

1M3N20158

(Pages : 2)

Reg. No:.....

Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester M.Sc Degree Examination, November 2020

MCS3C01 - Advanced Database Management System

(2019 Admission onwards)

Time: 3 hours

Max. Weightage : 30

PART A

Answer any 4 questions. Each question carries 2 weightage

1. Define the terms DDL and DML with examples.
2. What is a trigger? Write an example.
3. What is a serializable schedule?
4. What do you mean by lossless join decomposition.
5. List different types of database users and their roles.
6. Write SQL queries to insert, update and delete rows in an existing relation named EMPLOYEE (EMP_ID, NAME, DEPARTMENT, JOINING_DATE). Also, write a query to add a new attribute 'AGE' to the relation.
7. Define degree and cardinality of a relation with example.

(4x2 = 8 weightage)

PART B

Answer any four questions. Each question carries 3 weightage

8. Write the purpose of each operation in relational algebra with example.
9. Define normal form. Explain 1NF, 2NF, 3NF and BCNF.
10. What are the advantages and disadvantages of OODBMS? Explain.
11. Define data model. Briefly describe various data models.
12. Differentiate between DBMS and conventional file processing system.
13. What are the desirable properties of transaction? Explain.
14. Why is concurrency control needed? Explain.

(4x3 = 12 weightage)

Part C

Answer any two questions. Each question carries 5 weightage

15. Explain the violations caused by each of the following with suitable examples.

- a)dirty-read
- b)non-repeatable read
- c)phantoms

16. a)Explain the overall architecture of the database system in detail.

b)Explain the concept of data independence.

17. Consider the relation schema

Employee (emp_no, name, department, age)

Book (isbn, book_title, authors, publisher)

Loan (emp_no, isbn, date)

a)Draw an ER diagram based on this schema.

b)Write an SQL query to find the names of employees who have borrowed a book published by CBS.

c)Write an SQL query to find the names of employees who have borrowed all books published by CBS.

d)Write a query in relational algebra to find the names of employees who have borrowed a book published by CBS.

e)Write a query in relational algebra to find the names of employees who have borrowed all books published by CBS.

18. a)Illustrate two phase locking protocol with an example.

b)Discuss view serializability and conflict serializability.

(2x5 = 10 weightage)

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FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Third Semester M.Sc Degree Examination, November 2020
MCS3C02 - Principles of Compilers
(2019 Admission onwards)

Time: 3 hours

Max. Weightage : 30

PART A

Answer any 4 questions. Each question carries 2 weightage

1. Explain the difference between compiler and interpreter.
2. Explain the front end and back end of compiler phases.
3. Discuss any two compiler construction tools.
4. Explain context free grammars with example.
5. Discuss the drawbacks of recursive descent parser.
6. Explain basic block and flow graph.
7. Discuss about region based analysis.

(4x2 = 8 weightage)

PART B

Answer any four questions. Each question carries 3 weightage

8. Explain ambiguity, left recursion and left factoring.
9. Explain LMD,RMD and parser tree with examples.
10. Explain LL(1) parsing algorithm with example.
11. Explain the construction of LR(0) parsing table construction with an example.
12. What are the different types of intermediate code generation.
13. Explain retargeting with suitable example.
14. Explain live variable analysis.

(4x3 = 12 weightage)

Part C

Answer any two questions. Each question carries 5 weightage

15. Discuss issues in target code generation.
16. $E \rightarrow E+E/E * E/E - E/E \% E/a/b/c$
Remove left recursion and find out FIRST() and FOLLOW() of all the non terminals used in the productions.
17. Explain operator precedence parser.
18. Explain the shift reduce and reduce reduce conflicts with examples.

(2x5 = 10 weightage)

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Third Semester M.Sc Degree Examination, November 2020
MCS3C03 - Object Oriented Programming Concepts
(2019 Admission onwards)

Time: 3 hours

Max. Weightage : 30

Part A**Answer any 4 questions. Each question carries 2 weightage**

1. What is State retention?
2. How Objects are declaring in Java?
3. What is Dynamic Dispatch Method?
4. What is Stream Class?
5. How threads are creating in Java?
6. Name four types of JDBC drivers.
7. What is Directive Elements in JSP?

