

Registration no:

--	--	--	--	--	--	--	--	--	--

Total Number of Pages: 02

**B.TECH**  
**PCCS4401**

**7<sup>th</sup> Semester Regular / Back Examination 2015-16**  
**COMPUTER GRAPHICS**

**BRANCH: AEIE, BIOMED, EC, ETC, FASHION, IEE, IT**

**Time: 3 Hours**

**Max marks: 70**

**Q.CODE: T469**

**Answer Question No.1 which is compulsory and any five from the rest.**  
**The figures in the right hand margin indicate marks.**

- Q1** Answer the following questions: **(2 x 10)**
- a) Define aspect ratio. Differentiate between NTSC and PAL systems
  - b) Define persistence. What type of persistence systems are used in doing animation?
  - c) What is shearing? Give the equation for shearing.
  - d) Differentiate between Viewport and Window.
  - e) Distinguish between half toning and dithering.
  - f) Distinguish between Bezier curve and B-Spline curve.
  - g) What is a random fractal? Give example and explain its construction.
  - h) Differentiate between A-buffer method and depth buffer method.
  - i) What is morphing? Give an example and explain its construction.
  - j) Give examples of at least two input and two output virtual reality devices.
- Q2** a) How raster scan systems works? Give the block diagram and explain its working to draw an image. **(5)**
- b) Draw the random graphics system and point out the differences between raster graphics and random graphics system. **(5)**
- Q3** a) Write an Bresenham's circle drawing algorithm and using it draw a circle with radius 8 using centre point (0,0). **(5)**
- b) Using two dimensional transformation, show how a polygon with vertices (10, 8), (5, 7), (5, 3), (15, 3), (15, 7) can be rotated 90<sup>0</sup> clockwise and then reduced to half. Represent it in one equation. **(5)**
- Q4** Write down the Cohen Sutherland algorithm for line clipping. Using this clip the line having vertices (-3/2, 1/6) and (1/2, 3/2) within the window (-1,1,-1,1). **(10)**
- Q5** a) Write down the seed fill algorithm and compare it with scan line algorithm. **(5)**
- b) Draw the Bezier curve using a set of control points (0,1), (2,5), (5,5) and (8,0). **(5)**

- Q6** a) What is Painters algorithm? Explain with an example. (5)  
b) Give an account of basic model of illumination. (5)
- Q7** a) How is the Z buffer used to make closer objects display in front of farther ones? (5)  
b) Give an account of different methods for controlling animation. What is the difference between key frame animation and procedural animation? (5)
- Q8** Write short notes on any two: (5 x 2)  
a) Shear transformation  
b) Aliasing  
c) Thresholding  
d) Lightpen