Master of Library and Information Science Examination, 2024

(1st Year, 1st Semester)

Quantitative Techniques

Paper – ML-05

Time : Two hours Full Marks : 50

Answer ***all*** the questions.

1A. i) What is meant by 'sampling'? 3

ii) Why is drawing sample advantageous over the complete enumeration? 4

iii) Mention different types of sampling techniques. 3

iv) Describe briefly the systematic and stratified random sampling with examples. 10

OR

1B. i) Illustrate with an example how do you convert a Normal distribution into a Standard Normal Distribution. 4

ii) Differentiate between Standard deviation and Standard error of mean. 3

iii) The price distribution of a sample of books is as follows: 4

Price (Rs.) :	1 – 5	6 – 10	11 – 15	16 – 20	21 – 25	26 – 30
No. of books :	7	12	19	15	8	3

iv) Show the respective positions of mean, median and mode in a positively skewed, negatively skewed and symmetrical distributions. 3

v) Give a brief account on the 'measure of dispersion'. 6

2A. i) What are meant by correlation and regression? 3

ii) Mention the range of the value of correlation co-efficient. 1

iii) Show with diagrams the different types of correlation. 3

iv) If two variables are independent, their correlation co-efficient is zero. Is the converse true? Explain by means of an example. 3

v) In a documentation centre the frequency of use of a random sample of documents of different ages is as follows:

Age of Document (years)	Frequency of use
1	40
3	18
2	30
4	21
3	26
5	10
4	13
3	35

Find the Pearson's correlation co-efficient for the above data.

Assess the significance of the result by using the student's t-test for the 5% and 1% significance levels (values of t for 6 degrees of freedom at 5% and 1% significance levels are 2.45 and 3.71 respectively) 10

OR

2B. i) What is meant by Time series analysis of data? 3

ii) Why is it important? 3

iii) Describe briefly its different components. 10

iv) Write a brief note on 'Moving average method'. 4

3. Write short notes on **any two** of the following: 5×2

i) Degrees of freedom

ii) Parametric *vs* Non-Parametric tests

iii) Queuing behaviour

iv) Work measurement