

CS/B.Tech/CSE/Even/Sem-6th/CS-605C/2015



WEST BENGAL UNIVERSITY OF TECHNOLOGY

CS-605C

MULTIMEDIA TECHNOLOGY

Time Allotted: 3 Hours

Full Marks: 70

The questions are of equal value. 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. Answer all questions. 10x1 = 10
(i) Synthesizer is a (A) protocol (B) port (C) digital instrument (D) all of these
(ii) SGML stands for (A) Standard Group Markup Language (B) Standard Generalized Markup Language (C) Standardized Group Markup Language (D) None of these
(iii) Opening is (A) erosion then dilation (B) dilation then erosion (C) only erosion (D) none of these

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- (iv) In DCT, transformation is (A) time domain to spatial domain (B) spatial domain to time domain (C) time domain to frequency domain (D) spatial domain to frequency domain
(v) CD-ROM operates on (A) 1 mode (B) 2 modes (C) 3 modes (D) 4 modes
(vi) RLE stands for (A) Run Length Encoding (B) Run Line Encoding (C) Reverse Length Encoding (D) None of these
(vii) Gamut in RGB is \_\_\_\_\_ CMYK (A) equal to (B) smaller than (C) larger than (D) twice than that of
(viii) H.261 video bitstream contains (A) 2 layers (B) 5 layers (C) 4 layers (D) none of these
(ix) Xlib is an/a (A) V window System protocol library (B) Graphical widget toolkit (C) Cross platform widget toolkit (D) X window System protocol library
(x) PAL stands for (A) Phase Alternating Line (B) Pulse Alternating Line (C) Both (A) and (B) (D) None of these

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**GROUP B**  
(Short Answer Type Questions)

- Answer any *three* questions. 3×5 = 15
2. What is sampling? Why is it required in multimedia? Define quantization error with a simple example. 2+1+2
  3. What do you mean by animation? What is morphing? Briefly explain cel-animation and sprite-animation. 1+2+2
  4. (a) Define spatial and temporal redundancy? What are different audio file formats? 2+1  
(b) What is rich text? What is glyph in Unicode standard? 1+1
  5. Why synchronization is necessary in multimedia? State the minimization rules of DTD. 3+2
  6. What is the relation between RGB and CMYK color model? What is masking? Explain key frame and tweening. 1+2+2

**GROUP C**  
(Long Answer Type Questions)

- Answer any *three* questions. 3×5 = 15
7. (a) State the Nyquist sampling theorem. A communication channel can carry signal with frequency from 100 Hz to 4.5 kHz. Determine the sampling frequency the band width of band limiting filter. 2+3  
(b) What are the advantages of MIDI over digital audio? 4  
(c) Briefly explain the steps of digitization of audio. 6
  8. (a) What are lossy and lossless compression techniques? Give example of each kind. 3  
(b) Briefly explain JPEG image compression with block diagram. 9

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- (c) Write the display sequence and transmission sequence for video frames. Why are they different? 3
9. (a) What do you mean by CCD? Why is it used? 3  
(b) How would you distinguish different types of Media? Explain with examples. 5  
(c) What is CAV and CLV in case of spinning disk media? 3  
(d) A magnetic disk pack has 12 surfaces out of which 8 are recordable. Each surface has 50 tracks and each track is divided into a number of sectors. If the total capacity of the disk pack is 50 MB and the capacity of each sector is 512 bytes, then 2+2  
(i) How many cylinders are present in the disk pack?  
(ii) How many sectors are present on each track?
10. (a) What is Multimedia Database? Describe in brief how image database is constructed. 2+3  
(b) What is k-D Tree? Explain the structure of 2 dimension k-D Tree by using following points:  
[(6, 1), (5, 5), (9, 6), (3, 6), (4, 9), (4, 0), (7, 9), (2, 9)] 1+5  
(c) What are the synchronization accuracy specification factors? 4
11. (a) Write short notes on any *three* of the following: 3×5  
(a) MPEG  
(b) Device independent color model  
(c) SGML  
(d) Entropy encoding  
(e) Quality of service.

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