

Ankit kr

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2016

B Tech (Semester VII) & M Tech (Semester II), Test 1 (Feb. 2016)

COURSE CODE: 10M11CI214

MAX. MARKS: 15

COURSE NAME: Multimedia Systems

COURSE CREDITS: 03

MAX. TIME: 1 HR

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

Ques. 1 [Marks 2] Identifying three novel applications of internet or multimedia applications. Discuss why you think these are novel.

Ques. 2 [Marks 2] Discuss the challenges/issues involved with multimedia communication.

Ques. 3 [Marks 2] Apply Block Truncation Coding (BTC) compression technique on $\begin{bmatrix} 80 & 82 \\ 75 & 76 \end{bmatrix}$? If the block size is increases then what are the effect on the visual quality of the images.

Ques. 4 [Marks 3] Explain the difference between binary and non-binary Huffman code with suitable example? Calculate the efficiency of binary Huffman code for the following symbol whose probability of occurrence is given below:

Symbol	Probability
AAA	0.729
AAB	0.081
ABA	0.081
ABB	0.009
BAA	0.081
BAB	0.009
BBA	0.009
BBB	0.001

Ques. 5 [Marks 3] Discuss the advantages of arithmetic encoding technique over the Huffman code? Consider the following alphabet {e, m, n, o, t} with probabilities as follows: p (e) = 0.6; p (m) = 0.2, p (n) = 0.1, p (o) = 0.05, p (t) = 0.05. Encode the word "emo" with arithmetic encoding.

Ques. 6 [Marks 3] Discuss the algorithmic steps of Haar basis for N=4. Also, calculate the Haar transform of the image

$$g = \begin{pmatrix} 0 & 1 & 1 & 0 \\ 1 & 0 & 0 & 1 \\ 1 & 0 & 0 & 1 \\ 0 & 1 & 1 & 0 \end{pmatrix}$$