(d) Normalize the two variables based on *z*-score normalization.

(e) Calculate the correlation coefficient (Pearson's product moment coefficient). Are these two variables positively or negatively correlated. **15**

Unit II

3. Discuss Constraint-Based Association Mining. Also explain the various types of constraints related to association. **15**

4. (a) "Strong Rules Are Not Necessarily Interesting" Justify with the help of an example. **8**

(b) Describe the concept of multi-dimensional association rules from relational databases. **7**

Unit III

5. With the help of one example the decision tree method of classification. **15**

No. of Printed Pages : 05 **Roll No. .....**

EE-689

M.C.A. EXAMINATION, Dec. 2018

(Fifth Semester)

(B. Scheme) (Main & Re-appear)

MCA663

DATA WAREHOUSING AND MINING

Time : 3 *Hours*] [*Maximum Marks :* 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) What is the difference between discrimination and classification ? Between characterization and clustering. Between classification and prediction. For each of these pairs of tasks, how are they similar ? **8**

(b) Describe three challenges to data mining regarding data mining methodology and user interaction issues. **7**

2. Suppose a hospital tested the age and body fat data for 18 randomly selected adults with the following result :

Age	%fat
23	9.5
23	26.5
27	7.8
27	17.8
39	31.4
41	25.9
47	27.4
49	27.2
50	31.2
52	34.6
54	42.5
54	28.8
56	33.4
57	30.2
58	34.1
58	32.9
60	41.2
61	35.7

(a) Calculate the mean, median, and standard deviation of age and %fat.

(b) Draw the box plots for age and %fat.

(c) Draw a scatter plot and a *q-q* plot based on these two variables.

6. Describe naïve Bayesian classification method in detail. **15**

Unit IV

7. What are various types of OLAP Servers ? Compare functioning of each. **15**

8. Discuss the Three-Tier Data Warehouse Architecture. **15**

6. Describe naïve Bayesian classification method in detail. **15**

Unit IV

7. What are various types of OLAP Servers ? Compare functioning of each. **15**

8. Discuss the Three-Tier Data Warehouse Architecture. **15**