M3N17048 (Pages : 2) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester M.Sc Degree Examination, November 2017

CSS3E04f - Data Ware Housing and Data Mining

(2016 Admission onwards)

Max. Time: 3 hours Max. Weightage: 36

Part A

Answer all *questions*

1. Define Data Warehouse.
2. What is Star schema?
3. What is a data cleaning?
4. Define Frequent Item Sets in Association Mining.
5. What is Classification of Data?
6. Define High Dimensional Data?.
7. Define Text Mining?
8. What is Precision?
9. What is Support?
10. Define Decision Tree?
11. What is Concept Hierarchies?
12. How multidimensional data model can be represented ?

(12 x 1 = 12 weightage)

Part B

Answer any six *questions*

Each question carries 2 weightge

13. Differentiate between Operational data bases systems and data warehouses.
14. What are the different types of OLAP operations?
15. With a neat diagram explain the architecture of a typical data mining system.
16. Explain Classification by Bayesian Classification.
17. Explain how correlation analysis is used in association mining.
18. Explain Constraint based Cluster Analysis.
19. With a neat diagram explain the steps involved in the Knowledge discovery process.
20. Explain different kinds of association rules.
21. Explain Support and Confidence with their importance in Association Mining.

(6 x 2 = 12 weightage)

Part C

Answer any **three** *questions*

Each question carries 4 weightge

22. Explain architecture of a Data warehouse.
23. Give a detailed account of Clustering using Partitioning methods.
24. How concept hierarchy can be generated for data mining.
25. Explain various schemas for representing multidimensional data with its merits and demerits.
26. Explain classification using Support Vector Machines.
27. Discuss descriptive mining of complex data objects.

(3 x 4 = 12 weighta

M3N17049 (Pages : 2) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester M.Sc Degree Examination, November 2017

CSS3E05e - Fundamentals of Big Data

(2016 Admission onwards)

Max. Time: 3 hours Max. Weightage: 36

PART A

Answer ***ALL*** questions. Each question carries *1* weightage.

1. What is Oozie?
2. Why is *Bigdata Analysis* important?
3. What do you understand by Collection?
4. Explain slicing and dicing?
5. What are the four dimensions of *Bigdata*?
6. What is Google API?
7. What is predictive model?
8. What is HBase?
9. What is R Environment?
10. What is Apache Avro?
11. Define spatial database?
12. What is HDFS?

(12 x 1 =12 Marks)

PART B

Answer any ***SIX*** questions. Each question carries 2 weightage.

13. Explain text analytics tools for Big Data.
14. Explain how to create a collection in MongoDB.
15. What are the features of *hadoop*?
16. What are the features *Bigdata*? Explain.
17. Explain Hadoop common components.
18. How distributed computing is related to *Bigdata*? Explain.
19. What are the assumptions on which *hadoop* is built on?
20. Differentiate structured and unstructured data in detail.
21. Compare relational databases and non-relational databases.

(6 x 2 =12 Marks)

PART C

Answer any ***THREE*** questions. Each question carries 4 weightage.

22. Discuss four basic analysis types in *Bigdata* analytics.
23. With a neat diagram explain *BigdataTechnology Stack* and its various layers.
24. What you understand by aggregation? Give a detailed account of aggregation commands in MongoDB.
25. Explain each of the following in detail.
    a. Apache Hive
    b. Apache Lucene
    c. Apache Pig.
    d. Key features of MongoDB.
26. Write notes on:
    a. RecordReader
    b. RecordWriter
    c. Mapper Class
    d. Reducer Class

(3 x 4=12 Marks)

3

M3N17047 (Pages : 2) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester M.Sc Degree Examination, November 2017

CSS3C03 - Object Oriented Programming Concepts

(2016 Admission onwards)

Max. Time: 3 hours Max. Weightage: 36

Part A

Answer all questions.

Each question carries 1 weightage

1. What is JVM?
2. Distinguish between an object and a reference.
3. What is 'finalize' method?
4. What do you meant by Dynamic Method Dispatch?
5. What are Exceptions?
6. Differentiate between Thread and Process.
7. How can develop user defined exception classes?
8. What is Event Listener in Java?
9. What is Swing in Java?
10. What is Frame Window in Java?
11. What is metadata?
12. What is a Component Diagram?

(12 x 1 = 12 Weightage)

Part B

Answer any six questions

Each question carries 2 weightages.

13. Differentiate between Procedure Oriented and Object Oriented Programming.
14. Explain how constructors are overloaded with an example.
15. What is the use of 'protected' access specifier? Give sample Java code to illustrate.
16. Explain with sample Java code, the effect of using the keyword 'final' with
    (a) A variable (b) A method (c) A class
17. Explain about Thread Priority.
18. Write an applet to find and display the sum of two numbers such that the numbers are passed from the webpage as parameters to the applet.
19. Explain about Datagrams.
20. How do you create an object of Inet Address class?
21. Discuss Object Interaction Diagrams in UML. When to use them?

