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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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

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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

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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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	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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	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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	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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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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	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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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

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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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