Exam Code: 223703 **Paper Code: 3264**

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: 70**

Note: Candidates are required to attempt 5 questions selecting at least one question from each section. Fifth question can be attempted from any section. Each question carries 14 marks.

(Section-A)

1. Explain Data Mining also explain how one can use the predictive modelling for data modelling for data mining.
2. Compare and contrast supervised and unsupervised learning. Give examples of algorithms used in both approaches.

(Section-B)

3. Discuss various problems with Data Warehousing. Explain mapping the data warehousing to Multi-process Architecture.
4. Is it necessary that every small and big company should have a data warehousing. Justify your answer? Differentiate between OLAP and OLAM.

(Section-C)

5. Define Data mining and also write down the different types of Data Mining techniques with suitable example.
6. Define clustering. Why clustering is important in Data Mining? Write its uses.

(Section-D)

7. Explain Data Mining Query Language with syntax/query of at least three tasks.
8. Write down the current trends used in data mining. Explain the various applications areas where data mining is used.

Exam Code: 223703 **Paper Code: 3265**

Programme: Master of Science (Computer Science) Semester III

Course Title: System Software

Course Code: MCSL-3112

Time Allowed: 3 Hours **Max. Marks: 70**

Note: Candidates are required to attempt 5 questions selecting at least one question from each section. Fifth question can be attempted from any section. Each question carries 14 marks.

Section - A

1. What is software? Explain different components of system software. 14

2. Write short notes on:
   - Loader
   - Translator 2 X 7 = 14

Section - B

3. Explain in detail the working of two pass assemblers with an algorithm. 14

4. What is a macro? How can a macro be created? Discuss the conditional macro expansion in detail? 14

Section - C

5. What is a compiler? Explain different phases of the compiler. 14

6. What is code optimization? Why can it be used? Explain different techniques that can be used for code optimization. 14

Section - D

7. What is a loader? Explain different types of loader in detail. How can a program be linked? 14

8. Write a note on:
   - Operating System
   - Text Editor 2 X 7 = 14

Exam Code: 223703 **Paper Code: 3266**

Programme: Master of Science (Computer Science) Semester III

Course Title: Advanced Web Technologies

Course Code: MCSL-3113

Time Allowed: 3 Hours **Max. Marks: 70**

Note: Candidates are required to attempt 5 questions selecting at least one question from each section. Fifth question can be attempted from any section. Each question carries 14 marks.

Section - A

Q1. Write ASP.NET validation controls with examples. 14

Q2. Explain Radio button and checkbox controls with examples. 14

Section - B

Q3. a) Write a code to explain different page views in ASP.NET.
b) How can load master pages dynamically? 9, 5

Q4. Explain different ASP.NET parameters used with SQL data source control. 14

Section - C

Q5. Explain various fields that are used with Grid view control. 14

Q6. Explain Drop down list and Radio button controls with examples. 14

Section - D

Q7. What do you mean by Cookies? Explain Browser and session cookies. 14

Q8. Write a note on following:

a) Page output caching
b) ADO.NET
c) Caching
d) Validation Summary 4 X 3.5 = 14

Exam Code: 223703
(20)

Paper Code: 3267

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: 70

Note: There are four sections, each having 2 questions. Attempt five questions, selecting atleast one from each section. All the questions carry equal marks(14 each). Fifth question can be attempted from any section.

Section — A

1. (a) What is an algorithm? Explain Worst case, Best case and Average case complexity of an algorithm. 7
   (b) What do you mean by asymptotic notations? Explain Big O notation and omega notation. 7
2. (a) How maximum and minimum is found using "Divide and Conquer" technique? Explain. 7
   (b) Explain quick sort algorithm along with complexity. 7

Section — B

3. (a) Generate minimum cost spanning tree using Kruskal's algorithm. 9

   (b) Demonstrate Knapsack problem along with example. 5

4. (a) How the problem is solved-using greedy method? Explain various issues also. 7

   (b) How single-source shortest path is implemented to solve problem? Explain using example. 7

Section — C

5. What is 0/1 Knapsack problem? Describe by giving an example, how 0/1 Knapsack problem can be solved using dynamic programming technique of designing and algorithm. 14

6. Explain how to solve traveling salesman problem by the method of dynamic programming. 14

Section — D

7. (a) How graph coloring is solved using Backtracking? Explain. 7

   (b) How an item is searched in Binary trees? Explain. 7

8. Explain the use of Backtracking method of solving four queens problem giving its algorithm. (14)

Exam Code: 223703 **Paper Code: 3268**

Programme: Master of Science (Computer Science) Semester III

Course Title: Software Testing

Course Code: MCSL-3115

Time Allowed: 3 Hours **Max. Marks: 70**

Note: Candidates are required to attempt 5 questions selecting at least one question from each section. Fifth question can be attempted from any section. Each question carries 14 marks.

Section - A

1. What do you mean by defects? Explain their origin and cost. 14
2. What do you mean by Software Testing? Explain general Principals of Software Testing. 14

Section – B

3. A. Explain control flow testing technique with examples. 7
   B. What do you mean by reviews in software testing? Explain review process. 7
4. A. Explain Boundary value technique with examples. 7
   B. Explain difference between white box testing and black box testing in detail. 7

Section – C

5. Explain UML class diagram and sequence diagrams with examples. How they are useful in software testing? 14
6. Explain various issues in involved Object Oriented Testing? 14

Section – D

7. A. Explain Regression testing. Explain various techniques for achieving Regression testing. 7
   B. Explain the terms test planning and test strategies. 7
8. Explain Software Test Automation? What are various skills required for Software Test Automation? 14