

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech. Summer 2018 - 19 Examination

Semester: 6
Subject Code: 03105382
Subject Name: Computer Graphics

Date: 09/05/2019
Time: 10:30 To 01:00pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective Type Questions - (Each of one mark)**(15)**

1. A 2-D rotation is applied to an object by reposition it to along a?
 - a) circular path in X-Y plane
 - b) Diagonals path in a X-Y plane.
 - c) Straight path in X-Y plane
 - d) Upward in a X-Y plane
2. The Region Code 0000 represents the _____?
 - a) Viewing Window
 - b) Left Clipping Window
 - c) Right Clipping Window
 - d) Bottom Clipping Window
3. The center of projection for parallel projection is at
 - a) Zero
 - b) Infinity
 - c) One
 - d) None of these
4. In cavalier projections DOP makes an _____angel with View Plane
 - a) 70°
 - b) 45°
 - c) 90°
 - d) 63°
5. In Scaling, if both scaling parameter are same then _____ scaling will perform.
 - A. Uniform Scaling
 - B. Non-Uniform Scaling
 - C. both A & B
 - D. none of these.
6. The rectangular portion of a interface window that defines where the image will actually appear are called _____
7. DVST stands for _____
8. The ratio of vertical points to the horizontal points necessary to produce length of lines in both directions of the screen is called _____
9. _____ number of guns are used in shadow mask method.
10. Beam penetration method is used in _____ scan system.
- 11 On a black and white system with one bit per pixel, the frame buffer commonly called as _____
12. The range of colors that can be described by combinations of other colors is called _____
13. The process of extracting a portion of a database or a picture inside or outside a specified region are called _____
14. Find out Frame Buffer size with 12 bits per pixel for 640×480
15. Define Vanishing Point.

Q.2 Answer the following questions. (Attempt any three) (15)

A) Consider the square A(1,0), B(0,0), C(0,1), D(1,1). Rotate the square ABCD by 45° clockwise about A(1,0)

B) Explain ambient, diffuse and specular reflection with all necessary diagram and equations.

C) Explain the steps in midpoint circle drawing algorithm with suitable diagram

D) Find the new coordinates of a triangle A(0,0), B(1,1), C(5,2) after it has been

(a) magnified to twice its size and

(b) Reduced to half its size.

Q.3 A) Draw the architecture and explain working of raster scan display system with horizontal and vertical interlacing. (07)

B) Calculate (x,y) coordinates of Bézier curve described by the following 4 control points: (0,0), (1,2), (3,3), (4,0) (08)

OR

B) Briefly Explain Z-buffer visible surface determination algorithm (08)

Q.4 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) (07)

OR

A) Explain and Write Liang Barsky Line Clipping algorithm. (07)

B) write short note on following (08)

1) RGB Color Model

2) Parallel Projection