Roll No:

MBA-INT
(SEM III) THEORY EXAMINATION 2023-24
ADVANCED BUSINESS STATISTICS

TIME: 3 HRS

M.MARKS: 100

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

SECTION A

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

Qno.	Question	Marks
a.	What is meant by Historical Series?	2
b.	What do you mean by Value Relative in Index Numbers?	2
c.	What is Continuous Probability Distribution?	2
d.	Show that the sum of all probabilities for Poisson Distribution is always equal to one.	2
e.	What is meant by Point Estimation?	2
f.	What do you mean by Sample Size Determination?	2
g.	What is meant by 5% and 1% level of significance?	2
h.	What do you mean by Sample and Population?	2
i.	Define the meaning of Association of Attributes.	2
j.	What is meant by Independence of Attributes?	2

SECTION B

2. Attempt any *three* of the following: 10 x 3 = 30

a.	What is an Index Number? Discuss the various Types of Index Numbers.	10
b.	Define Binomial Distribution and find out its Mean and Variance.	10
c.	What is meant by Sample? Discuss the various Methods of Sampling.	10
d.	What do you understand by 'F'- test? Discuss the Process of calculation of 'F'- test.	10
e.	What are the measurement techniques of attributes? Discuss any one measurement technique of attributes.	10

SECTION C

3. Attempt any *one* part of the following: 1 x 10 = 10

a.	Fit a straight line trend by least squares method to the data given below and estimate trend for 2027:- Year : 2017 2018 2019 2020 2021 Profits (Rs. Lakhs): 10 20 30 40 50	10
b.	Discuss the Time Reversal Test and Factor Reversal Test in case of Paasche's & Ideal index numbers.	10

4. Attempt any *one* part of the following: 1 x 10 = 10

a.	What is Poisson Distribution? Discuss its Characteristics.	10
b.	Assume the mean height of soldiers to be 68.22 inches with a standard deviation of 3.286 inches. How many soldiers in a regiment of 1,000 would you expect to be (i). Over six feet tall, and (ii). Below 5.5 feet? Assume heights to be normally distributed.	10

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PAPER ID-310144

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Z	0.6756	1.0	1.15	
Area	0.2501	0.3413	0.3749	

5. Attempt any *one* part of the following: 1 x 10= 10

		10
a.	Write a brief essay on Central Limit Theorem.	10
b.	Explain the meaning and significance of the concept of Standard Error in sampling analysis.	

6. Attempt any *one* part of the following: 1 x 10= 10

		10
a.	What is the concept of 't'- test. Discuss its applications.	10
b.	The theory predicts the proportion of beans, in the four groups A, B, C and D should be 9 : 3 : 3 : 1. In an experiment among 1,600 beans, the numbers in the four groups were 882, 313, 287 and 118. Does the experimental result support the theory? (The table value of χ^2 for 3 d.f. at 5% level of significance is 7.81).	

7. Attempt any *one* part of the following: 1 x 10= 10

		10
a.	What are the Characteristics of Association of Attributes? Discuss.	10
b.	In a population of 1,000 students, the number of married students is 400. Out of 300 students who failed, 120 belonged to the married group. Using Yule's coefficient of association, find out the extent of association between the attributes marriage and failure.	