

**Indian Statistical Institute**  
**Document Research and Training Centre**  
**MS in Library and Information Science**  
**Semester IV Paper 16 – Scientometrics and Informatics**

**Answer any 3 complete questions [1-5]. Answer should be in detail.**

**10X3=30 Marks**

1. Explore the meaning of the terms – Librametrics, Bibliometrics, Webometrics, Cybermetrics and Scientometrics. Provide suitable explanations of each.
2. State the Bradford's law for establishing relationship between journals and their contributing articles in a domain. Prove the Bradford's law by suitable plots and assumptions.
3. State the Lotka's law on the productivity of the authors. Given below is the author productivity data on  $g(x)$  and  $x$ ; where  $g(x)$  is the number of authors contributing  $x$  articles  
 $g(x)$ : 120 42 23 9 5 1  
 $x$ : 1 2 3 4 5 6  
 Find the parameter 'n' for the model equation  $g(x) = k / x^n$
4. Illustrate the phenomenon of half-life of a subject or a domain by taking few examples. Explore its importance in determining the obsolescence of a domain.
5. What is citation? Why do authors cite? Investigate 8 reasons why scientists cite their precedence?

**Answer any one question [6 or 7]**

**10X1 =10 marks**

6. State the Zipf's law and explore its significance with respect to the occurrence of words in a corpus and its rank and frequency. Discuss the Pareto's 80/20 rule and its importance.
7. Fill in the columns in the table below to investigate the Bradford's law. Find the value of the Bradford's multiplier for journal's data given in the table.

No. of Journals	Cum. no. Journals	Log (n)	Publications	Total no. of Publications	Cum. No. of Publications
1			463		
1			80		
1			47		
1			43		
1			40		
1			35		
1			34		
4			29		
1			28		
1			27		
1			26		
1			25		
2			24		
1			21		
1			20		
4			19		
1			17		
6			16		
5			14		
4			13		
3			12		
9			11		

7			10		
6			9		
9			8		
16			7		
21			6		
35			5		
40			4		
70			3		
142			2		
391			1		