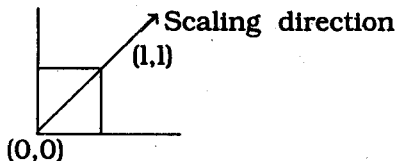


**2011****M.Sc.****1st Semester Examination****COMPUTER SCIENCE****PAPER—COS-104***Full Marks : 50**Time : 2 Hours**The figures in the margin indicate full marks.**Candidates are required to give their answers in their own words as far as practicable.**Illustrate the answers wherever necessary.**All notations have their usual meaning.***Module—1**Answer any *two* questions.

1. (a) Explain the algorithm of Generalized Bresenham's line generation. The explanation should contain code along with precise narrative description. 5
- (b) Show the different pixel position that to be plotted to generate a line from the point (0, 2) to the point (4, 5) using any standard algorithm. 5

*(Turn Over)*

2. (a) What is homogeneous coordinate ? How homogeneous coordinates are used for transformation computations in computer graphics. 2+3
- (b) Find a single transformation matrix to scale a unit square placed at the origin along its diagonal  $(0, 0) - (1, 1)$  by a scale factor of 2. 5



3. (a) What is projection ? Why is it needed. 2+2
- (b) Mention the different types of projection in computer graphics. 6
4. (a) Mention the different standard of 3D reflection. 5
- (b) Show that a pair of parallel st. lines remains parallel even after transformation by the general  $2 \times 2$  transformation matrix. 5

**[ Internal Assessment — 05 ]**

## Module—2

Answer any *four* questions.

1. What are the fundamental steps of frequency domain enhancement? Explain. 5
2. Explain Butter worth high pass and low pass filter. 5
3. What is histogram of an image? 2  
What do you mean by histogram equalization? 3
4. Explain Gradient and Laplacian operator for enhance the image in spacial domain. 5
5. Explain log and power-law transformation which is used in image processing. Why these type of transformation used in image processing. 5
6. What are the major component of an image processing system? Explain. 5
7. Write short note (any two) :  $2\frac{1}{2} \times 2$ 
  - (i) Neighbours of pixel ;
  - (ii) Sampling & Quantization ;
  - (iii) Distant between pixel.

**[ Internal Assessment — 05 ]**

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