

Total No. of Questions : 5]

SEAT No. :

PC3053

[6380]-3017

[Total No. of Pages : 2

S.Y. M.B.A.

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

(2019 Revised Pattern) (Semester- III)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) All Questions are compulsory.
- 2) Make appropriate assumptions whenever required.

Q1) Answer the following questions (Any Five):

[5×2=10]

- a) What is Linear Regression?
- b) Define Probability.
- c) What is the use of aov() function in R?
- d) Write down the syntax for calculating mean in R. Also explain the parameters.
- e) What is apply() and lapply() function in R?
- f) What is the use of ts() function in R?
- g) What is Linear Discriminant Analysis (LDA)?
- h) What is probability in R programming?

Q2) Answer the following questions (Any two)

[10]

- a) Explain any two poisson functions in R with syntax.
- b) Differentiate between linear regression and logistic regression.
- c) Explain Z test of hypothesis testing. Write the syntax and explain in detail.

Q3) Answer the following questions (Any one)

[10]

- a) Explain any two machine learning models which are used for classification.
- b) Explain ARIMA Model. How ARIMA Model is used for time series analysis.

P.T.O.

Q4) Answer the following questions (Any one)

[10]

- a) What is Dimensionality Reduction? State the advantages and disadvantages of dimensionality reduction.
- b) Differentiate between Descriptive analytics and predictive analytics.

Q5) Answer the following questions (Any one)

[10]

- a) Write short Notes (Any Two)
 - i) Holt - winters Smoothing Procedures
 - ii) T - Test in R
 - iii) Bayes Theorem
- b) What is unsupervised learning? Explain k - means clustering Algorithm with example.

Total No. of Questions : 5]

PB2090

SEAT No. :

[Total No. of Pages : 2

[6201]-317

S.Y.M.B.A.

304-BA-SC-BA-03 : ADVANCED STATISTICAL METHODS USING R
(Revised 2019 Pattern) (Semester-III)

Time : 2½ Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) *All questions are compulsory.*
- 2) *Each questions carries 10 marks.*
- 3) *Figures to the right indicate full marks.*

Q1) Solve any five of the following.

[5×2=10]

- a) Write properties of the normal distribution.
- b) Define probability and give an example.
- c) State assumption of multiple regression analysis.
- d) What is the use of `ts()` function in R?
- e) Define Null and alternative hypothesis.
- f) What is the use of Z-test?
- g) Define predictive analysis.
- h) What is `apply()` and `lapply()` function in R.

Q2) Answer the following questions. (Any two)

[10]

- a) Explain T-test of hypothesis testing in R. Write syntax and explain in detail.
- b) Discuss the application of Bayes theorem in data science.
- c) Describe test procedure for testing significance of correlation of coefficient.

P.T.O.

Q3) Answer the following question. (Any one)

[10]

- a) Examine ANOVA in R? State the assumptions and explain on way ANOVA in detail. State benefits also.
- b) What do you mean by dimension reduction? Explain linear discrimination analysis (LDA) with syntax also explain application of LDA in Marketing domain.

Q4) Answer the following question. (Any one)

[10]

- a) Describe descriptive analytics in R. Explain any three functions of descriptive analytics in R.
- b) What is logistics regression in R? Assume suitable data and explain how do you interpret regression coefficients in R.

Q5) Answer the following question. (Any one)

[10]

- a) Explain the concept of Time series analysis explain. How time series analysis is used for business forecasting?
- b) Write short notes (Any one)
 - i) F Test in R.
 - ii) Holt-wintas smoothing procedure
 - iii) Cross Tabulation.

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