

### MANIPAL INSTITUTE OF TECHNOLOGY MANIPAL A Constituent Institution of Manipal University

# VII SEMESTER B.TECH. ((INFORMATION TECHNOLOGY / COMPUTER AND COMMUNICATION ENGINERRING))

### MAKE UP EXAMINATIONS, 2016

### SUBJECT-PROGRAM ELECTIVE-IV: MULTIMEDIA COMMUNICATIONS

## [ICT 435]

#### REVISED CREDIT SYSTEM (//2016)

Time: 3 Hours

MAX. MARKS: 50

#### Instructions to Candidates:

- ✤ Answer ANY FIVE FULL questions.
- ✤ Missing data may be suitably assumed.

1A.	Explain the speech recognition system with a neat diagram.	5
1B.	Consider the textual sequence "aaaaaaaaaccffffffffdddddffffffff". Compress the textual sequence and compare the compression of the textual sequence when applying following compression algorithms: i) Run-Length Coding ii) Shannon Fano Coding	3
1C.	Explain main properties of multimedia system.	2
2A.	Write LZW encoding and decoding algorithm, encode and decode the string "SOLOLOLLOSSLESS" using the LZW.	5
2B.	Why DCT is effective in JPEG encoding? List out the observations which justify the effectiveness of DCT.	3
2C.	What is the importance of Dithering? Specify the main idea used in dithering.	2
3A.	Consider Arithmetic coding with $p(a) = 0.5$ , $p(b)=0.3$ , $p(g) = 0.2$ and consider a word that has the encoded value 0.64 and length of the word is 3. What is the encoded word? Show the steps as you decode.	5
3B.	Write a note oni) I frame codingii) P frame codingiii) B frame coding.	3
3C.	What is the entropy of rolling two dice.	2
4A.	Apply 1D-DCT for the data given below. 50, 100, -5, 18, -24, 32, 10, 75	5
4B.	Differentiate between EDF and Rate Monotonic algorithm.	3
4C.	Differentiate between Huffman coding and Adaptive Huffman coding.	2

5A.	Explain VOP based coding used in MPEG4.	5
5B.	Why we need RTCP? Explain different RTCP packets.	3
5C.	What is QoS? List out different parameters used to measure quality of service of multimedia transmission? Explain each one of them.	2
6A.	With a neat diagram explain RTP header format.	5
6B.	Encode the following data using lossless predictive encoding. 100, 150, 200, 125, 250, 175, 105, 115, 225	3
6C.	Explain inter object and intra object synchronization	2