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Question Paper Code : 57256

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2016

Fifth Semester

Computer Science and Engineering

CS 6504 – COMPUTER GRAPHICS

(Regulations 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. Define refresh/frame buffer.
2. What are the merits and demerits of direct view storage tubes ?
3. Define Shear.
4. Define Window.
5. Differentiate parallel projection from perspective projection.
6. What is the need for space partitioning representations ?
7. What is the need for shading model ?
8. List out various properties that describe the characteristics of light ?
9. What is a scripting system ?
10. What is a turtle graphics program ?

PART – B (5 × 16 = 80 Marks)

11. (a) Explain in detail about the Line drawing DDA scan conversion algorithm with an example. (16)

OR

- (b) Explain the following Video Displays Devices
- (i) Refresh cathode ray tube (4)
 - (ii) Raster Scan Systems (4)
 - (iii) Random Scan Displays (4)
 - (iv) Colour CRT Monitors (4)

12. (a) Explain on the following 2D transformations
- (i) General Pivot point rotation (4)
 - (ii) General Fixed Point Scaling (4)
 - (iii) Perform 45 degree rotation of a triangle A(90, 0), B(1, 1) and C(5, 3) about P(-1, -1) (8)

OR

- (b) Explain in detail the Cohen-Sutherland line clipping algorithm with an example. (16)

13. (a) Write notes on :
- (i) Quadric surfaces (8)
 - (ii) Polygon surfaces (8)

OR

- (b) Explain a method to rotate an object about an axis that is not parallel to the coordinate axis with a neat block diagram and derive the transformation matrix for the same. (16)

14. (a) Explain in detail on RGB and HSV colour models. (16)

OR

(b) Write notes on Phong model and Warn model in detail. (16)

15. (a) (i) Define animation sequence. Explain the various steps involved in animation sequence. (8)

(ii) What is Koch Curve ? Explain in detail. (8)

OR

(b) (i) Explain Raster Animation. (8)

(ii) What is Fractal ? Explain in detail the various fractals. (8)