Seat No.: _____ Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI(NEW) – EXAMINATION – SUMMER 2019

Subject Code: 2161603 Date:16/05/2019

Subject Name: Data Compression and data Retrival

Time:10:30 AM TO 01:00 PM Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	What is Data Compression? Compare Lossy Compression with Lossless Compression.	**03**
	(b)	Explain different types of models in Data Compression.	**04**
	(c)	Draw encoding and decoding procedure flowchart of Adaptive Huffman Coding.	**07**
Q.2	**(a)**	Define following terms: (i) Uniquely Decodable Code (ii) Prefix Code	**03**
	(b)	Compare Arithmetic Coding with Huffman Coding.	**04**
	(c)	Explain Scalar Quantization in detail.	**07**
		OR	
	(c)	Explain Vector Quantization detail.	**07**
Q.3	**(a)**	Explain CALIC.	**03**
	(b)	Explain Skip Pointers in brief.	**04**
	(c)	Explain Tunstall Codes with suitable example.	**07**
		OR	
Q.3	**(a)**	Explain Uniqueness and Efficiency of the Arithmetic Code.	**03**
	(b)	Write the method to generate a tag in Arithmetic Coding.	**04**
	(c)	Explain Stemming and Lemmatization with suitable example.	**07**
Q.4	**(a)**	Discuss different challenges in XML Retrival.	**03**
	(b)	Explain Facsimile Encoding and Exclusion principle in detail.	**04**
	(c)	Given an initial dictionary index 1=w, 2=a, 3=b, 4=$, 5=o encode and decode the following message using LZW algorithm: wabba$woo	**07**
		OR	
Q.4	**(a)**	Explain Pyramid Vector Quantization.	**03**
	(b)	Write a short note on Tokenization.	**04**
	(c)	Encode the following sequence cabracadabrarrarrad using LZ77 Method. Assume window size of 13 and look ahead buffer of size 6.	**07**
Q.5	**(a)**	Explain how vector quantization is better than scalar quantization.	**03**
	(b)	Explain Prediction with Partial Match in detail.	**04**
	(c)	Write a short note on Old JPEG Standard and JPEG-LS.	**07**
		OR	
Q.5	**(a)**	Explain Diagram Coding with suitable example.	**03**
	(b)	Compare Uniform Quantization with Non Uniform Quantization.	**04**
	(c)	Explain Arithmetic Coding with suitable example.	**07**

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