

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI (NEW) EXAMINATION – WINTER 2017****Subject Code: 2161603****Date: 13/11/2017****Subject Name: Data Compression and data Retrieval****Time: 02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

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

		MARKS
<b>Q.1</b>	(a) Compare Lossless Compression with Lossy Compression.	<b>03</b>
	(b) How Modeling and Coding are useful for the development of Data Compression algorithm.	<b>04</b>
	(c) Explain Markov model with example.	<b>07</b>
<b>Q.2</b>	(a) Explain Rice Codes in brief.	<b>03</b>
	(b) Write a short note on Tunstall Code.	<b>04</b>
	(c) List out the different techniques for Lossless Compression and explain LZ77 with example.	<b>07</b>
	<b>OR</b>	
	(c) List out the different techniques for Lossless Compression and explain LZW with example.	<b>07</b>
<b>Q.3</b>	(a) Write a short note on Prefix Code.	<b>03</b>
	(b) Explain Scalar Quantization in brief.	<b>04</b>
	(c) Explain Huffman Coding with suitable example.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Compare Uniform Quantization with Non Uniform Quantization.	<b>03</b>
	(b) Explain Vector Quantization in brief.	<b>04</b>
	(c) Encode and decode "BACBA" with Arithmetic Coding. [P(A)=0.5, P(B)=0.3, P(C)=0.2]	<b>07</b>
<b>Q.4</b>	(a) Discuss different challenges in XML Retrieval	<b>03</b>
	(b) Generate GOLMB code for m=5 and n=0 to 10.	<b>04</b>
	(c) Explain CALIC.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) Explain Biword Indexes and Positional Indexes in brief.	<b>03</b>
	(b) Explain Burrows-Wheeler transform with example.	<b>04</b>
	(c) Explain JPEG.	<b>07</b>
<b>Q.5</b>	(a) Explain Skip Pointers in brief.	<b>03</b>
	(b) Write a short note on Tokenization.	<b>04</b>
	(c) Explain Prediction with Partial Match in detail.	<b>07</b>
	<b>OR</b>	
<b>Q.5</b>	(a) Explain Data Retrieval in brief.	<b>03</b>
	(b) Explain Vector Space model for XML Retrieval.	<b>04</b>
	(c) Explain Lemmatization and Stemming in detail.	<b>07</b>

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