Printed Pages : 3 TIT12

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

PAPER ID : 0153 Roll No.

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 icon-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.

(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.