

**2013***Time: 3 hours**Full Marks: 80*

*Candidates are required to give their answers in their own words as far as practicable*

*The questions are equal value.  
Answer any **five** questions in which  
Q.No. 1 is compulsory.*

1. Indicate the correct answer of the following:

- (a) Which among the following belongs to presentation graphic?
  - (i) Batch charts
  - (ii) CAD
  - (iii) Line graphs
  - (iv) Both (i) and (iii)
- (b) The maximum no. of points can be displayed without overlap on a CRT is referred as:
  - (i) Resolution
  - (ii) Persistence
  - (iii) Attenuation
  - (iv) None of these
- (c) Which among the following can be used for circle generation?
  - (i) Bresenham's algorithm
  - (ii) Mid Point algorithm
  - (iii) Both (i) and (ii)
  - (iv) None of these
- (d) Which among the following techniques is used in Midpoint subdivision algorithm?
  - (i) Binary search
  - (ii) Bubble sort
  - (iii) Linear search

- (iv) Sequential search
  - (e) How many matrices are required to rotate an objects about a point (x, y)?
    - (i) 2
    - (ii) 3
    - (iii) 4
    - (iv) 5
  - (f) If  $Q = -90^\circ$ , then rotation is performed in which direction?
    - (i) Counter clockwise
    - (ii) Anticlockwise
    - (iii) Clockwise
    - (iv) Both (i) and (ii)
  - (g) Which of the following is not a hidden surface removal algorithm?
    - (i) Depth sort
    - (ii) Printer algorithm
    - (iii) Z-buffer
    - (iv) None of these
  - (h) In hypermedia, which of the following links are not acceptable?
    - (I) Images
    - (ii) Audion chips
    - (iii) Animated videos
    - (iv) None of these
2. What do you mean by Computer Graphics? Discuss application area of computer graphics.
  3. What are the different input devices used in computer graphics? Give a brief description of any five input devices.
  4. How can you develop Bresenham's general line drawing algorithm? Draw a line using Bresenham's algorithm having point (-1, 7) and (5, 9).
  5. Explain the Sutherland Chohen line chipping algorithm.
  6. What do you mean by Transformation? Explain various transformations possible in 2D graphics.
  7. Consider the triangle ABC whose coordinates are A(4,1), B=(5,2) and C=(4, 3)
    - a) Reflect the given triangle about x-axis.
    - b) Reflect the given triangle about y-axis.

8. How do you represent a point in 3D graphics? What are the advantages of homogenous coordinates?
9. Describe how a 3D object is presented on the screen using perspective projection. Take a simple object for illustration.
10. Define multimedia and its types. Describe the various building blocks of a multimedia system.