C 21426

(Pages : 2)

Name.................................

Reg. No..............................
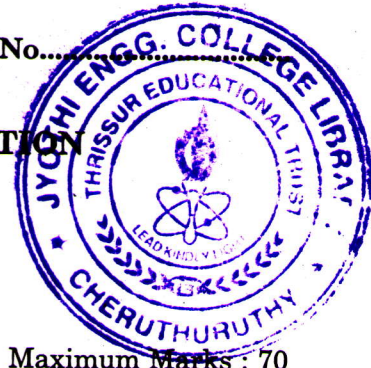
EIGHTH SEMESTER B.TECH. DEGREE EXAMINATION
APRIL 2017

CS / PTCS 09 803 L 15 – MULTIMEDIA

(2009 Admissions)

Time : Three Hours

Maximum Marks : 70

Part A

Answer **all** *questions.*

1. What do you mean by QOS ?

2. What is Psychoacoustics ?

3. Define stereo effect.

4. Differentiate MPEG and DVI.

5. What is the role of standards in Multimedia application ?

(5 × 2 = 10 marks)

Part B

Answer any **four** *questions.*

6. How are multimedia files stored in memory ? Discuss.

7. State Nyquist's Sampling Theorem. Discuss.

8. How does the human eye sense colour ? What characteristics of the colour sensory operators of human visual system can be exploited for the compression of colour images and video ?

9. Explain briefly what motion compensation is used for in MPEG video compression.

10. Write a note on Multimedia information system.

11. Discuss the role of middleware system service architecture in multimedia application.

(4 × 5 = 20 marks)

Part C

Answer all questions.

12. (a) Explain in detail about Multimedia system organization and architecture. (10)

Or

    (b) List multimedia distributed processing models. Discuss in detail. (10)

Turn over

13. (a) (i) What general considerations affect the selection of the sampling rate in multimedia data ?   (5 marks)

(ii) For each of the following media types : audio, graphics, images and video, briefly discuss how sampling affects the quality of the data the cause of sampling artifacts, and the form in which they manifest themselves in each data modality.   (5 marks)

Or

(b) An audio engineer has been presented with a rare audio recording at an established concert hall. The concert hall is still in existence but the performer is not. The audio engineer has been tasked to create a new piece of music incorporating this recording with a new studio recorded backing. The problem is that the reverberation of the concert hall recording does not match the reverb of the new recording. How may the audio engineer achieve a better match to the reverb audio characteristics of the two recordings ?

14. (a) (i) Explain briefly why JPEG compression is not always suitable for compression of images that contain sharp edges or abrupt changes of intensity (such as black text on a white background).   (5 marks)

(ii) Consider the following block of frequency domain values from a video frame arising during MPEG compression :

196	207	1	129
1	7	129	199
11	73	73	194
75	78	139	135

Apply successively to this block : (1) MPEG quantization using a constant quantization value of 64. (2) Zig-Zag scanning. (3) Run length encoding.

(5 marks)

Or

(b) Explain in detail Multimedia applications with examples.   (10 marks)

15. (a) (i) How can design user interfaces for multimedia application ?   (5 marks)

(ii) Write a note on Multimedia standards.   (5 marks)

Or

(b) Explain in detail about distributed multimedia systems.

(10 marks)

[4 × 10 = 40 marks]