



(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 113852**

Roll No.

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## B. Tech.

### (SEM. VIII) THEORY EXAMINATION, 2014-15 MULTIMEDIA SYSTEMS

Time : 3 Hours]

[Total Marks : 100

1 Attempt any four : 4×5=20

- (1) Explain the term Multimedia. Discuss the role of the multimedia technology in the field of Business and Education.
- (2) Explain Hypertexts and state various features of Hyper Text.
- (3) What are the hardware and software requirements for multimedia computer? Discuss the multimedia application in Business.
- (4) What are the various software tools for creating text for multimedia project?
- (5) Difference between:
  - (i) Interactive media and Hypermedia
  - (ii) Video and animation

2 Attempt any two :  $2 \times 10 = 20$

- (1) With the help of diagram show how a MIDI instrument can be interfaced with PC? How does the MIDI files different from digital audio?
- (2) What are the various audio files format used in multimedia? What are the various digital technique used in multimedia?
- (3) What are the major factors to be taken into account when considering Storage Requirements for Multimedia Systems?

3 Attempt any two :  $2 \times 10 = 20$

- (1) Message comprising seven different characters, A through G, are to be transmitted over a data link. Analysis has shown that the relative frequency of occurrence of each character is :

Symbol	A	B	C	D	E	F	G
Probability	0.05	0.20	0.07	0.32	0.01	0.10	0.25

- (i) Derive the entropy of the message
  - (ii) Use Huffman algorithm to derive a suitable set of codeword
- (2) The following is the probability distribution of symbols in the word "ARITHMETIC".

Symbol	A	C	E	H	I	M	R	T
Probability	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.2

- (3) Consider the text string "YESNOHUFTHUFTHUFYHUFYHUFYHK". Show all the steps of LZ78 compression and decompression including the dictionary formation.

4 Attempt any two :  $2 \times 10 = 20$

- (1) What do you mean by lossy compression and slice compression? Also explain the terms sampling rate and sampling size.
- (2) Define the term Speech Compression. With help of the diagram explain the LPC Encoder and decoder process.
- (3) Explain in detail Lossless audio Methods.

5 Attempt any two :  $2 \times 10 = 20$

- (1) What is the basic concept of Color and also explain the video capturing technique.
- (2) Briefly explain why we need to be able to have less than 24-bit color and why this problem makes for problem. Generally, what do we need to do to adaptively transform 24-bit color values to 8-bit once?
- (3) What are some of animation file formats? What are the some of the advantages or key features of each of these formats?