Reg. No.									

Manipal Institute of Technology

(A Constituent Institute of Manipal University)

III SEMESTER M. C. A.
END SEMESTER EXAMINATION – NOV/DEC 2015

SUBJECT: MULTIMEDIA COMMUNICATIONS [MCA 5016]

04-12-2015

Time : 3 hours | Max. Marks : 50

Instructions to Candidates

1. Answer ANY FIVE FULL questions.
2. Missing data may be suitably assumed.

1A List out the various modes of JPEG with brief explanation.

1B Perform the arithmetic coding for the below given message using following coding model.
Message = GATES BILL

Symbol	Probability
Space	0.1
A	0.1
B	0.1
E	0.1
G	0.1
I	0.1
L	0.2
S	0.1
T	0.1

1C State the Nyquist Theorem for sampling.

(5 + 3 + 2)

2A Compare preemptive and non-preemptive scheduling algorithms in multimedia operating system. Explain earliest deadline first algorithm for real-time processing of Multimedia.

2B Convert following,
R = 233, G = 112, B = 45 to HSI

2C Explain DPCM in the context of audio coding.

(5 + 3 + 2)

3A Code the following sequences of symbols using LZW coding. Show intermediate steps.

AABABBABCABAABAA

List out the advantage of LZW over Huffman coding.

3B Explain general data compression model.

3C List out the four variable length coding techniques.

(5 + 3 + 2)

4A With a neat block diagram explain MP3 audio coding.

4B Compare Huffman and Arithmetic coding.

4C Compare GIF & PNG image format.

(5 + 3 + 2)

5A Explain four layer reference model for synchronization.

5B What is fast motion estimation technique? List out its pros and cons.

List out the pros and cons of variable size block based motion estimation.

5C Compare progressive DCT mode and Hierarchical mode of JPEG compression.

(5 + 3 + 2)

6A Explain H.264 video encoding and decoding with a neat block diagram.

6B Mention the characteristics of MDBMS.

6C How multimedia streams are classified based on periodicity and variation of packet size?

(5 + 3 + 2)