Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

III SEMESTER M.C.A.

END SEMESTER EXAMINATIONS, NOV 2018

SUBJECT: MULTIMEDIA COMMUNICATIONS [MCA 5016]

REVISED CREDIT SYSTEM
(29/11/2018)

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer **ALL** the questions.
- Missing data may be suitable assumed.

1A. With a neat block diagram explain H.264 video coding. **5**

1B. Explain general data compression model. **3**

1C. List out the different transmission modes of multimedia data. (1 Mark) **2**

State the Nyquist Theorem for sampling. (1 Mark)

2A. Consider the symbols {a, b, c, d, e} with probabilities p(a) = 0.15, p(b) = 0.5, p(c) = 0.1, p(d) = 0.2, p(e) = 0.05. **5**

Construct Huffman tree and decode 00011101001100011110101010001

Calculate the entropy.

2B. When variable length coding is useful? Compare Arithmetic and Huffman coding **3**

2C. Write a note on dithering. **2**

3A. List out the advantages and disadvantages of LZW coding. **5**

Code the following sequences of symbols using LZW coding and show intermediate steps.

ABBABBABCABAABBB

3B.	Explain multimedia data structure for various media.	**3**
3C.	Compare GIF with PNG image format.	**2**
4A.	Explain four layer reference model for synchronization. (3 marks)	**5**
	How multimedia streams are classified based on periodicity and variation of packet size? (2 marks)	
4B.	Compare three step motion estimation technique with full search motion estimation. (2 marks)	**3**
	List out various profiles of H.264. (1 mark)	
4C.	Classify the following image format into lossy and lossless image coding.	**2**
	TIFF, EXIF, PS, PDF, BMP, JPEG, PNG, GIF, PMP	
5A.	Explain progressive DCT based JPEG compression.	**5**
5B.	What is the difference between ADPCM and DPCM? (2 marks)	**3**
	Mention the advantages and disadvantages of MIDI. (1 Marks)	
5C.	Compare live and synthetic synchronization. (1 Mark)	**2**
	How flexibility and customizability is achieved in H.264 video coding system. (1 Mark)	