Exam Code: 226703 **Paper Code: 3269**
(20)

Programme: Master of Science (Computer Science)
Semester-III

Course Title: Data Mining and Data Warehousing

Course Code: MCSL–3111

Time Allowed: 3 Hours **Max Marks: 80**

Note: Attempt five questions in all, selecting at least one from each section, fifth question may be attempted from any section. Each question carries 16 marks.

Section A

1. What are the Objectives of Data Mining. What kind of Data be Mined? (8,8)
2. What is Data Pre-processing? Explain the need and procedure of Data Cleaning. (8,8)

Section B

3. Explain the differences between Operational database systems and data warehouse. (16)
4. Explain Data Warehouse Architecture in detail. (16)

Section C

5. Write notes on the following:
   (a) Classification
   (b) Association Rules (8,8)
6. What is Clustering? Explain various Clustering methods. (6,10)

Section D

7. What are the Application areas and new trends in Data Mining? (16)
8. Explain Data Mining Query Language. (16)

Exam Code: 226703 **Paper Code: 3270**

Programme: Master of Science (Computer Science)

Semester: III

Course Title: System Software

Course Code: MCSL-3112

Time Allowed: 3 Hours **Max. Marks: 80**

Note:- Attempt five questions in all, selecting at least one question from each section. Fifth question may be attempted from any section. Each question carries 16 marks.

Section A

1. What is software? How can a software be categorised? Explain different components of system software. 16
2. Write short notes on:
   i. Linker ii. Compiler and Assembler 16

Section B

3. Explain in detail the working and an algorithm of one pass assembler. 16
4. What is a macro? How can a macro be defined and expanded? How can the concatenation of macro parameters be performed? 16

Section C

5. What is a compiler? Explain different phases of the compiler.16
6. Write a note on: 16
   i. Storage management ii. Cross and P-Code compiler

Section D

7. What is a linker? Explain the concept of dynamic linking in detail. 16
8. Write a note on:
   i. Database Management system
   ii. Interactive Debugging system 16

Exam Code: 226703 **Paper Code: 3271**
(20)

Programme: Master of Science(Computer Science)
Semester-III

Course Title: Advanced Web Technologies

Course Code: MCSL–3113

Time Allowed: 3 Hours **Max Marks: 80**

Note: There are eight questions in the question paper divided into four sections A-D of 16 marks each. Attempt atleast one question from each section. The fifth question may be attempted from any section.

Section A

1. What do you understand by. NET framework? Explain its components in detail. (16)
2. Write importance of validation controls. Explain Required field validator and Compare validator controls with examples. (16)

Section B

3. a) What is Image Map control? Explain it with example. (10)

   b) How can you edit title in master pages? (6)

4. Write various ASP.NET parameters used with SQL data source control. (16)

Section C

5. What are various fields used with Grid view control? Explain in detail. (16)
6. Explain
   a) Radio button list control
   b) Bulleted list control with examples (16)

Section D

7. How can you create data access components in ADO.NET (16)
8. Write note on the following:
   a) Partial page caching
   b) SQL cache dependencies
   c) Cookies
   d) SQL Date Source (4x4=16)

CEO office 16/12/24 Eve
Term-I

Exam Code: 226703 **Paper Code: 3272**
(20)

Programme: Master of Science(Computer Science)
Semester-III

Course Title: Design and Analysis of Algorithms

Course Code: MCSL–3114

Time Allowed: 3 Hours **Max Marks: 80**

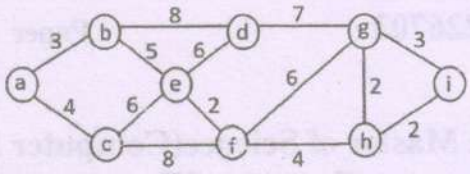
Note : Attempt five questions in all, selecting atleast one question from each section. Fifth question may be attempted from any section. Each question carries 16 marks.

Section — A

1. (a) How performance of an algorithm is measured for time and space? Explain through example. (8)
   (b) What is Asymptotic Notation? How and which of these notations are used to calculate best, average and worst cases? (8)
2. How binary search is different from linear search? Write the binary search algorithm and compute its time complexity. (16)

Section — B

3. What is minimum cost spanning tree? Explain Kruskal's algorithm to obtain minimum spanning tree and apply it to following graph? (16)



4. What is greedy method? Write an algorithm to solve single source shortest path problem using greedy method. (16)

Section — C

5. (a) Explain Multistage graph problem? (6)
   (b) Explain how to solve traveling salesman problem by method of dynamic programming and analyse the complexity of algorithm. (10)
6. Write short note on
   (a) Binary search tree
   (b) 0/ 1 Knapsack problem (8+8=16)

Section — D

7. What are the different ways in which the graph is represented in computer memory? Compare the efficiencies of BF S and DFS as searching algorithms used for graphs and trees. (16)
8. Explain the following:
   (a) 4 queens problem
   (b) Hamiltonian cycles (8+8=16)

Exam Code: 226703 **Paper Code: 3273**
(20)

Programme: Master of Science(Computer Science)
Semester-III

Course Title: Software Testing

Course Code: MCSL–3115

Time Allowed: 3 Hours **Max Marks: 80**

Note: Candidates are required to attempt five questions, selecting at least -one question from each section. The fifth question may be attempted from any section. Each question carries 16 marks.

Section — I

1. a. Explain Software testing as an engineering activity.
   b. Explain term metrics and quality metrics. 16
2. Explain Role of Process in Software Quality. Explain Software Development Process. 16

Section — II

3. Explain White Box testing vs Black Box testing in detail along with their various types. 16
4. Explain Equivalence testing and Boundary value testing in detail. 16

Section — III

5. Explain various types of UML Structural and UML Behavioural diagrams. 16

6. Explain Object Oriented Testing Methodologies in detail. 16

Section — IV

7. What do you mean Software Test Automation? 'What are various skills required for Software Test Automation? 16

8. Explain the following terms: 16

   a. GUI Testing

   b. Regression Testing

   c. Scenario Testing