Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VIII • EXAMINATION – WINTER • 2014

Subject Code: 181602 Date: 29-11-2014

Subject Name: Data Compression

Time: 02:30 pm - 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.**

Q.1	**(a)**	What do you mean by Data Compression? Differentiate between Lossless and Lossy compression techniques with example.	**07**
	(b)	Explain the Huffman algorithm with proper example.	**07**
Q.2	**(a)**	Write Short Note on 1. JPEG Compression 2. Adaptive Coding	**07**
	(b)	Describe the Sahnnon-fano algorithm with illustrative example.	**07**
		OR	
	(b)	Differentiate modeling and coding with the help of suitable examples	**07**
Q.3	**(a)**	Explain LZ77 algorithm and describe the problems related to it.	**07**
	(b)	Explain LZSS compression and state whether it is better than LZ77 and why?	**07**
		OR	
Q.3	**(a)**	What are the difference between Huffman coding and Shannon fano coding? Prove by a suitable example that Huffman is better than Shannon fano coding.	**07**
	(b)	1. What is swapping and overflow problem? 2. What is Entropy? Explain.	**07**
Q.4	**(a)**	Why adaptive Huffman coding is prefer over Huffman code? List out and explain the enhancements	**07**
	(b)	Give difference between static and adaptive dictionary coding scheme in details.	**07**
		OR	
Q.4	**(a)**	Use LZ77 to encode "WEDWEWEEWE12WET".	**07**
	(b)	Explain Arithmetic coding with an example.	**07**
Q.5	**(a)**	What is Discrete Cosine Transformation? Explain it in brief.	**07**
	(b)	Describe the audio compression with proper diagrams.	**07**
		OR	
Q.5	**(a)**	Describe the process of vector quantization.	**07**
	(b)	Answer the Following 1. Inverse DCT 2. Statistical Modeling.	**07**

****