



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS / B.TECH ( EIE(0), EE(0), EEE ) / SEM-7 / IT-711 / 2010-11**

**2010-11**

**MULTIMEDIA SYSTEMS**

*Time Allotted : 3 Hours*

*Full Marks : 70*

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

**GROUP – A**

**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for the following :  $10 \times 1 = 10$

- i) MIDI stands for
  - a) Musical Interface Digital Instruments
  - b) Musical Instrument Digital Interface
  - c) Musical Instrumental Digital Instruments
  - d) None of these.
- ii) SGML stands for
  - a) Standard Generalized Markup Language
  - b) Simple General Markup Language
  - c) Sorted Graphical Markup Language
  - d) None of these.



- iii) JPEG is a kind of
  - a) lossy compression technique
  - b) non-lossy compression technique
  - c) hybrid compression technique
  - d) none of these.
- iv) In MP3
  - a) the compression layer is 3
  - b) the compression ratio is 3
  - c)  $3 \times 3$  DCT blocks are used
  - d) temporal masking is of the order 3.
- v) DCT stands for
  - a) Discrete Cosine Transform
  - b) Domain Constant transform
  - c) Divergent-Convergent transform
  - d) None of these .
- vi) YUV colour model is a / an
  - a) Additive
  - b) Subtractive
  - c) Orthogonal
  - d) None of these.
- vii) Huffman Coding scheme is an example of
  - a) Hybrid coding
  - b) Source coding
  - c) Entropy encoding
  - d) none of these.
- viii) Which one is the best suited colour model for image processing applications ?
  - a) YUV
  - b) RGB
  - c) CMYK
  - d) HSI.



ix) A VGA monitor has a resolution of (in the terms of pixels)

- a)  $600 \times 480$                       b)  $1024 \times 760$
  - c)  $640 \times 480$                       d) None of these.
- x) Direct-To-Home (DTH) service is a perfect example of
- a) Multimedia                      b) Hypermedia
  - c) Virtual reality                      d) Interactive TV.

**GROUP – B**

**( Short Answer Type Questions )**

Answer any *three* of the following.                       $3 \times 5 = 15$

- 2. What are the limitations of a CD-ROM technology ? Give the architecture of CD-ROM.                       $2 + 3$
- 3. What are the different types of colour models ? Write the relation between YUV and RGB colour models.                       $4 + 1$
- 4. What are the different software applications of MIDI ? Write in brief about MIDI messages.                       $2 + 3$
- 5. Write in brief about I-frame and P-frame coding. What do you mean by temporal and frequency masking ?                       $3 + 2$
- 6. Give and explain about Huffman encoding scheme.

**GROUP – C**

**( Long Answer Type Questions )**

Answer any *three* of the following.                       $3 \times 15 = 45$

- 7. What are the differences between ODA and SGML ? Write in brief about SGML and anchor. What is an anchor ? What is the relation between a hypermedia and hypertext ?

$4 + 6 + 2 + 3$



8. Why is an image ? Explain DCT with suitable diagrams. Why is DCT useful in compression of image ? What are the different popular image file formats ?  $2 + 5 + 4 + 4$
9. Give the block diagrams of a basic MPEG audio encoder and decoder and state its working principles. What is MP3 ? Describe its working principle. What are temporal and frequency masking ?  $8 + ( 1 + 3 ) + 3$
10. Give the architecture of JPEG encoder and explain. What are the component modes of JPEG ? What do you mean by quantization noise ? What is the relation between RGB and CMYK colour model ? Write down about the architecture of Vector display. What is raster scan principle ?  $5 + 2 + 2 + 2 + 3 + 1$
11. Write short notes on any *three* of the following :  $3 \times 5$
- a) Virtual Reality
  - b) Video on demand
  - c) Tweening and morphing
  - d) Digital Camera and its working principle
  - e) Shneiderman's Eighth Golden rules and Norman's Seven Stages of Development.

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