


National University of Computer and Emerging Sciences, Lahore Campus

	Course:	Information Retrieval	Course Code:	CS317
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	Duration:	25 Minutes	Total Marks:	10
	Paper Date:	3-Sept-18	Weight	3.3%
	Section:	B	Page(s):	2
	Exam:	Quiz 1	Roll No:	

Question 1 [4 marks]

Let V = Vocabulary size, N = Total number of documents, $AveD$ = Average Document Length

$|q|$ = query length, $|posting|$ = length of posting list of a word

Write time and space complexity of different indexing methods in this table.

	Term Document Matrix	Inverted Index
Time Complexity for relevant document retrieval	$ q * N$	$ q * posting $ OR constant OR $ q $
space Complexity	$V * N$	$N * AveD$

Question 2

Suppose a company needs to store large number of financial figures. The value of numbers range from 20,000 to 60,000. Which of the following two options will be more space efficient for encoding these numbers. **Why?** [2 Mark]

- a) Elias Gamma Encoding
- b) 16 bit Fixed Length Encoding

Solution

16 bit fixed length is more space efficient in this situation because numbers are large and smallest number 20,000 will take 27 bits using Elias Gamma Encoding whereas these numbers can be encoded in 16 bits in binary.

Name _____
Section _____

Roll No _____

Question 3

Consider following document Ids. [4 Marks]

4, 17, 55, 57

With corresponding list of document gaps

4, 13, 38, 2

Encode document gaps using Elias Gamma encoding.

Solution:

Code of 4 = 11000

Code of 13 = 1110101

Code of 38 = 11111000100

Code of 2 = 100

11000111010111111000100100