Printed Pages:02 **Sub Code: KMB-104**

Paper Id: 233674 **Roll No.** | | | | | | | | | | |

MBA
(SEM I) THEORY EXAMINATION 2022-23

BUSINESS STATISTICS AND ANALYTICS

Time: 3 Hours ***Total Marks: 100***

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

SECTION A

1. Attempt *all* questions in brief. 2 x 10 = 20

a. Define 'Statistics'
b. Describe Coefficient of Variation.
c. Define Index Number.
d. What is Kurtosis?
e. Describe Quartiles.
f. What is Least Square Method?
g. Define Decision Tree Approach.
h. Write the formula of Poisson Probability Distribution.
i. Define Uncertainty in Decision Making Theory.
j. What is Variance?

SECTION B

2. Attempt any *three* of the following: 10x3=30

a. Describe mean deviation and standard deviation. Compare mean deviation and standard deviation as measures of variation
b. Suppose that a Central University has to form a committee of 5 members from a list of 20 candidates out of whom 12 are teachers and 8 are students. If the members of the committee are selected at random, what is the probability that the majority of the committee members are students?
c. What do you understand by 'binomial' distribution? What are its main features?
d. What is Poisson Distribution? How it is calculated? Define its characteristics
e. Explain briefly statistical decision theory. What are the ingredients of a decision problem?

SECTION C

3. Attempt any *one* part of the following: 10x1=10

a. Find the value of mean , mode and median from the data given below :

Weight (in Kg.)	93 - 97	98 - 102	103 – 107	108 - 112	113 - 117	118 - 122	123 - 127	128 - 132
No. of Students	3	5	12	17	14	6	3	1

b. Explain the various methods for measuring Dispersion. Also give their merits and demerits?

4. Attempt any *one* part of the following: 10x1=10

a. From the following data calculate Index Number by Simple Aggregate Method.

Commodity	A	B	C	D
Price in 2017 (Rs.)	162	256	257	132
Price in 2018 (Rs.)	171	164	189	145

b. What is Index Numbers? Give the importance or utility of Index Numbers?

5. Attempt any *one* part of the following: 10x1=10

a. What is the difference between Regression and Correlation? Explain

b. Calculate the regression equations from the following data:

X	1	2	3	4	5	6	7	8	9
Y	9	8	10	12	11	13	14	16	15

6. Attempt any *one* part of the following: 10x1=10

a. It is known from past experience that in a certain plant there are on the average 4 industrial accidents per month. Find the probability that in a given year there will be less than 4 accidents. Assume Poisson distribution. ($e^{-4} = 0{\cdot}0183$)

b. Explain with examples the rules of Addition and Multiplication in Theory of Probability

7. Attempt any *one* part of the following: 10x1=10

a. A manufacturing company has to select one of the two products X or Y for manufacturing. Product X requires investment of Rs.30,000 and product Y, Rs. 50,000. Market result survey shows high, medium and low demands with corresponding probabilities and return from sales, (in thousand rupees), for the two products, as given in the following table.

Demand	Probability		Return from sales (Rs. x 1000 `)	
	Product X	Product Y	Product X	Product Y
High	0.4	0.3	75	100
Medium	0.4	0.4	55	80
Low	0.2	0.3	35	70

Construct the appropriate decision tree. What decision the company should take?

b. What do you mean by Business Analytics? Explain its applications in detail