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

Question Paper Code: 45805

B.E. / B.Tech. DEGREE EXAMINATION, MAY 2018

Fifth Semester

Information Technology

14UIT505 - GRAPHICS WITH OPENGL

(Regulation 2014)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The region code of a point within the window is _____

(a) 0101 (b) 0110 (c) 0000 (d) 1000

2. Line drawing is accomplished by calculating _____ positions along the line path between two specified end points positions.

(a) Intermediate (b) Exterior (c) Interior (d) Diagonal

3. Perspective Projection is a method for generating a view of a _____ dimensional scene is to project points to the display plane alone converging paths.

(a) three (b) two (c) one (d) multi

4. The process of extracting a portion of a database or a picture, either inside or outside a specified region are called

(a) Transformation (b) Projection
(c) Clipping (d) Mapping

5. A raster object consists of a bitmap and is used for _____ creation.

(a) Shape (b) Structure (c) Texture (d) Node

6. A CMY color model is useful for describing color output to _____ devices.

(a) Softcopy based (b) Hardcopy based
(c) Simulation based (d) all the above

7. Shadow mask method is usually used in

(a) LCD (b) Raster Scan display
(c) Random scan display (d) DVST

8. Significant feature of GLSL is

(a) to code shorter programs (b) to give create good images
(c) to give create segmented images (d) to code larger programs

9. _____ is used for creating images of great beauty and staggering complexity.

(a) Julia Set (b) Z Buffer
(c) Mandelbrot set (d) Ray tracing

10. Invariant fractal sets are formed with _____ transformations.

(a) nonlinear (b) linear (c) geometric (d) All the above

PART - B (5 x 2 = 10 Marks)

11. What are the various types of Text clipping?

12. Define quadric surface.

13. Write the significant features of Animation.

14. Define Rendering.

15. Write the algorithm for adding surface texture.

PART - C (5 x 16 = 80 Marks)

16. (a) (i) Explain Bresenham's line drawing algorithm with example. (8)

(ii) Discuss about mid-point ellipse drawing algorithm. (8)

Or

(b) Discuss the polygon clipping and Text Clipping algorithms, with example. (16)

17. (a) Differentiate parallel and perspective projections with example and derive their projection Matrices. (16)

Or

(b) How will you model three dimensional objects in Graphics programming? Explain this with a curved line and Spline examples. (16)

18. (a) Discuss on the methods used in OPENGL for drawing a 3 D window and also write a simple program to display a window on the screen. (16)

Or

(b) Write notes on RGB, CMY and HSV color models and its conversions. Also give its advantages. (16)

19. (a) Describe the procedure for creating shaded objects and adding shadows of objects. (16)

Or

(b) Explain about adding texture to faces and rendering of Texture. (16)

20. (a) What is ray tracing?. Explain the setting up the geometry of Ray Tracing. (16)

Or

(b) (i) Write short notes on applying boolean operations on modeled objects to create new objects. (8)

(ii) Brief about transparency. (8)