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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.

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- 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?

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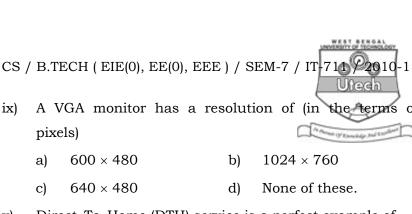
a) YUV

b) RGB

c) CMYK

d) HSI.

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- 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

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- 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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