Printed Pages: 02 **Sub Code:RMB104/RMT104**

Paper Id: 270129 **Roll No.** | | | | | | | | | | |

MBA

(SEM-I) THEORY EXAMINATION 2018-19

BUSINESS STATISTICS

Time: 3 Hours ***Total Marks: 70***

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. 2 x 7 = 14

a. What is Statistics?
b. What is Mean Absolute Deviation?
c. What is Time Series?
d. What is Time Reversal Test?
e. What is Regression Coefficient?
f. Define Probability.
g. What is Null and Alternative Hypothesis?

SECTION B

2. Attempt any *three* of the following: 7 x 3 = 21

a. Discuss the functions and limitations of Statistics.
b. What are the components of time Series? How would you find out the trend values in a time series by the method of least squares?
c. Define correlation and explain how the coefficient of correlation is calculated by Karl person's method. What are the limits between which the value of r is found?
d. What is Normal Distribution? Discuss the characteristics of normal distribution.
e. What is the major purpose of hypothesis testing? Explain the various steps involved in hypothesis testing.

SECTION C

3. Attempt any *one* part of the following: 7 x 1 = 7

(a) Find out Mean, Median and Mode from the following data:

Marks :	10-20	20-30	30-40	40-50	50-60
No. of students:	15	20	45	15	5

(b) Find the S.D. of the following data: -

Age (in years):	4-6	6-8	8-10	10-12	12-14	14-16	16-18
No. of students:	30	90	120	150	80	60	20

4. Attempt any *one* part of the following: 7 x 1 = 7

(a) Fit a straight line trend by the method of least squares to the following data: -

Year :	2012	2013	2014	2015	2016	2017
Sales of T.V. sets (in'000):	7	10	12	14	17	24

(b) What is Fisher's ideal formula for preparing index number? Does it satisfy the time reversal test and factor reversal test? Explain.

5. Attempt any *one* part of the following: 7 x 1 = 7

(a) Calculate coefficient of rank correlation from the following data: -

Marks in Account:	48	33	40	9	18	14	67	24	19	65
Marks in Statistics:	12	13	29	6	15	4	20	9	5	19

(b) Calculate the two regression equations from the following data: -

X:	6	2	10	4	8
Y:	9	11	5	8	7

6. Attempt any *one* part of the following: 7 x 1 = 7

(a) There are three bags. Bag I contains 3 white and 5 black balls. Bag II has 5 white and 7 black balls while bag III contains 9 white and 6 black balls. One white ball is drawn from one of the bags. Find the probability that it is drawn from bag II?

(b) As a result of a certain experiment, the data obtained were:

X:	0	1	2	3	4
Y:	8	32	34	24	5

Fit a binomial distribution to the above data.

7. Attempt any *one* part of the following: 7 x 1 = 7

(a) Write short noteson: -

i. Type I and type II error.
ii. Internal Estimation.

(b) Prove from the following data that new treatment is superior to the conventional treatment:

Treatment	No. of Patients	
	Favorable	Not Favorable
New	60	20
Conventional	70	50

(Given: for $\nu=1$ $\chi^2_{0.05} = 3.84$)