GUJARAT TECHNOLOGICAL UNIVERSITY MCA - SEMESTER-VI • EXAMINATION – SUMMER 2013

Subj	ect C	ode: 640007 Date: 31-05-2013	3
Time	ect IN e: 10	30 am - 01.00 pm Total Marks: 70)
	1. A 2. N 3. F	Attempt all questions. Aake suitable assumptions wherever necessary. Yigures to the right indicate full marks.	
Q.1	(a)	 (i) Name any two compression technique based on statistical model. (ii) Explain the term: sliding window in 'sliding window compression'. (iii) List any three performance measures of data compression. (iv) What do you mean by Prefix property of a code? (v) Define 'static dictionary'? (vi) Write basic function of ADC and DAC. (vii) Name any three file formats using graphic compression. 	07
	(b)	(i) List and explain the data items used in the token in LZ77 technique.(ii) Write an algorithm to build Shannon-Fano tree.	03 04
Q.2	(a) (b)	Explain LZ77 encoding algorithm using string 'Gujarat Gaurav'. Compare LZ77 and LZSS techniques.	07 07
	(b)	Compare LZ77 and LZ78 techniques.	07
Q.3	(a) (b)	Explain two important factors affecting the quality of reproduction of audio waveform. Write a short note on lossless compression of sound.	07 07
Q.3	(a) (b)	OR Discuss about PC-based sound. Write a short note on silence compression of sound.	07 07
Q.4	(a) (b)	Describe the advantages of arithmetic coding over Huffman coding. Explain about differential modulation adaptive coding.	07 07
Q.4 Q.4	(a) (b)	OR Explain encoding of string 'world wide web' using LZW. Explain the problems of using dictionary-based compression methods on graphics.	07 07
Q.5	(a) (b)	Write the use of DCT and IDCT in graphical compression. Given a matrix of pixels, how can one convert it into a DCT matrix?	07 07
Q.5	(a) (b)	Given a matrix of pixels, how can one convert it into a DCT matrix? Discuss about reordering the DCT block in the zig-zag sequence with its purpose.	07 07
