

MASTER OF LIBRARY AND INFORMATION SCIENCE

EXAMINATION, 2019

(1st Semester)

Quantitive Techniques

Paper : ML - 05

Time : Two hours

Full Marks : 50

Answer *all* questions.

- 1A. (a) What is meant by Variability ? 1.5
(b) Describe briefly three important ways of measuring variability with their respective characteristics. 9
(c) Calculate the Mean Deviation of the following values about the median : 5
8, 15, 53, 49, 19, 62, 7, 15, 95, 77
(d) Show the respective positions of Mean, Median and mode in a Positively skewed, Negatively skewed, Negatively skewed and Symmetrical distributions. 4.5

OR

- 1B. (a) If two variables are independent, their correlation coefficient is zero. Is the converse true ? Explain by means of an example. 6
(b) The stock and daily issues of ten libraries in Kolkata are given below :

(Turn over)

(2)

Stock (in thousands)	Daily issues
1.1	30
7.5	90
4.0	65
8.0	150
9.0	80
2.0	60
3.5	50
9.5	160
4.5	100
14.0	250

Find the product-moment correlation co-efficient for the above stock and daily issues. 8

(c) Describe briefly the properties of Correlation coefficient. 6

2A. (a) Define 'seasonal fluctuations'. 3

(b) How does it differ from 'cyclical fluctuations in time series data? 3

(c) Obtain the seasonal fluctuations from the following time series data :

Quarterly Output for 4 years

Years/Quarters	I	II	III	IV
2014	65	58	56	61
2015	68	63	63	67
2016	70	59	56	52
2017	60	55	51	58

(3)

(d) Deseasonalise the above data assuming an additive model for the time series components. 4

2B. (a) What is meant by statistical testing? 2

(b) Why is it needed? 2

(c) Describe with a diagram the respective positions of Null hypothesis, Alternative hypothesis and Indecisive zone and mention the conditions to be fulfilled for their validity. 6

(d) Why 't' test is also known as 'Student's t test'? 6

(e) Describe the characteristic features of t, z and χ^2 test and mention the conditions to apply them. 9

3. Write short note on any **one** : 5x1=5

(a) Network analysis and its relevance in LIS

(b) Operations Research : meaning and the process

(c) Frequency distribution diagrams

(d) ANOVA

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