

MASTER OF LIBRARY AND INFORMATION SCIENCE

(DIGITAL LIBRARY) EXAMINATION, 2019

(1st Semester)

Quantitative Techniques

Paper : MLDL - 03

Time : Two hours

Full Marks : 50

Answer *all* questions.

1A. (a) Differentiate between (any *five*) : 3x5=15

- i) Histogram of equal and unequal widths
- ii) Type-I Error and Type-II Error
- iii) Null Hypothesis and Alternative Hypothesis
- iv) One-tailed test and Two-tailed test
- v) Cumulative frequency and Relative frequency
- vi) Positive correlation and Negative correlation
- vii) Statistic and Parameter
- viii) Primary data and Secondary data

(b) Write a brief note on 'Skewness and its measure'. 5

OR

1B.(a) Define the term 'Covariance'. 3

- (b) Illustrate with an example the modified formula for Spearman's Rank Correlation Co-efficient where tie occurs and show how the calculation is made for tie. 5

(Turn over)

(2)

(c) The Intelligence test scores of ten cataloguers of a library were computed and the number of main centres prepared by each of them in a fortnight were noted as follows :

Sl No :	1	2	3	4	5	6	7	8	9	10
Intelligence test Scores(X)	80	30	82	45	32	65	40	88	73	66
No. of main entries prepared(Y):	85	42	75	68	45	63	60	90	62	58

Calculate the Spearman's Rank Correlation Coefficient between intelligence and efficiency in cataloguing. Assess the significance of the result by applying the students t-test for 5% and 1% significance levels (values of t for 8 degrees of freedom at 5% and 1% significance levels are 2.31 and 3.36 respectively). 12

- 2A. (a) What is meant by 'Time series analysis'? 2
 (b) Why do we analyse time series data? 2
 (c) Describe the various components of time series. 12
 (d) Briefly narrate the moving average method for isolating secular trend. 4

OR

- 2B. (a) What is meant by 'Standard Error of Mean'? 3

(3)

- (b) Show how precision depends on sample size. 2
 (c) Illustrate with a diagram the Standard normal distribution. 5
 (d) Calculate the regression equations for both of X on Y and Y on X from the data given below :

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

10

3. Write short notes on any *two* : 5x2=10
 (a) Queuing behaviour of customers
 (b) Work study
 (c) Parametric and Non-Parametric tests
 (d) Sampling techniques

— X —