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5E3162

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5E3162
B. Tech. V Sem.(Re-Back) Exam. Dec. 2012
Computer Science
5CP/CS4 Computer Graphics

Time : 3 Hours **Maximum Marks : 80**

Min. Passing Marks : 24

Instructions to Candidates:

*Attempt any **five questions.*** Selecting one **question** from **each unit.** All Questions carry **equal** marks. Schematic diagram must be shown wherever necessary. Any data you feel missing suitable be assumed and stated clearly.

Units of quantities used/ calculated must be stated clearly.

Use of following supporting material is permitted during examination.

1. **Nil** 2. **Nil**

UNIT-I

Q1. (a) Explain the working principal of raster refresh display with a sketch? (8)

(b) What is the various applications of computer graphics? (8)

OR

(a) Explain following:

(i) Output device

(ii) Aspect ratio

(iii) DVST

(iv) Frame Buffer memory (12)

(b) Explain working principle of Joysticks? (4)

UNIT-II

Q2. (a) Differentiate DDA and Bresenham's line Algorithms. (6)

(b) Explain the steps in Bresenham's line algorithms and use a Bresenham's line algorithms to determine the pixel which would be put on for a line starting as P (20,10) and ending at Q (30,18). (10)

OR

(a) What is scan Conversion? Explain different methods of scan conversion? (8)

(b) What are the important characteristics of the B-Spline curves? (8)

UNIT-III

Q3. (a) What is geometric transformation? Explain taking example of translation & Scaling? Translate the triangle with vertices A (1,1), B(8,1) and C(4,4) by 2 units x-coordinates and by one units along y- coordinate. Sketch the translated triangle. (2+6

(b) Explain the steps involved in 2D-viewing pipeline?

OR

(a) What is projection? Explain the different types of projection used 3-D viewing.

(b) Derive the transformation matrix for rotation about an arbitrary in 2-D.

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UNIT-IV

Q4. (a) What is two dimensional clipping? Explain with an example? (8)

(b) Explain implementation of phong shading model? (8)

OR

a) Explain the RGB color model? What are relationship between RGB & CMY color model? (8)

(b) Explain diffuse reflection illumination model? (8)

UNIT-V

Q5. (a) What is computer audio? Give a few examples to explain its use in multimedia applications? (8)

(b) Explain multimedia software with example? (8)

OR

(a) Explain following:- (8)

(i) JPEG (iii) TIFF

(ii) IDE (iv) DIB

(b) Explain the multimedia components with example? (8)