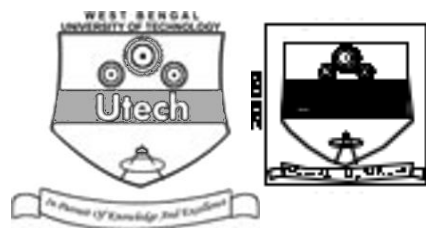


MULTIMEDIA TECHNOLOGY AND APPLICATION (SEMESTER - 6)

CS/B.Tech (IT)/SEM-6/IT-605/09



1.
Signature of Invigilator

2.
Signature of the Officer-in-Charge

Reg. No.

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Roll No. of the
Candidate

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CS/B.Tech (IT)/SEM-6/IT-605/09

ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2009

MULTIMEDIA TECHNOLOGY AND APPLICATION (SEMESTER - 6)

Time : 3 Hours]

[Full Marks : 70

INSTRUCTIONS TO THE CANDIDATES :

- This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.
- In **Group – A**, Questions are of Multiple Choice type. You have to write the correct choice in the box provided **against each question**.
 - For **Groups – B & C** you have to answer the questions in the space provided marked 'Answer Sheet'. Questions of **Group – B** are Short answer type. Questions of **Group – C** are Long answer type. Write on both sides of the paper.
- Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.
- Read the instructions given inside carefully before answering.
- You should not forget to write the corresponding question numbers while answering.
- Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
- Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.**
- You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, **which will lead to disqualification**.
- Rough work, if necessary is to be done in this booklet only and cross it through.

No additional sheets are to be used and no loose paper will be provided

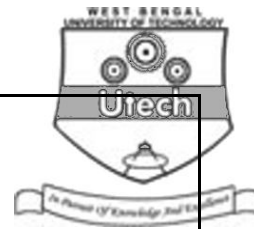
FOR OFFICE USE / EVALUATION ONLY

Marks Obtained

Group – A								Group – B				Group – C				Total Marks	Examiner's Signature
Question Number																	
Marks Obtained																	

.....
Head-Examiner/Co-Ordinator/Scrutineer

6842 (15/06)



DO NOT WRITE ON THIS PAGE



ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE - 2009
MULTIMEDIA TECHNOLOGY AND APPLICATION
SEMESTER - 6



Time : 3 Hours]

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GROUP - A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following :

10 ∞ 1 = 10

i) PAL is a/an

a) digital video standard

b) analog video standard

c) audio file standard

d) text file standard.

☐

ii) Leading is

a) vertical gap between two lines

b) smallest component of written language

c) horizontal gap between two characters

d) none of these.

☐

iii) Raster scanning starts from

a) top left corner of the screen

b) top right corner of the screen

c) bottom left corner of the screen

d) bottom right corner of the screen.

☐



iv) Synthesizer is a/an

a) protocol

b) cable

c) instrument

d) none of these.



v) What will be the size of a 1200×1600 image of 16 bit depth ?

a) 29.29 Mb

b) 117 kb

c) 192 kb

d) none of these.

vi) DCT stands for

a) Discrete Cosine Transformation

b) Direct Colour Transformation

c) Differential Coding Transformation

d) none of these.

vii) Pixel depth will generally be expressed as

a) either 8 bit, 16 bit or 24 bit

b) either 32 bit, 48 bit or 64 bit

c) both (a) and (b)

d) none of these.

viii) CD-ROM operates on

a) 1 mode

b) 2 mode

c) 3 mode

d) 4 mode.



5

ix) .MOV is used for

a) Quick time movie

b) Windows media player

c) MPEG

d) None of these.



x) RLE stands for

a) Reverse Line Encoding

b) Run Length Encoding

c) Run Line Encoding

d) None of these.

GROUP – B**(Short Answer Type Questions)**Answer any *three* of the following.

3 × 5 = 15

2. a) State the Nyquist sampling theorem. A communication channel can carry signal with frequency from 20 Hz to 20 kHz. Determine the sampling frequency. 1 + 2
- b) A 15-inch monitor has aspect ratio 4 : 3 and resolution 85 dpi. What is pixel addressability of monitor ? 2
3. What is colour gamut ? What is anti-aliasing ? What is Gamma ? 1 + 2 + 2
4. What is animation ? What are the types of animation ? Explain keyword and tweening with diagram. 1 + 1 + 3
5. a) What are CAV and CLV in case of spinning disk media ?
- b) An audio CD (CD-DA) contains 70 minutes of audio. Calculate the storage capacity of CD. 3 + 2
6. Compare NTSC, PAL & SECAM, systems of standard for television ? What is HDTV ?

3 + 2



6
GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following.



$$3 \times 15 = 45$$

7. a) Explain the terms 'luminance', 'hue', saturation used to specify the colour characteristics of an image.
- b) Describe briefly RGB colour model. How is it related to CMY [K] colour model. What is the value of K ?
- c) Write down the names of three popular image file formats. $3 + (4 + 4 + 1) + 3$
8. a) Describe the steps of JPEG compression with full explanation.
- b) Compare and contrast JPEG and MPEG.
- c) A series of messages is to be transferred between two computers. The messages comprise the character from A to E. Analysis has shown that the probability (relative frequency of occurrence) of each character is as follows :

$$A = 0.35$$

$$B = 0.17$$

$$C = 0.17$$

$$D = 0.16$$

$$E = 0.15$$

Using the Huffman coding, derive the Huffman tree and also calculate the codeword set.

$$8 + 3 + 4$$

9. a) Define R-tree, Write down the structure of K-d Tree.
- b) What is the purpose to use synchronization ?
- c) Describe briefly multimedia open document architecture. $(3 + 4) + 3 + 5$



10. a) Describe briefly display system technology. Describe raster scanning method.
- b) What do you mean by CCD ? Why is it used ?
- c) How would you distinguish different types of Media ? Explain with example.



(3 + 3) + (2 + 2) + 5

11. Write short notes on any *three* of the following :

3 ∞ 5

- a) MIDI
- b) *I*-frame, *B*-frame and *P*-frame
- c) Video on demand
- d) Scanner
- e) Hypertext & Hypermedia.

END