PG/IIS/MLI/209/25

MLIBISc. 2nd Semester Examination, 2025

MASTER OF LIBRARY AND

INFORMATION SCIENCE

(*Studies of Academic Metrics*)

PAPER — MLI-209

Full Marks : 50

Time : 2 hours

Answer **all** questions

The figures in the right hand margin indicate marks

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

GROUP—A

Answer any two questions :　　　10 × 2

1. Define 'Bibliographic coupling' and 'Co-citation coupling'. Discuss the concept of 'Informetrics'. Explain Sen's concept of 'Normalised Impact Factor'. $4 + 2 + 4$

2. What is 'Obsolescence" ? Define 'Cited Half Life' of a journal. Explain De Solla Price' 'Logistic Growth Model'. Define 'Degree of Collaboration' of a journal.
$$2 + 2 + 4 + 2$$

3. Explain Bradford's Law of Bibliographic Scattering and Lotka's Law of Author Productivity. Elucidate how Sengupta's correction to Bradford's Law explains the multidisciplinary nature of a subject. $3\frac{1}{2} + 3\frac{1}{2} + 3$

4. The citation distribution of ranked articles contributed by an author is presented in the Table below. Show the number of citations vs. number of publications graph and calculate the following indicators from

this Table :   (1) h Index ;   (2) i10 Index ;
(3) g Index ;   (4) e Index ;   (5) R Index ;
(6) a Index ;   (7) Number of Tail Citation ;
(8) Cited-Uncited Ratio ;   (9) h-Excess −
h-Tail Ratio;   (10) Threshold Citation ;
(11) W Index ; (12) Calculate h-Index by
applying Yong's formula.   10

Serial Number of the Articles	Number of Citations Received
1	185
2	152
3	131
4	125
5	119
6	100
7	75
8	51
9	40
10	35

Serial Number of the Articles	Number of Citations Received
11	33
12	33
13	29
14	28
15	27
16	27
17	27
18	26
19	25
20	21
21	19
22	19
23	15
24	13
25	12
26	12
27	11

(Continued)

Serial Number of the Articles	Number of Citations Received
28	10
29	9
30	8
31	8
32	8
33	7
34	7
35	6
36	6
37	6
38	5
39	5
40	4
41	4
42	3
43	3
44	3

Serial Number of the Articles	Number of Citations Received
45	3
46	3
47	3
48	2
49	2
50	2
51	2
52	2
53	1
54	1
55	1
56	1
57	1
58	1
59	1
60	1

(*Continued*)

Serial Number of the Articles	Number of Citations Received
61	1
62	1
63	1
64	0
65	0
66	0
67	0
68	0
69	0
70	0
71	0
72	0
73	0
74	0
75	0

(8)

GROUP – B

Answer any **four** questions : 5×8

5. Explain Benford's Law. What is SJR ? $3\frac{1}{2}+1\frac{1}{2}$

6. Explain the concept of 'Altmetrics'. List different components used to calculate 'Altmetric Attention Score'. $3+2$

7. Explain why h-Index is an incomplete indicator. What is 'Preferential Attachment Model' ? $2\frac{1}{2}+2\frac{1}{2}$

8. Write brief notes on ORCID and Openalex. $2\frac{1}{2}+2\frac{1}{2}$

9. Elucidate the fundamental difference between Impact Factor-type indicator and h-type indicator. What is 'Normalized h-Index' ? $2\frac{1}{2}+2\frac{1}{2}$

10. For a subject 'S' the relationship between the number of contributing authors and the number of contributed articles may be presented as follows :

1 author contributed 75 articles
2 author contributed 40 articles each
3 author contributed 35 articles each
4 author contributed 25 articles each
5 author contributed 17 articles each
8 author contributed 9 articles each
12 author contributed 5 articles each
15 author contributed 4 articles each
22 author contributed 3 articles each
30 author contributed 2 articles each
55 author contributed 1 article each

Find out Lotka's equation for this authorship distribution. 5

[Internal Assessment — 10 Marks]