

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester M.Sc Degree Examination, November 2016

CSS3E05e - Fundamentals of Big Data

(2015 Admission onwards)

Max. Time: 3 hours

Max. Weightage: 36

PART AAnswer **ALL** questions. Each question carries 1 weightage.

1. What do you mean by *Bigdata Analysis*?
2. What is a Collection?
3. What is meant by slicing and dicing?
4. What are the four dimensions of *Bigdata*?
5. What is meant by CMS?
6. What is Hive?
7. What is NoSQL?
8. What is HBase?
9. What is MongoDB?
10. What is R Environment?
11. Give name of any three MNCs which use Bigdata.
12. Define Pig?

(12 x 1 =12)

PART BAnswer any **SIX** questions. Each question carries 2 weightage.

13. What are the features Bigdata? Explain.
14. How distributed computing is related to Big Data? Explain.
15. Give any four features of MongoDB.
16. Differentiate structured and unstructured data in detail.
17. Explain how to create a collection in MongoDB.
18. Illustrate the role of a CMS in big data management.
19. Explain text analytics tools for Big Data.
20. Compare relational databases and non relational databases.
21. Explain Hadoop common components.

(6 x 2 =12)

PART CAnswer any **THREE** questions. Each question carries 4 weightage.

22. Explain Big Data Technology Stack and its various layers.
23. Explain Characteristics of a Big Data Analysis Framework.
24. What did you understand by aggregation? Give a detailed account of aggregation commands in MongoDB.
25. Explain the following MongoDB commands in detail.
 - a. \$slice
 - b. \$type
 - c. \$size
 - d. \$inc
26. Write notes on:
 - a. RecordReader
 - b. RecordWriter
 - c. Mapper Class
 - d. Reducer Class

(3 x 4=12)

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester M.Sc Degree Examination, November 2016

CSS3E04f - Data Ware Housing and Data Mining

(2015 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 cube?
4. What is concept discrimination?
5. What is meant by concept hierarchy?
6. Define Association Rule Mining.
7. Define Classification of Data?
8. What is OLAP?
9. What is Data Mining?
10. What is Spatial Data Mining?
11. What is Graph Mining?
12. What do you mean by High Dimensional Data?

(12 x 1 = 12 weightage)

Part B*Answer any six questions**Each question carries 2 weightge*

13. Explain different schemas for representing multidimensional data.
14. Describe various OLAP operations that can be performed in multidimensional data.
15. With a neat diagram explain the architecture of a typical data mining system.
16. Explain Classification by Decision Tree Induction.
17. Explain Multimedia data mining.
18. Explain Constraint based Cluster Analysis.
19. With a neat diagram explain the steps involved in the Knowledge discovery process.
20. Explain how the accuracy of a classifier can be evaluated.
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 the ETL Process in building a Data warehouse.
23. Discuss how the major Clustering Methods are categorized.
24. Discuss various issues regarding classification and prediction.
25. Explain various methods for data pre-processing.
26. Explain Basic Measures for Text Retrieval in Text Mining.
27. Discuss descriptive mining of complex data objects.

(3 x 4 = 12 weighta

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(Pages :2)

Reg. No:.....

Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Third Semester M.Sc Degree Examination, November 2016
CSS3C03 - Object Oriented Programming Concepts
(2015 Admission onwards)

Max. Time: 3 hours

Max. Weightage: 36

Part A

Answer *all* questions.

1. List the features of Java.
2. What is bytecode ?
3. What is Literals?
4. What is Method Overriding?
5. What do you mean by Multilevel Inheritance?
6. How we can use the new operator in Java?
7. What is a Thread?
8. What are the different types of Errors?
9. Represent the class hierarchy of Input Stream Classes?
10. Write down any two methods of URL class.
11. What is Class Diagrams in UML?
12. What is an event in a State Diagram?

(12 x 1 = 12 Weightage)

Part B

Answer any *six* questions

13. Explain Control Structures in Java.
14. Explain how Encapsulation is implemented in Java programming.
15. Explain about Parameterized Constructors in Java.
16. Which are the frequently used API packages in Java? Explain?
17. Explain about Thread Synchronization.
18. With suitable example explain passing of parameters to Applets.

19. Explain the steps in reading from and writing to a Socket.
20. Write note on Datagrams.
21. Discuss Object Interaction Diagrams in UML. When to use them?

(6 x 2 = 12 Weightage)

Part C

Answer any **three** questions.

