

GUJARAT TECHNOLOGICAL UNIVERSITY
BE – SEMESTER – VI (OLD).EXAMINATION – WINTER 2016

Subject Code: 160703

Date: 22/10/2016

Subject Name: Computer Graphics

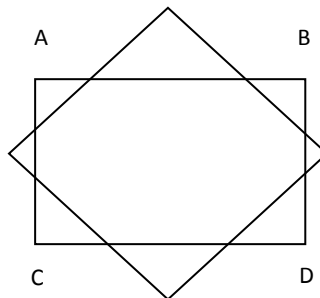
Time: 10:30 AM to 01:00 PM

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) Explain scan line fill algorithm. What is the use of edge table and active edge list? **07**
- (b) 1. Explain beam penetration method. **03**
2. How long it would take to load a 640 x 400 frame buffer with 12 bits per pixel, If 105 bits can be transferred per second? **02**
3. Define: Aspect Ratio and Persistence **02**
- Q.2** (a) Explain working of Cathod Ray Tube with diagram. **07**
- (b) Give advantages and disadvantages of DDA algorithm. Draw a line from (0,0) to (8,4) using DDA algorithm. **07**
- OR**
- (b) Discuss midpoint circle algorithm with example. **07**
- Q.3** (a) Prove that two successive 2D rotations about origin are additive. **07**
- (b) Explain Cohen Sutherland line clipping algorithm. **07**
- OR**
- Q.3** (a) Consider line AB with coordinates of the line A(2, 3) and B(4, 5) in the coordinate plane. Perform reflection of this line about origin and draw the same. **07**
- (b) Write the Sutherland – Hodgeman polygon clipping algorithm. Using it clip the given polygon against the clipping window ABCD. **07**



- Q.4** (a) Write a short note on B-Spline curve. **07**
- (b) What is Parallel Projection? Explain in details types of Parallel Projection. **07**
- OR**
- Q.4** (a) Compare parallel and perspective projection for 3D display. **07**
- (b) Explain 3D Rotation in detail. **07**
- Q.5** (a) Explain different types of reflections form object surface. **07**
- (b) Write a short note on HSV color model. **07**
- OR**
- Q.5** (a) Explain Z buffer algorithm for hidden surface removal. **07**
- (b) Write a short note on RGB color model. **07**
