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6E6024

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B. Tech. VI-Sem. (Main/Back) Exam., April/May-2016
Computer Science

6CS4A Computer Graphics and Multimedia Techniques

Time: 3 Hours

Maximum Marks: 80

Min. Passing Marks (Main & Back): 26

Instructions to Candidates:-

Attempt any five questions, selecting one question from each unit. All Questions carry equal marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly.

Units of quantities used/ calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. NIL

2. NIL

UNIT-I

Q.1 (a) Explain the following terms in context of display devices:

- (i) resolution [2]
- (ii) flickering [2]
- (iii) interlacing [2]
- (iv) refreshing [2]

(b) Go through steps of Bresenham's line drawing algorithm for the line segment between end points (21, 12) to (29, 16). [8]

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OR

- Q.1 (a) Differentiate between Raster and random scan display devices. [6]
 (b) Explain beam penetration method. [6]
 (c) What is importance of 8 – way symmetry in scan conversion of circle? [4]

UNIT-II

- Q.2 (a) Derive composite transformation matrix of translation followed by reflection. [8]
 (b) Describe Cohen – Sutherland line clipping algorithm. [8]

OR

- Q.2 (a) Differentiate between boundary fill and flood fill techniques. [6]
 (b) Provide an example of inverse transformation in homogeneous coordinate system. [6]
 (c) Discuss issues related to polygon clipping. [4]

UNIT-III

- Q.3 (a) How is image space method different from object space method? [4]
 (b) Discuss properties of Bezier curves. [8]
 (c) What are the issues related to hidden surfaces? [4]

OR

- Q.3 (a) Illustrate depth buffer method with diagrams. [8]
 (b) Discuss properties of B-spline curves. [8]

UNIT-IV

- Q.4 (a) Discuss following color models - [4]
 (i) RGB [4]
 (ii) YIQ [4]
 (iii) CMY [4]
 (b) Describe Phong shading. [4]

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OR

- Q.4 (a) What are the various aspects of illumination of objects? [8]
 (b) Describe Gourand shading. [4]
 (c) What is HSV color model? [4]

UNIT-V

Q.5 Write short notes on any two - [8×2=16]

- (a) Multimedia components
 (b) Steps of animation
 (c) Animation techniques
 (d) Multimedia techniques

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