(4 x 2 = 8 weightage)**Part B****Answer any four questions. Each question carries 3 weightage**

8. What is the syntax for SWITCH statement? Write a Java program to demonstrate it.
9. Differentiate between Method Overloading and Method Overriding in Java.
10. What is the purpose of wait (), notify () and notifyAll () in Java?
11. Write a Java program to send two numbers from client class. Calculate the sum at the server and send it back to the client.
12. What is JDBC connection in Java?
13. Explain about Scripting Elements in JSP.
14. Discuss about State Diagrams in UML.

(4 x 3 = 12 weightage)**Part C****Answer any two questions. Each question carries 5 weightage**

15. Describe the terms Information hiding, Encapsulation and Polymorphism
16. Write notes on:
(a) Access Modifiers (b) Packages
17. With suitable example explain try, catch, finally and throw.
18. Explain about:
(a) InetAddress (b) Activity Diagrams

(2 x 5 = 10 weightage)

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester M.Sc Degree Examination, November 2020

MCS3E02f – Data Ware Housing and Data Mining

(2019 Admission onwards)

Time: 3 hours

Max. Weightage : 30

PART A**Answer any 4 questions. Each question carries 2 weightage**

1. What is a Data Cube? How do they model Multidimensional Data?
2. Explain Data Integration and Transformation?
3. Compare and Contrast Classification and regression.
4. Outline the approaches to Data Mining.
5. Narrate the working of Simple Bayesian Classifier.
6. Explain Multimedia Data Mining.
7. What is Clustering? How clustering is used in Information Retrieval?

(4x2 = 8 weightage)**PART B****Answer any four questions. Each question carries 3 weightage**

8. Examine the architecture of a Data Warehouse and outline the role of ETL Process.
9. What is Dimension Reduction? Elaborate various strategies to achieve it.
10. Illustrate Classification by Back propagation with a simple example.
11. Elaborate k-means algorithm with a simple example. State its merits and demerits.
12. What are Complex Data Objects? Elaborate Multidimensional Analysis and Descriptive mining of Complex Data Objects.
13. What is Web Mining? Discuss various types of Web Mining?
14. Discuss Rule Based Classification and Support Vector Machines.

(4x3 = 12 weightage)**Part C****Answer any two questions. Each question carries 5 weightage**

15. Dissect the steps involved Knowledge Discovery Process and Elaborate the five primitives for specifying a data mining task.
16. Illustrate the preprocessing steps to improve the accuracy, efficiency and scalability of classification or prediction process.
17. List and elaborate the application and challenges of Data Mining.
18. Recall various approaches to Clustering? Give Examples.

(2x5 = 10 weightage)

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester M.Sc Degree Examination, November 2020

MCS3E01a – Computer Graphics

(2019 Admission onwards)

Time: 3 hours

Max. Weightage : 30

PART A

Answer any 4 questions. Each question carries 2 weightage

1. What is GKS? Explain.
2. Give any four applications of Computer Graphics.
3. What are the four basic primitives for drawing pictures?
4. Give any four Properties of DVST.
5. What are major components of a CRT based Monitor.
6. Which of the display technologies has low power consumption?
7. What is meant by texture mapping? Explain.

(4 x 2 = 8 weightage)

PART B

Answer any four questions. Each question carries 3 weightage

8. What is polygon clipping?
9. Explain Bresenham's-line drawing algorithm
10. What is meant by scaling? Explain.
11. What is parallel projection? Explain.
12. What is text clipping?
13. Differentiate between line filling and flood filling methods.
14. Explain 4-connectedness and 8-connectedness of pixels.

(4x3 = 12 weightage)

Part C

Answer any two questions. Each question carries 5 weightage

15. Give and explain transformation matrix for any three 2D & 3D transformations.
16. Write a note on any three interactive graphics input devices?
17. Explain z-buffer algorithm in detail.
18. With a neat diagram explain working of a CRT monitor.

(2x5 = 10 weightage)