(6 x 2 = 12 Weightage)

Part C

Answer any three questions.
Each question carries 4 weightages

22. Describe the terms Data hiding, Encapsulation, Polymorphism and Inheritance.
23. Write a Java program to define a class student with details such as name, roll number, marks f three students, method for reading the details and method to print roll number, name and to marks.
24. How Multiple Inheritance can be implemented in Java? Explain.
25. Explain the concept of Packages in Java. Write down the steps of adding classes to a Package with an example.
26. With suitable examples explain the following:
    (a) Drawing of Lines (b) Arcs (c) Rectangles (d) Polygons
27. (a) Write a Java program to send two numbers from client class. Calculate the sum at the serv and send it back to the client.
    (b) Draw a class diagram for a book with following structure: a book comprises of seve chapters. Each chapter has several sections, each of which comprises several paragraphs a figures. Each paragraph can have several sentences, each of which comprises several words.

(3 x 4 = 12 Weighta

4

1M3N17046 (Pages : 2) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester M.Sc Degree Examination, November 2017

CSS3C02 - Principles of Compilers

(2016 Admission onwards)

Max. Time: 3 hours Max. Weightage: 36

Part A

Answer all questions

Each question carries 1 weightage

1. Explain ambiguity.
2. Explain LMD and RMD
3. What is reverse of right most derivation ?
4. Explain control flow analysis
5. What is redundancy elimination
6. Define activation record
7. Explain RR and SR conflicts
8. What is syntax directed translation?
9. What is annotated parse tree?
10. What is the advantage of Interpreter ?
11. What is bootstrap compiler?
12. Explain context free grammar. **(12 x 1= 12 weightage)**

Part B

Answer any six questions

Each question carries 2 weightages.

13. Design a DFA that rejects all words for which the last two letters match.
14. Give CFG for the language $L=a^n b^n c^m d^m / n,m>=1$
15. Explain SR and RR conflicts in LR(1) parsers.
16. Explain the role of error handler.
17. Explain compiler construction tools.
18. Explain parsing table construction of LL(1) parser with an example
19. Explain data flow and alias analysis .
20. Explain type checking and type conversion.
21. Explain control flow translation of SWITCH statements.

(6 x 2 = 12 Weightage)

Part C

Answer any three questions

Each question carries 4 weightages

22. Design a minimal state DFA which is not containing 101 as a substring.

23. Design the LR(0) parser for the below grammar

    E→T+E/T

    T→i

24. Discuss the Static vs. Dynamic allocation.

25 Discuss the code generation issues.

26. Explain live variable analysis with an example

27. Explain DAG and Three address code representation with examples.

(3 x 4 = 12 Weightage)

1M3N17045 (Pages : 2) Reg. No:.....

Name: .....

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester M.Sc Degree Examination, November 2017

CSS3C01 - Advanced Database Management System

(2016 Admission onwards)

Max. Time: 3 hours Max. Weightage: 36

PART A

Answer all questions.

Each question carries 1 weightage

1. Define database normalization.
2. Define QBE.
3. Define database schema.
4. What is physical data independence.
5. What is update anomaly?
6. What is a transaction processing system?
7. Define granularity.
8. What are the advantages of distributed database?
9. What is the difference between procedural and nonprocedural DMLs?
10. What is a transaction?
11. What is the concept of polymorphism in OOD?
12. What you mean by durability?

(12 x 1 = 12 Weightage)

PART B

Answer any six questions.

Each question carries 2 weightages.

13. Differentiate tuple relational calculus and the domain relational calculus.
14. Explain functional dependency with an example.
15. Explain Boyce Codd Normal Form (BCNF) with an example.
16. Explain ACID properties.
17. Explain transaction states with a neat state transition diagram.
18. Explain two-phase locking technique for concurrency control.
19. Explain the use of CREATE command with example.
20. Differentiate SQL assertions and SQL triggers.
21. Discuss different types of data types that are allowed for SQL attributes.

(6 x 2 = 12 Weightage)

PART C

Answer any three questions.
Each question carries 4 weightages.

22. Explain various concurrency control techniques.
23. Draw an ER-Diagram of a college; identify the entities, relationships and attributes.
24. Give an overview of OQL.
25. Explain SQL join with examples.
26. Explain in detail about various DDL statements with examples.
27. Create the tables Employee and Department with department-number as the foreign key. Also write down SQL queries for the following:
    (i) Display the number of employees of each department.
    (ii) Display the age of the oldest employees of each department.
    (iii)Display the employee details whose salary is greater than the average salary.

(3 x 4 = 12 Weightage)