C 58400 (Pages : 2) Name.....

Reg. No.....

SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, JUNE 2009

CS 04 606—COMPUTER GRAPHICS AND MULTIMEDIA

(2004 admissions)

Time : Three Hours Maximum : 100 Marks

Answer **all** *questions.*

1. (a) Explain how characters are generated using bit maps and what are their limitations.
   (b) What are the line attributes ? Explain their usage.
   (c) Discuss the issues related to position interaction task.
   (d) What are the different ways of representing polyhedral objects ? Explain.
   (e) Explain why information representation is important in multimedia.
   (f) What is MIDI interface ? What are its components ? Explain.
   (g) Explain the Huffman coding algorithm using an example.
   (h) What is a Database model ? What are its types ? Explain.

   (8 × 5 = 40 marks)

2. (a) Write the midpoint circle scan conversion algorithm and explain.

   Or

   (b) (i) Write the procedure for generating Markers and Polymarkers. (8 marks)

   (ii) Derive the transformation matrices for 2D scaling and 2D rotation about an origin. (7 marks)

3. (a) (i) Using an example, explain the following :—

   Constructive solid geometry.

   Sweep representation.

   (9 marks)

   (ii) Derive the transformation matrix for perspective projection. (6 marks)

   Or

   (b) Discuss the issues related to selection interaction task by considering both fixed size and variable size choice set.

   (15 marks)

4. (a) (i) Describe the characteristics of data stream for continuous media. (8 marks)

   (ii) Classify MIDI messages. Explain the need for each type. (7 marks)

   Or

   (b) Discuss the issues related to Speech Analysis. (15 mmarks)

Turn over

5. (a) (i) Explain the need for Data Compression in Multimedia systems. (8 marks)

(ii) Explain the operations performed on Multimedia Database. (7 marks)

Or

(b) (i) What are the requirements that should be fulfilled by JPEG ? Explain. (8 marks)

(ii) Explain Diatomic encoding. (7 marks)

[4 × 15 = 60 marks]