

**R06**

**Code No: MC309**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**MCA III Semester Examinations, February 2012**

**COMPUTER GRAPHICS**

**Time: 3hours**

**Max.Marks:60**

**Answer any five questions  
All questions carry equal marks**

- - -

1. a) What are the areas of Computer Graphics. Briefly explain.  
b) Distinguish between raster-scan and random-scan systems.
2. a) Explain the steps involved in Bresenham's line generation algorithm.  
b) Explain the steps involved in flood fill algorithm for polygon filling. What are its advantages and disadvantages?
3. a) Prove that two successive rotations in 2-D are commutative in nature.  
b) Explain the steps involved in deriving the transformation matrix for reflecting an object about an arbitrary plane which is of the form  $y = mx+c$ .
4. a) Illustrate the viewing pipeline. With suitable flow diagram.  
b) What is the principle of cyrus, beck algorithm? Illustrate with suitable examples.
5. a) Explain the algorithm for curve generation using B-spline method. What are its advantages?  
b) Give a brief note about the basic illumination model.
6. a) Derive the transformation matrix to align an arbitrary axis with z-axis.  
b) The transformation matrix used rotation in 3-D could also be used for reflection. Explain how.
7. a) Explain how the visible surface detection methods are classified.  
b) Explain the octree method for visible surface detection.
8. a) Explain what the issues in design of animation sequence?  
b) Give a brief note about computer animation languages.

\*\*\*\*\*