and its types.

14. (a) Write note on HTTP Servlet basics.

Or

(b) Comment on client side of retrieving information.

15. (a) Give notes on anatomy of JSP pages.

Or

(b) Explain about HTTP request/response model.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Create a HTML page using Style sheets.

17. Explain about rollover buttons and moving images in Dynamic HTML with Java Script.

18. Write about XML documents and vocabularies.

19. Discuss about Servlet and its life cylce.

20. Briefly explain about creating, installing, running a JSP page with an example.

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	34141

DISTANCE EDUCATION

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

Fourth 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 the questions.

1. How is data warehouse different from database?

2. Compare star and snowflake schema.

3. Define data mining.

4. List out various steps in data mining.

5. What is apriori algorithm?

6. Give note on Bayesian classification.

7. List out all clustering algorithms.

8. What is meant by supervised and unsupervised learning?

9. Write about the text clustering.

10. List out the importance of weak tool.

SECTION B — ($5 \times 5 = 25$ marks)

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

11. (a) Elaborate data warehouse architecture.

Or

(b) Explain extraction tools.

12. (a) Elaborate current trends in data mining.

Or

(b) Explain visualization.

13. (a) Discuss about basic concepts of frequent item set mining.

Or

(b) Explain about FP growth concept.

14. (a) Explain K mediod algorithm.

Or

(b) Elaborate on NN genetic algorithm.

15. (a) Illustrate the tool-rapidminer.

Or

(b) Elaborate on spatial mining.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Discuss about star schema, snowflake and fact constellation schema.

17. Explain any three data pre-processing approaches.

18. Explain about the Apriori algorithm for finding frequent item sets with an example.

19. (a) Write K-means clustering algorithm.

    (b) Write the key issue in hierarchical clustering algorithm.

20. Explain about matlab tool and its uses in data mining.

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D–6487

Sub. Code
34142

DISTANCE EDUCATION

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

Fourth Semester

MOBILE APPLICATION DEVELOPMENT

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. What is LiMo used for?

2. What is symbian?

3. Define web widget.

4. When do we use informative applications?

5. Define prototype.

6. What are the basic ways to define the color palette?

7. Write the basic MIDlet shell.

8. State the use of commandAction( ) method.

9. What is emulator?

10. What are the key features of symbian OS?

SECTION B — ($5 \times 5 = 25$ marks)

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

11. (a) Differentiate TMDA, FDMA and CDMA.

Or

(b) Write a brief account on GPRS.

12. (a) Give a brief account on mobile websites.

Or

(b) What is native applications? Explain.

13. (a) Give a short note on Clickstreams.

Or

(b) Write about the typical flow of information on mobile devices.

14. (a) Explain about MIDlets on the internet.

Or

(b) Write about J2ME software development kits.

15. (a) Elucidate on the role of emulators in mobile application.

Or

(b) How do you establishes the android application environment?

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Elaborate on the various application framework used in mobile application development.

17. Explain in detail on various multiple mobile application medium types.

18. Give a detailed note on mobile information architecture.

19. Explain in detail about 'Hello world' application using wireless toolkit.

20. Explain about frameworks and tools required for developing mobile applications.

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D–6488

Sub. Code
34143

DISTANCE EDUCATION

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

Fourth Semester

ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS

(CBCS 2018 – 2019 Academic Year Onwards)

Time : Three hours Maximum : 75 marks

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

Answer ALL the questions.

1. What is search strategies?

2. Outline the measuring problem solving agents.

3. Write about syntax and semantics.

4. What is meant by pattern recognition?

5. Write note on domain knowledge.

6. List out some features of expert systems.

7. What is path selection?

8. Define triangle table.

9. What is image data reduction?

10. List the robotic applications of machine vision.

SECTION B — ($5 \times 5 = 25$ marks)

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

11. (a) Explain local search algorithm.

Or

(b) Explain forward and backward reasoning.

12. (a) Elaborate knowledge engineering process.

Or

(b) Explain Bayesian networks.

13. (a) Write about reasoning and knowledge acquisition.

Or

(b) Explain the rule based system – using domain knowledge.

14. (a) Outline the means end analysis in a robotic problem.

Or

(b) Elaborate the symbolic spatial relationship and obstacle avoidance.

15. (a) Explain the functions in a vision system.

Or

(b) Elaborate feature extraction in segmentation.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain genetic algorithms and its terminology.

17. Elaborate inference rules and inference methods.

18. Explain the expert systems and its components.

19. Discuss various phases in robot problem solving as a productive system and robot learning.

20. Elaborate quantization, encoding image storage and image data reduction.

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