



Printed Pages : 3

TIT12

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

PAPER ID : 0153

Roll No.

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## B.Tech

(SEM VII) ODD SEMESTER THEORY EXAMINATION 2009-10  
MULTIMEDIA SYSTEMS

Time : 3 Hours]

[Total Marks : 100

- Note :**
- (i) Attempt *all* questions.
  - (ii) All questions carry *equal* marks.
  - (iii) Be *precise* in your answer.
  - (iv) No second answer book will be provided.

1 Attempt any **four** parts :

5×4

- (a) What is multimedia ? Explain any two features of this technology which can be used in business.
- (b) What do you mean by the authoring system ? Explain in brief card paged based and iccn-based event driven tools.
- (c) Differentiate between synthesized and captured media. Describe in brief the concept of virtual environment in multimedia.
- (d) Explain at least six features of an image.

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- (e) Discuss the effect of memory capacity and the processor speed on multimedia application development.
- (f) Explain the concept of convergence of computer, communications and entertainment products.

2 Attempt any **four** parts : 5×4

- (a) Explain the various multimedia building blocks.
- (b) What are the various audio cards used in multimedia ? Explain the steps involved in audio digitization.
- (c) Differentiate between MIDI and digital audio. Give the formula to determine the size (in bytes) of a digital recording from a monophonic recording.
- (d) What is the need of interface design ? Explain five fundamental rules for interface design in multimedia applications.
- (e) Discuss the use of text in multimedia. Explain the terms hypermedia and hypertext.
- (f) What is font ? Explain the font designing and editing tools used in multimedia.

3 Attempt any **two** parts : 10×2

- (a) What is the principle of arithmetic coding ? Generate the tag interval for the alphabet  $A = \{x_1, x_2, x_3\}$  with  $p(x_1) = 0.7$ ,  $p(x_2) = 0.1$  and  $p(x_3) = 0.2$ .

- (b) Differentiate between dictionary based compression and sliding Window compression.
- (c) Explain finite context modelling with examples and also write the algorithm for Shannon-Fano coding.

4. Attempt any **two** parts : 10×2

- (a) Briefly explain why a bidirectional B-frame improves video compression rates. What drawbacks are there with using B-frames ?
- (b) Describe four basic types of data redundancy that data compression algorithms can apply to audio, image, and video signals.
- (c) Briefly describe the quicktime architecture and its components.

5 Attempt any **two** parts : 10×2

- (a) (i) What are the advantages of video compression ? Briefly describe the MHEG standards.
- (ii) Differentiate between a Bitmap and a vector drawing.
- (b) What are the main stages associated with the operation of MPEG ? Give a brief description of the role of each stage.
- (c) Write short notes on :
  - (i) Lossy Graphic Compression
  - (ii) Zig Zag Coding
  - (iii) Multimedia Broadcast Services.