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

Question Paper Code: 45805

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

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. The midpoint method calculates pixel positions along the_____ of a circle

   (a) circumference (b) diameter (c) radius (d) chord

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. Backface removal algorithm is example of

(a) object space (b) image space (c) both (a) and(b) (d) none of these

7. Constant-intensity shading is also called as

(a) flat shading (b) gouraud shading
(c) phong shading (d) fast phong shading

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. Fractals are created using

(a) Expressions (b) Equations (c) Iterations (d) Formulas

PART - B (5 x 2 = 10 Marks)

11. What are the various types of Text clipping?

12. List out any four 3D Issues.

13. Write the significant features of Animation.

14. Define Rendering.

15. Differentiate Mandelbrot and Julia sets.

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) (i) Describe depth buffer method for detection of visible surface. (8)

(ii) Discuss about polygon tables. (8)

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 how to generate 3D objects and scenes using OpenGL. Explain with its sample coding. (16)

Or

(b) Discuss how to generate 3D objects and scenes using OpenGL. Explain with its sample coding. (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) Explain space-subdivision ray tracing method. (16)

Or

(b) Explain in detail Boolean operations on modeled objects to create new objects. (16)

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