Total No. of Questions : 5]

SEAT No. :

P-3779

[Total No. of Pages : 2

# [6025]-57

## M.B.A.

## 304 - BA - SC -BA-03 : ADVANCED STATISTICAL METHODS USING R

## (2019 Pattern) (Semester - III)

*Time : 2½ Hours]* *[Max. Marks : 50*

***Instructions to the candidates:***

1) ***All questions are compulsory.***
2) ***Each question carries 10 marks.***

***Q1)*** **Solve any Five of the following :** **[5 × 2 = 10]**

a) Define Probability and give an example.

b) State assumptions of multiple regression analysis.

c) What is autocorrelation in time series?

d) Mention two methods of dimension reduction.

e) Sketch classification table in logistic regression.

f) Enlist models which are both regression and classification in machine learning.

g) Define null and alternative hypothesis.

h) Write properties of the Normal Distribution.

***Q2)*** **Solve any two of the following :** **[2 × 5 = 10]**

a) Describe test procedure for testing significance of correlation coefficient.

b) Explain linear discriminant analysis model.

c) Discuss the application of Bayes theorem in data science.

***P.T.O.***

***Q3)*** **Solve any one of the following :** **[1 × 10 = 10]**

a) Describe the procedure of one way ANOVA with example.

b) Discuss the Normal distribution and its applications in statistical analysis.

***Q4)*** **Solve any one of the following :** **[1 × 10 = 10]**

a) Explain the important components of a time series. Describe Holt-Winters smoothing procedure.

b) Differentiate between supervised and unsupervised machine learning with example.

***Q5)*** **Solve any one of the following :** **[1 × 10 = 10]**

a) Explain ARIMA model. How does one forecast an ARIMA model in time series analysis?

b) Critically evaluate linear regression and logistic regression technique.