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Total number of printed pages – 2

B. Tech  
PCCS 4401

**Seventh Semester (Special) Examination – 2013**

**COMPUTER GRAPHICS**

**BRANCH : CSE, TEXTILE**

**QUESTION CODE : D 382**

**Full Marks – 70**

**Time : 3 Hours**

*Answer Question No. 1 which is compulsory and any **five** from the rest.*

*The figures in the right-hand margin indicate marks.*

1. Answer the following questions : 2×10
- (a) Define aspect ratio.
  - (b) Find the width of an image having height of 5 inches and an aspect ratio 1.5.
  - (c) Explain briefly the characteristics of phosphor.
  - (d) What are the disadvantages of line drawing algorithm ?
  - (e) What is the difference between aliasing and anti-aliasing ?
  - (f) What do you mean by composite transformation ?
  - (g) Define half toning.
  - (h) Write the three dimension matrix for scaling operation.
  - (i) Write the difference between Gouraud and Phong shading.
  - (j) What is the use of painter's algorithm ?
2. (a) Illustrate Bresenham's line drawing algorithm. 5
- (b) Write Bresenham's circle drawing algorithm. 5

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3. (a) Derive the matrix representation for two dimensional transformation translation, scaling and rotation in homogenous coordinate system. 5
- (b) Explain raster scan and random scan. 5
4. Write Cohen-sutherland line clipping algorithm with example. 10
5. (a) Define a spline. Draw the Bezier curve using a set of control points (1,0), (2,5), (5,8), (8,0) 5
- (b) Distinguish between parallel and perspective projections. 5
6. (a) Write Depth buffer algorithm for hidden surface removal. 5
- (b) What do you mean by shading? Explain Gouraud shading. 5
7. (a) Explain basic illumination model in details. 5
- (b) Differentiate between keyframe and procedural animation. 5
8. Write short note on any **two** of the following 5×2
- (a) Morphing
- (b) Virtual reality
- (c) Computer animation
- (d) Fractals