PAPER ID-311070

Roll No:

MBA
(SEM I) THEORY EXAMINATION 2020-21
BUSINESS STATISTICS & ANALYTICS

Time: 3 Hours   *Total 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

Q no.	Question	Marks	CO
a.	Define Quartiles.	2	1
b.	What is Mean deviation?	2	1
c.	Define Time series analysis.	2	2
d.	Describe Index Number.	2	2
e.	What do you mean by Correlation?	2	3
f.	Define Regression Line.	2	3
g.	Describe Probability.	2	4
h.	Define Probability Theoretical Distributions.	2	4
i.	What do you mean by Hypothesis Testing?	2	5
j.	Describe Chi Square Test.	2	5

SECTION B

2.   Attempt any *three* of the following:

Q no.	Question	Marks	CO
a.	Define the term "Statistics" and discuss its functions and limitations	10	1
b.	Discuss Laspeyre's, Paasche's and Fisher's index numbers. Which of the three would you prefer and why ?	10	2
c.	The coefficient of correlation between two variables X and Y is 0.48. The covariance is 36. The variance of X is 16. Find the standard deviation of Y.	10	3
d.	Write the properties of Binomial; Poisson and Normal distributions.	10	4
e.	What do you mean by Business Analytics? Explain its types and applications.	10	5

SECTION C

3.   Attempt any *one* part of the following:

Q no.	Question	Marks	CO
a.	"Each average has its own special features and it is difficult to say which one is the best". Explain and illustrate.	10	1
b.	Twenty passengers were found ticketless on a bus. The sum of squares and the S.D. of the amount found in their pockets were ₹ 2,000.00 and ₹ 6.00 respectively. If the total fine imposed on these passengers is equal to the total amount recovered from them and fine imposed is uniform, what is the amount each one of them has to pay as fine? What difficulties do you visualize if such a system of penalty were imposed?	10	1

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4. Attempt any *one* part of the following:

Q no.	Question	Marks	CO
a.	Explain the meaning of time series. What are its main components? How would you study seasonal variations in a time series?	10	2
b.	Construct Index Number for each year from the following average annual wholesale prices of cotton with 1993 as base :	10	2

Year	Wholesale Price (₹)	Year	Wholesale Price (₹)
1993	75	1998	70
1994	50	1999	69
1995	65	2000	75
1996	60	2001	84
1997	72	2002	80

5. Attempt any *one* part of the following:

Q no.	Question	Marks	CO
a.	What are the advantages of Spearman's rank correlation coefficient over Karl Pearson's correlation coefficient? Explain the method of calculating Spearman's correlation coefficient.	10	3
b.	The following is an estimated supply regression for sugar : $Y = 0.025 + 1.5X$ Where Y is supply in kilos and X is price (₹) per kilo. (i) Interpret the coefficient of variable X. (ii) Predict the supply when price is ₹ 20 per kilo. (iii) Given that r(x, y) = 1 in the above case, interpret the implied relationship between price and quantity supplied.	10	3

6. Attempt any *one* part of the following:

Q no.	Question	Marks	CO
a.	Explain Addition and Multiplication Law. What is Baye's Theorem	10	4
b.	A speaks the truth 2 out of 3 times and B 4 out of 5 times ; they agree in the assertion that from a bag containing 6 balls of different colours, a black ball has been drawn. Find the probability that the statement is true.	10	4

7. Attempt any *one* part of the following:

Q no.	Question	Marks	CO
a.	Differentiate between Descriptive analytics and Predictive analytics.	10	5
b.	Assume the mean height of soldiers to be 68.22 inches with a variance of 10.8 inches2. 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	5