Sub Code ILM104 **Roll No.....**

SEMESTER EXAMINATION 2022-2023

(1st Year 1st Semester– B.B.A.LL.B-)

Quantitative Practice and Business Statistics

Duration: 3:00 hrs. **Max Marks: 70**

Note: Attempt all questions. All questions carry equal marks. In case of any ambiguity or missing data, the same may be assumed and state the assumption made in the answer.

<table>
<tr><td>Q 1</td><td>Answer any four parts of the following within 100 to 125 words.

a) Describe secondary data. What are their sources and precautions necessary for using them?
b) Elaborate dispersion in statistics? Enlist the important measure of the dispersion.
c) Elucidate statistics and their types. Discuss the importance of trade, commerce and business. What are the major limitations of statistics?
d) Discuss the properties of correlation coefficients.
e) Discuss the significance of sampling distribution and the limitation of sampling
f) Discuss the role of Statistics in the modern era? Write the use and applications of statistics.</td><td>4x3.5=14</td></tr>
<tr><td>Q 2.</td><td>Answer any four parts of the following within 100 to 125 words.

a) Write the difference between correlation and regression. How can you analysis a company?
b) In a correlation study following values were obtained:
X Y
Arithmetic Mean 65 67
Standard 2.5 3.5
Coefficient of Correlation R=0.8
find the two regression equations that are associated with the above values
c) A family with a monthly income of ` 20,000 had planned the following expenditures per month under various heads:
<table><tr><td>Heads</td><td>Expenditure (in thousand rupees)</td></tr><tr><td>Grocery</td><td>4</td></tr><tr><td>Rent</td><td>5</td></tr><tr><td>Children’s Education</td><td>5</td></tr><tr><td>Medicine</td><td>2</td></tr><tr><td>Fuel</td><td>2</td></tr></table></td><td>4x3.5=14</td></tr>
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Entertainment	1	
Miscellaneous	1	

Draw a bar graph for the data above.

d) Describe standard error. Discuss the implication of standard error in an organization.
e) Elaborate price index number and quantity index number.
f) Describe Normal Distribution. What are the properties of Normal Distribution write the importance of normal distribution

Q 3. **Answer any two parts of the following within 200 to 250 words** 2x7=14

a) The median of the following distribution is 25. Find out its Quartile Deviation.

Class	0-10	10-20	20-30	30-40	40-50	Total
Frequency	5	?	?	10	5	50

b) What is meant by the measure of central tendency? What are the characteristics of a good measure of central tendency?

c) Calculate the mean deviation from the following series :

X	10	11	12	13	14
F	4	5	6	10	2

Q 4. **Answer any two parts of the following within 200 to 250 words.** 2x7=14

a) Define random variable. How do you distinguish between discrete and continuous random variables? Illustrate your answer with suitable examples.

b) Calculate the Arithmetic mean median, mode of the following:

Class	10-14	15-19	20-24	25-29	30-34	35-39	40-44
Frequency	5	15	28	24	17	10	1

c) The following table contains information from the raw material purchase records of a small factory for the year 2020-21 and 2021-22:

Commodity	2020-21 Price a (Rs./unit)	Total value (Rs.)	2021-2022 Price a (Rs./unit)	TOTAL VALUE
A	5	50	6	71
B	7	84	10	80
C	10	80	12	98
D	4	29	5	30

Calculate Fisher's ideal index number. Prove that it satisfies the time reversal test

Q 5.	**Answer any two parts of the following within 200 to 250 words** **a**) Describe the properties of a good estimator? Explain how these properties are essential for estimating the population characteristics of interest. **b)** Find the two regression equations from the following data:	2x7=14

X	2	4	5	5	8	10
Y	6	7	9	10	12	12

Also, estimate Y when X is 13 and estimate X when Y is 15.

c) Fit a linear trend curve by the least-squares method to the following:
Year

YEAR	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
OUTPUT	3	5	5	6	7	8	10	12	13	15

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