Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 20370

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

Fifth Semester

Computer Science and Engineering

CS 6504 — COMPUTER GRAPHICS

(Regulations 2013)

(Common to PTCS 6504 – Computer Graphics for B.E. (Part-Time) Fifth Semester – Computer Science and Engineering – Regulations 2014)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is DVST? Give its importance.

2. Mention the two basic approaches to area filling on raster systems.

3. What is the need of homogeneous coordinates?

4. What are the types of clipping?

5. Define blobby object.

6. Differentiate between parallel and perspective projections.

7. What is meant by illumination?

8. What is HSV color model?

9. What is Morphing?

10. Mention the characteristics of a fractal object.

PART B — (5 × 13 = 65 marks)

11. (a) With suitable diagram, describe the architecture of a raster-graphics system with a display processor. (13)

Or

(b) Explain the Bresenham's line drawing algorithm with suitable example. (13)

12. (a) Discuss the various two dimensional basic transformations with suitable figures. (13)

Or

(b) Explain the Weiler-Atherton Polygon Clipping. (13)

13. (a) Describe the quadratic surfaces in detail. (13)

Or

(b) Explain the depth-buffer method of detecting the visible surfaces. (13)

14. (a) (i) Discuss about the XYZ color model. (6)

(ii) Write a note on CIE chromaticity diagram. (7)

Or

(b) Write a note on :

(i) RGB color model (6)

(ii) CMY color model. (7)

15. (a) Explain the steps involved in the design of animation sequence. (13)

Or

(b) Briefly describe the following :

(i) Ray Tracing (6)

(ii) Koch curve (7)

PART C — (1 × 15 = 15 marks)

16. (a) Use the Cohen Sutherland algorithm to clip line P1(70, 20) and P2(100, 10) against a window lower left hand corner (50, 10) and upper right hand corner (80, 40). (15)

Or

(b) Suppose we have a B-spline curve of degree 3 with a knot vector as follows : (15)

u0 to u3	u4	u5	u6	u7	u8 to u11
0	0.2	0.4	0.6	0.8	1

Insert a new knot t = 0.5, find new control points and new knot vector.

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