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.

3186   [Turn over

    iii)   Sutherland-Hodgemann 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).

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 × 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 × 600 and 2560 × 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 × 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.

————————