

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-VI • EXAMINATION – WINTER 2013**

**Subject Code: 160703****Date: 02-12-2013****Subject Name: Computer Graphics****Time: 02:30 pm to 05:00 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) List various techniques used for display graphics in computer. Explain CRT display with the help of diagram. **07**
- (b) List and explain various 2D transformations. **07**
- Q.2** (a) List and explain various character generation techniques. **07**
- (b) Explain working of Touch Panel and digitizer. **07**
- OR**
- (b) Discuss mid point circle drawing algorithm with example. **07**
- Q.3** (a) Compare DDA line drawing with bresenham's line drawing algorithm. **07**
- (b) Explain YIQ and CMY color models. **07**
- OR**
- Q.3** (a) What is polygon clipping? Explain Sutherland Hodgeman polygon clipping algorithm with the help of example. **07**
- (b) What is view port? Explain window to viewport transformation. **07**
- Q.4** (a) Explain parallel and perspective projection with the help of diagram. **07**
- (b) Write a short note on Hidden line removal. **07**
- OR**
- Q.4** (a) Derive equation for 3-D scaling, 3-D rotation and 3-D translation. **07**
- (b) Explain Cohen Sutherland line clipping algorithm with example. **07**
- Q.5** Write a note on following (Any four) **14**
- (i) Scan line algorithm
- (ii) Beam penetration and shadow mask technique.
- (iii) Shearing and reflection
- (iv) Raster scan and random scan
- (v) Back face detection

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