



End Semester Examination – Nov/Dec – 2016

Code : 14EC3010
Sub. Name : DATA COMPRESSION TECHNIQUES

Semester : 2016-17 ODD
Duration : 3hrs
Max. marks : 100

ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)

Q. No.	Sub Div.	Questions	Course Outcome	Marks
1.	a.	Discuss the specific characteristic features of different multimedia data.	CO1	10
	b.	With neat diagram, illustrate the methodology of vector quantization techniques.	CO1	10
(OR)				
2.	a.	Encode the sequence A=[f, g, h, k, m, n] with the probability values [0.3, 0.1, 0.1, 0.2, 0.15, 0.15] respectively using Huffman coding approach.	CO2	10
	b.	Repeat the problem given in the previous question [2(a)] using minimum variance Huffman coding approach. Analyze the differences between both approaches in terms of the length of the code word.	CO2	10
3.	a.	Differentiate lossy and lossless compression techniques.	CO1	10
	b.	How will you judge the performance of any compression techniques? Validate your answer with necessary mathematical equations.	CO1	10
(OR)				
4.	a.	Encode the sequence A=[a, b, c, d, e, f] with the probability values [0.2, 0.1, 0.05, 0.2, 0.15, 0.3] using Shannon Fano coding method.	CO2	10
	b.	The tag value of an encoded dataset A= {1,2,3} is given by 0.765625. Using this tag value, decode the sequence which consists of 4 numerals. Assume the interval as [0, 0.8] for '1', [0.8, 0.82] for '2' and [0.82, 1] for '3'.	CO2	10
5.	a.	Encode the sequence 'dabracacabradabracacabracabradabraca' using digram coding technique. Assume a sample dictionary with any 5 entries and the corresponding code.	CO2	10
	b.	Encode the sequence '....cabracadababbaraca....' using the LZ77 approach. Choose a suitable size for search buffer and look ahead buffer.	CO2	10
(OR)				
6.	a.	Encode the sequence 'wabbawabbawabbawabbawooxwooxwoox' using the LZ78 algorithm.	CO2	10
	b.	With neat block diagram, explain the subband coding method for audio compression applications.	CO2	10
7.	a.	With a numerical example, illustrate the EZW coding methodology in still images.	CO3	10

	b.	How will you compress a still image using JPEG compression technique? Support your answer with necessary mathematical equations	CO3	1 0
(OR)				
8.	a.	With a numerical example, illustrate the SPIHT coding methodology in still images.	CO3	1 0
	b.	With neat block diagram, explain the MPEG methodology of compression of video data	CO3	1 0
<u>Compulsory:</u>				
9.	a.	Comment briefly on the different types of frames available for video compression.	CO3	5
	b.	With neat block diagram, explain the H.261 methodology of compression of video data	CO3	1 5

ALL THE BEST