



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/BCA/SEM-3/BCA-303/2012-13  
2012**

**GRAPHICS & INTERNET**

Time Allotted : 3 Hours

Full Marks : 70

*The figures in the margin indicate full marks.*

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

**GROUP - A**

**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for the following :

10 × 1 = 10

- i) Aspect ratio is
  - a) the ratio of image's width to its height
  - b) the ratio of window to viewport height
  - c) the ratio of image's intensity levels
  - d) the ratio of image's height to its width.
  
- ii) The Cohen-Sutherland line clipping algorithm divides the entire region into ..... numbers of sub-regions.
  - a) 4
  - b) 8
  - c) 9
  - d) 10.

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iii) Sutherland-Hodgeman algorithm is used for

- a) Line clipping
- b) Point clipping
- c) Polygon clipping
- d) Hybrid clipping.

iv) Z-buffer algorithm is used for

- a) Frame buffer removal
- b) Hidden line removal
- c) Rendering
- d) Animation.

v) The blending functions of Bezier curves are

- a) Splines
- b) Bernstein polynomials
- c) Lagrangian polynomials
- d) Newton polynomials.



- vi) Oblique projection is
- a) an orthographic projection
  - b) a perspective projection
  - c) a parallel projection
  - d) axonometric projection.
- vii) What will be the value of starting decision parameter if we intend to draw a line between  $A ( 3, 6 )$  and  $B ( 4, 9 )$  using Bresenham's algorithm ?
- a) 6
  - b) 5
  - c) 3
  - d) none of these.
- viii) The 2D transformation, where the shape of an object is always distorted is
- a) Translation
  - b) Scaling
  - c) Shearing
  - d) Both (b) and (c).

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- ix) HTTP stands for
- a) Hyper Text Transfer Protocol
  - b) Hyper Text Transition Protocol
  - c) Hyper Text Transaction Protocol
  - d) none of these.
- x) 'METHOD' and 'ACTION' are attributes of
- a) <FORM> tag
  - b) <FRAME> tag
  - c) <INPUT> tag
  - d) <FRAMESET> tag.

**GROUP - B**

**( Short Answer Type Questions )**

Answer any *three* of the following.  $3 \times 5 = 15$

2. Define the following terms :  $1 + 1 + 1 + 1 + 1$
- a) Triad
  - b) Aspect Ratio
  - c) Refresh Rate
  - d) Interlacing
  - e) Bit Plane.



3. Consider the two different raster systems with resolutions of  $800 \times 600$  and  $2560 \times 2048$ . What size of the frame buffers is needed for each of these systems to store 24 bits per pixel ? How much storage is required for each system if 16 bits per pixel are to be stored ?
4. a) What are the different layers in the OSI network model ? 2
- b) Describe TCP and UDP services provided by the transport layer. 3
5. Write the tags for the following settings in HTML :
- $1 + 1 + 1 + 1 + 1$
- a) Background image
- b) Font colour, size and face
- c) Image insertion with height and width specification
- d) Text hyperlink
- e) Background colour.



**GROUP - C**  
**( Long Answer Type Questions )**

Answer any *three* of the following.  $3 \times 15 = 45$

6. a) Write mid-point circle drawing algorithm and generate coordinates for a circle of radius 12 cm with the centre located at ( 0, 0 ). 4 + 6
- b) Explain in brief different categories of parallel and perspective projection in 2D. 5
7. a) What do you mean by clipping ? Name different types of clipping. 3
- b) Discuss with example Cohen-Sutherland clipping algorithm. 7
- c) Draw the Bezier curve defined by the control points ( 2, 1 ), ( 3, 2 ), ( 5, 0 ) and ( 6, 2 ). 5
8. a) Derive composite transformation matrix for
- i) two successive rotations
  - ii) two successive scalings
  - iii) general pivot point rotation. 3 + 3 + 4
- b) Briefly explain class-full static IP addressing systems. 5



9. Write short notes on any *three* of the following : 3 × 5

- a) Raster scanning display system
- b) Parametric method of circle drawing
- c) SMTP
- d) E-commerce
- e) FTP.

