Name _____ Roll No Solution Section ____

National University of Computer and Emerging Sciences, Lahore Campus

Course:	Information Retrieval	Course Code:	CS4051
Program:	BS(Data Science)	Semester:	Spring 2023
Duration:	25 Minutes	Total Marks:	10
Paper Date:	13 Feb 2023	Weight	0
Section:	BDS-6A	Page(s):	2
Exam:	Quiz 1	Roll No:	

Question 1 [4 marks]

Let V = Vocabulory 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.

	Forward Index	Inverted Index
Time Complexity for relevant document retrieval	|q| * N x AveD	|V| x |posting|
space Complexity	N x AveD	N x AveD, OR |V| x |posting|

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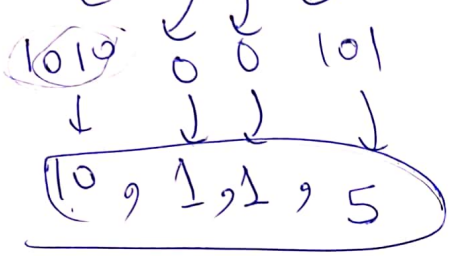
Question 2

Decode following into decimal numbers using Elias Gamma decoding. [3 Marks]

1110010011001

How many numbers are encoded here?



4 numbers

Question 3

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? [3 Mark]

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

16-bit Fixed

Reason This data has large numbers which need almost 15 to 16 bits. ~~Elias~~ Avg bits for Elias Gama will be more as compared to 16-bit Fixed.

Elias-Gama is space efficient for small number.