2018

MLISc

2nd Semester Examination

QUANTITIVE TECHNIQUES IN LIBRARY AND INFORMATION

PAPER—MIL-210

Subject Code—08

(Practical)

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer *all* questions.

1. Differentiate between the concepts belonging to any *two* of the following pairs of concepts :   2×2½

   (a) Arithmatic Mean and Geometric Mean.

   (b) Discrete variable and Continuous variable.

   (c) Class Limit and Class Boundary.

(Turn Over)

(d) **Polynomial function and Exponential function.**

2. Write short notes on any *one* of the following :   5

   (a) Mode.

   (b) Harmonic Mean.

3. (a) (i) For any given set of data

      $(x_1, x_2, \dots x_n)$, Show that

      $$GM = \sqrt{AM \times HM}$$

      Where $GM \to$ Geometric Mean

                $AM \to$ Arithmatic Mean

                $HM \to$ Harmonic Mean

   (ii) Define mean deviation and standard deviation of a given set of data $(x_1, x_2, \dots x_n)$.

   (iii) Show that $-1 \le r_{xy} \le +1$ where $r_{xy} \to$ Pearson's productmoment correlation coefficient. between x and y. Hence x and y are two variables and $(x_1, y_1), (x_2, y_2) \dots (x_n, y_n)$ denote n pairs of data with

(Continued)

means $\bar{x}, \bar{y}$ and standard deviations $\sqrt{x}, \sqrt{y}$
respectively. 4+4+7

Or

(b) (i) Show that $b_{yx} \times b_{xy} = r^2$

Where, $b_{yx} \to$ Regression coefficient of y on x.

$b_{xy} \to$ Regression coefficient of x on y.

$r \to$ Correlation coefficient between x and y.

(ii) Define the following :

(i) Class frequency

(ii) Width of a Class

(iii) frequency density of a Class. 10+5

4. (a) Data given below show the number of publications and number of citations received by 12 authors. Find out the number of publications of an author, who received 97 citations.

No. of Publications	No. of Citations received
10	22
18	36
30	66
35	82
45	100
50	112
55	120
60	138
65	149
70	165
80	175
100	235

Or

(b) The following data give ranks of 12 authors by h-index and e-indes. Calculate Rank correlation coefficient between two different ranking methods and interpret the result :

S. No.	Rank according to h-index	Rank according to e-index
1	1	11
2	2	12
3	3	9
4	4	10
5	5	8
6	6	7
7	7	6
8	8	5
9	9	4
10	10	3
11	11	2
12	12	1

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