22. (a) With suitable example explain the structure of a Java program.
(b) Explain how Java achieves Platform Independence.
23. Write a complete Java program to: to create a class Triangle with the three sides A, B and C as members data. Include member functions for the following:
 - (a) To accept the sides (b) Display the sides (c) Find whether the triangle is right angles.
24. (a) Does Java support the concept of Multiple Inheritance? Explain.
25. (a) What do you mean by Multithreading?
(b) Give an appropriate Java program illustrating the concept of Multithreading.
26. (a) Explain the features of AWT.
(b) Write and explain a simple AWT program.
27. (a) What are the major components of JDBC?
(b) Explain JDBC architecture.

(3 x 4 = 12 Weightage)

Handwritten calculation:

$$\begin{array}{r} 107 \\ \times 60 \\ \hline 642 \\ 6420 \\ \hline 64200 \end{array}$$

Handwritten calculation:

$$\begin{array}{r} 62 \\ \times 28 \\ \hline 496 \\ 1240 \\ \hline 1736 \end{array}$$

Handwritten calculation:

$$\begin{array}{r} 32 \\ \times 55 \\ \hline 160 \\ 1760 \\ \hline 17600 \end{array}$$

Handwritten calculation:

$$\begin{array}{r} 32 \\ \times 25 \\ \hline 160 \\ 640 \\ \hline 800 \end{array}$$

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Reg. No:.....

Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE
Third Semester M.Sc Degree Examination, November 2016
CSS3C02 - Principles of Compilers
(2015 Admission onwards)

Max. Time: 3 hours

Max. Weightage: 36

Part A

Answer all questions

1. Explain left factoring.
2. Explain Left recursion.
3. What is the value of k in LR(K)parser?
4. Explain DAG.
5. What is a basic block?
6. Define activation tree.
7. Why shift reduce parsers follows reverse of right most derivation?
8. What is coercion?
9. What is the meaning of analytical phase in compiler?
10. Interpreter is slow. Why?
11. What is the meaning of compiler to compiler?
12. Explain regular grammar. (12 x 1 = 12)

Part B

Answer any six questions

13. How many states are needed to denote the expression $(0+1)(0+1)\dots\dots\dots n$ times.
14. Design a minimal state DFA in which the set of all strings over $\{0,1\}$ where the 10^{th} symbol from the right end is 1.
15. Explain SR and RR conflicts.

16. Explain the role of lexical analyzer,
17. Explain Input Buffering.
18. Explain the different types of Intermediate code generation
19. Explain Flow graph.
20. Explain different parameter passing techniques
21. Explain function and operator overloading (6 x 2 = 12)

PART C

Answer any three questions

22. Design a minimal state DFA which accepts even number of zeroes and odd number of ones
23. Design the LL(1) parsing table for the below grammar
S → A
A → 0A/1B
B → 1A/0
24. Discuss the storage allocation strategies.
25. Discuss the code generation issues.
26. Explain the different types of machine dependent and machine independent optimizations
27. Find the FOLLOW() sets for the below mentioned grammar
S → aBDh
B → cC
C → bC/ε
D → EF
E → g/ε
F → f/ε (3 x 4 = 12)

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Reg. No:.....

Name:

FAROOK COLLEGE (AUTONOMOUS), KOZHIKODE

Third Semester M.Sc Degree Examination, November 2016

CSS3C01 - Advanced Database Management System

(2015 Admission onwards)

Max. Time: 3 hours

Max. Weightage: 36

Part A

Answer all questions

Each question carries 1 weightage

1. Define database model.
2. What do you mean by recursive relationships?
3. Compare stored and derived attributes.
4. Define normalization.
5. Define functional dependency.
6. Compare WHERE and HAVING clause in SQL.
7. What is a trigger?
8. Define a database transaction.
9. What is a schedule?
10. What are read and write locks?
11. What do you mean by data fragmentation in distributed systems?
12. What is the need for complex data types in DBMS?

(12 x 1 = 12 weightage)

Part B

Answer any six questions

Each question carries 2 weightage

13. Explain constraints on relationship types.
14. Explain specialization and generalization with suitable example.
15. Explain dependency preservation property of decomposition.
16. Explain lossless join property of decomposition.
17. What are aggregate functions? Explain any four aggregate functions with examples.
18. What are virtual tables and its uses? Write SQL syntax to create a view.
19. Explain the states for transaction execution using state transition diagram.
20. Explain conflict serializability using suitable example. Write algorithm for testing conflict serializability.
21. What are the advantages and disadvantages of distributed database management systems?

(6 x 2 = 12 weightage)

19. Explain the steps in reading from and writing to a Socket.
20. Write note on Datagrams.
21. Discuss Object Interaction Diagrams in UML. When to use them?

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Part C

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