

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI • EXAMINATION – SUMMER 2013****Subject Code: 160703****Date: 28-05-2013****Subject Name: Computer Graphics****Time: 10.30 am - 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a)** 1. What is computer Graphics? List the application of Computer Graphics. **03**  
 2. Write Short note on following. **04**  
 1. Pros and Cons of DDA Line Drawing Algorithm.  
 2. Light Emitting Diode.
- (b)** Consider the line from (20, 10) and (30, 18). Use the Bresenham Line Drawing algorithm to rasterizing the line. **07**
- Q.2 (a)** Explain rules are used to identify interior regions of an object with an example. **07**  
**(b)** 1. Write short note on Flood fill algorithm. **04**  
 2. List merit and demerit of DVST **03**
- OR**
- (b)** 1. Write short note on Boundary fill algorithm. **03**  
 2. List merit and demerit of Plasma Panel Display. **04**
- Q.3 (a)** 1. Explain Bitmap method used for Character generation. **03**  
 2. Explain Cohen -Sutherland line clipping algorithm. **04**  
**(b)** Translate a Square ABCD with the coordinates A(0,0), B(5,0), C(5,5), D(0,5) by 2 units in X-direction and 3 units in Y-direction. **07**
- OR**
- Q.3 (a)** 1. Explain Stroke method used of Character generation. **03**  
 2. Explain with merits Liang-Barky line clipping algorithm. **04**  
**(b)** Apply the shearing transformation to Square with A(0,0), B(1,0), C(1,1) and D(0,1) as given below: **07**  
 a) Shear parameter value of 0.5 relative to line Yref = -1  
 b) Shear parameter value of 0.5 relative to line Xref = -1
- Q.4 (a)** 1. Define Window and Viewport. **04**  
 2. Write down short note on Depth Cueing. **03**  
**(b)** What is Bezier Curve? Define properties of Bezier Curve. **07**
- OR**
- Q.4 (a)** 1. Define Concave and Convex polygon with an example. **04**  
 2. Define Visible Line & Surface identification. **03**  
**Q.4 (b)** What is Parallel Projection? Explain in details types of Parallel Projection. **07**
- Q.5 (a)** 1. Briefly explain Back Face Detection algorithm. **04**  
 2. Define Ambient Light. **03**  
**(b)** 1. Define Gouraud Shading. **02**  
 2. Write Short note on RGB Color Model. **05**
- OR**
- Q.5 (a)** 1. Briefly Explain A-Buffer Algorithm with its merits. **04**  
 2. Define Diffuse Reflection. **03**  
**(b)** 1. Define Phong Shading. **02** 2. Write Short note on CMY Color Model. **05**

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