Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY **B.E. - SEMESTER - VIII EXAMINATION - OCTOBER 2012**

Date: 29/10/2012

Subject Code: 181602 **Subject Name: Data Compression** Time: 02.30pm - 05.00pm **Total Marks: 70 Instructions:** 1. Attempt any five questions. 2. Make suitable assumptions wherever necessary. Figures to the right indicate full marks. 0.1 07 Explain Shannon-Fano Algorithm for data compression (a) Draw and explain steps for Huffman coding with the help of example. **07** (a) Explain modeling and coding with the help of suitable examples. **Q.2** 07 Explain LZSS algorithm. **(b)** 07 OR Explain LZ77 algorithm and problems with it. **(b)** 07 What are the various applications of Huffman Coding? Also explain non binary Q.3 (a) 07 Huffman code. **(b)** What do you mean by lossless compression? Compare lossless compression 07 with lossy compression. OR **Q.3** (a) Consider alphabets A,B,C,D,E,F,G,H having probabilities P(xi) given as **07** 1/2,1/4, 1/16,1/16,1/32,1/32,1/32,1/32. Design the Huffman code. **(b)** What is Quantization? Why do we do quantization in JPEG compression? 07 **Q.4** Explain the process of vector quantization. 07 (a) With the help of example explain how we can implement DCT in JPEG 07 **(b)** compression. Explain various types of dictionary techniques of Encoding. Where they can 0.4 07 be used? **(b)** How can we do lossless compression of sound? Explain various techniques. 07 Q.5 14 Write a note on followings (Any 4) (a) Inverse DCT (b) Silence Compression (c) Image compression (d) Speech compression (e) Adaptive coding
