



Name :
Roll No. :
Invigilator's Signature :

CS/B. Tech (EEE)/SEM-7/IT-711/2011-12

**2011
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) SNR (dB) =
 - a) 4n
 - b) 5n
 - c) 6n
 - d) 8n.
- ii) Interlacing is related with
 - a) RGB colour model
 - b) Character spacing
 - c) Refresh rate
 - d) None of these.
- iii) Anti-aliasing is related with
 - a) RGB colour model
 - b) Character spacing
 - c) Refresh rate
 - d) None of these.
- iv) The difference between the predicted value & the current value is coded with a single bit in
 - a) DPCM
 - b) Delta modulation
 - c) ADPCM
 - d) All of these.

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- v) NTSC is a
 - a) Digital video standard
 - b) Analog video standard
 - c) Audio file standard
 - d) Text file standard.
- vi) Histogram stretching is a process of
 - a) Image recognition b) Image fusion
 - c) Image enhancement d) None of these.
- vii) Kerning is related with
 - a) RGB colour model b) Character spacing
 - c) Refresh rate d) None of these.
- viii) YUV colour model is a
 - a) Additive b) Subtractive
 - c) Orthogonal d) None of these.
- ix) Huffman Coding scheme is an example of
 - a) Hybrid coding b) Source coding
 - c) Entropy encoding 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. a) Write down the different features of Multimedia.
 b) Write down the differences between Raster scan &
 Vector scan.

 $2 + 3$

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3. a) Write down Nyquist Sampling theorem. 2 + 3
b) What do you mean by Quantization ? What is Quantization error ?
4. Write down any algorithm for video compression.
5. Critically comment on CDROM technology.
6. Write in brief about I-frame and P-frame coding. What do you mean by temporal and frequency masking ?

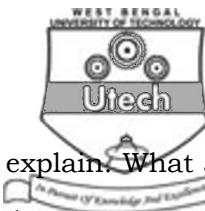
GROUP - C

(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

7. a) What do you mean by Additive & Subtractive colour models ? Describe the models. 5
b) Discuss advantages & disadvantages of Sub-band coding. 5
c) Write down the Norman's seven-stage of action. 5
8. a) Explain DPCM encoding scheme for audio signal. 5
b) What do you mean by Multimedia Authoring ? 5
c) What do you mean by morphing ? Explain temporal & spatial redundancy. 2 + 3
9. a) Explain the working principles of k-d tree & R-tree. 5
b) What is MIDI ? Describe MIDI messages. 1 + 4
c) Explain the working principle of LCD television. 5

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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 ?

3 + 3 + 3 + 3 + 3

11. What do you mean by animation ? What are the differences between tweening and morphing ? What are the different modes of controlling animation ? What is an authoring tool for multimedia ? Write down different authoring tool for design.

3 + 3 + 3 + 3 + 3

12. Write short notes on any *three* of the following : 5×3

- a) HTML
- b) Virtual Reality
- c) Video on Demand
- d) Rich-text format
- e) Digital Camera and its working principle
- f) Components of MIDI messages
- g) Shneiderman's Eighth Golden rules and Norman's Seven stages of Development
- h) Multimedia Database.

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