



BRAINWARE UNIVERSITY

Term End Examination 2020 - 21

Programme – Bachelor of Science (Honours) in Computer Science

Course Name – Computer Graphics

Course Code - BCS502B

Semester / Year - Semester V

Time allotted : 85 Minutes

Full Marks : 70

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 70=70

1. *(Answer any Seventy)*

(i) The device which is used to position the screen cursor is

- | | |
|---------------|-------------------------------|
| a) Mouse | b) Joystick |
| c) Data glove | d) Both joystick & data glove |

(ii) Trackball is

- | | |
|---------------------------------------|--|
| a) Two-dimensional positioning device | b) Three- dimensional positioning device |
| c) Pointing device | d) None of these |

(iii) _____ is used for 3D positioning and modeling, animation and other application.

- | | |
|---------------|-----------------|
| a) Space ball | b) Trackball |
| c) Spac ball | d) All of these |

(iv) Which is the device that is constructed with the series of sensors that detects hand and finger motion?

- | | |
|---------------|---------------|
| a) Digitizers | b) Data glove |
| c) Joystick | d) Track ball |

(v) On raster system, lines are plotted with

- | | |
|----------|---------|
| a) Lines | b) Dots |
|----------|---------|

c) Pixels

d) None of these

(vi) In color raster system, the number of color choices available depends on

a) colors in frame buffer

b) Amount of storage provided per pixel in frame buffer

c) RGB color

d) Neither colors in frame buffer nor Amount of storage provided per pixel in frame buffer

(vii) The color code "000" is for

a) White

b) Black

c) Blue

d) Green

(viii) Color information can be stored in

a) Main memory

b) Secondary memory

c) Graphics card

d) Frame buffer

(ix) Whenever a particular color code is specified in an application program, the corresponding binary value is placed in?

a) Color look-up table

b) Directly in frame buffer

c) Color look-up table or Directly in frame buffer

d) Video lookup table

(x) The range that specifies the gray or grayscale levels is

a) The value range from -1 to 1

b) The value range from 0 to -1

c) The value range from 0 to 1

d) Any one of the above

(xi) With 3 bits per pixel, we can accommodate 8 gray levels. If we use 8 bits per pixel then what is the value of gray levels?

a) 18 gray levels

b) 128 gray levels

c) 256 gray levels

d) No color

(xii) Which of the following is a video editing tool that produces an animated text which can be inserted into video streams?

- a) Character generator
- b) Title generator
- c) Video generator
- d) Animation generator

(xiii) The distortion of information due to low-frequency sampling is known as

- a) Sampling
- b) Aliasing
- c) Inquiry function
- d) Anti-aliasing

(xiv) To avoid losing information from periodic objects we need

- a) Sampling frequency twice
- b) Nyquist sampling frequency
- c) Both Sampling frequency twice & Nyquist sampling frequency
- d) Neither sampling frequency twice nor nyquist sampling frequency

(xv) Raster curves of various widths can be displayed using

- a) Horizontal or vertical spans
- b) Horizontal spans
- c) Vertical spans
- d) Horizontal and vertical spans

(xvi) If the slope magnitude is 1, then circles, ellipse and other curves will appear

- a) Thick
- b) Thinnest
- c) Big
- d) Rough

(xvii) The pixel masks for implementing line-type options are also used in the following algorithm to generate dashed and dotted patterns.

- a) Raster line algorithm
- b) Raster scan algorithm
- c) Raster curve algorithm
- d) Random curve algorithm

(xviii) If we want to display constant-length dashes, then we need to do the following.

- a) We need to adjust the number of pixels
- b) We need to adjust the number of dots

plotted in each dash

- c) We must use line-type functions
- d) None of these

(xix) A particular set of attribute values for a primitive on each output device is chosen by specifying appropriate table index is known as?

- a) Individual attribute
- b) Unbundled attribute
- c) Bundled attribute
- d) None of these

(xx) The function of the pixel mask is

- a) To display dashes and inter dash spaces according to the slope
- b) To display curved attributes
- c) To display curved attributes
- d) None of these

(xxi) The width of the text or character can be set using the function

- a) setCharacterExpansionFactor (cw)
- b) SetCharacterExpansionFactor (cw)
- c) setCharacterFactor (cw)
- d) setCharacterExpansionfactor (cw)

(xxii) The purpose of flood gun in DVST is

- a) To store the picture pattern
- b) To slow down the flood electrons
- c) To enable color pixels
- d) To focus the electron beam

(xxiii) Identify the features of DVST from the following.

- a) Monochromatic, Flicker free, Low resolution
- b) Monochromatic, Flicker free
- c) Color screens, Refresh monitors, High resolution
- d) Expensive, Low resolution

(xxiv) Video devices with reduced volume, weight and power consumption are collectively known as

- a) Light weight monitors
- b) Flat-panel displays
- c) CRT
- d) Portable display

(xxv) Gray scale is used in

- a) A Monitor that have color capability
- b) A Monitor that have no color capability
- c) Random scan display
- d) Raster scan display

(xxvi) Two dimensional color model are

- a) RGB and CMKY
- b) RBG and CYMK
- c) RGB and CMYK
- d) None

(xxvii) CMYK model are used for

- a) Computer display
- b) Printing
- c) Painting
- d) None of these

(xxviii) The simplest output primitive is

- a) Straight line
- b) Straight line segment
- c) Point
- d) Circle

(xxix) A translation is applied to an object by

- a) Repositioning it along with straight line path
- b) Repositioning it along with circular path
- c) All of these
- d) None of these

(xxx) We translate a two-dimensional point by adding

- a) Translation distances
- b) Translation difference
- c) X and Y
- d) None of these

(xxxii) In 2D-translation, a point (x, y) can move to the new position (x', y') by using the equation

- a) $x' = x + dx$ and $y' = y + dy$
- b) $x' = x + dx$ and $y' = y + dy$
- c) $X' = x + dy$ and $Y' = y + dx$
- d) $X' = x - dx$ and $y' = y - dy$

(xxxii) The two-dimensional translation equation in the matrix form is

a) $P' = P + T$

b) $P' = P - T$

c) $P' = P * T$

d) $P' = p$

(xxxiii) _____ is a rigid body transformation that moves objects without deformation.

a) Rotation

b) Scaling

c) Translation

d) All of these

(xxxiv) Polygons are translated by adding _____ to the coordinate position of each vertex and the current attribute setting.

a) Straight line path

b) Translation vector

c) Differences

d) None of these

(xxxv) To change the position of a circle or ellipse we translate

a) Center coordinates

b) Center coordinates and redraw the figure in new location

c) Outline coordinates

d) All of these

(xxxvi) The basic geometric transformations are

a) Translation

b) Rotation

c) Scaling

d) All of these

(xxxvii) To generate a rotation, we must specify

a) Rotation angle ?

b) Distances dx and dy

c) Rotation distance

d) All of these

(xxxviii) Positive values for the rotation angle ? defines

a) Counterclockwise rotations about the end points

b) Counterclockwise translation about the pivot point

c) Counterclockwise rotations about the pivot point

d) Negative direction

(xxxix) The rotation axis that is perpendicular to the xy plane and passes through the pivot point is known as

- a) Rotation
- b) Translation
- c) Scaling
- d) Shearing

(xl) The original coordinates of the point in polar coordinates are

- a) $X'=r \cos (\theta +\alpha)$ and $Y'=r \cos (\theta +\alpha)$
- b) $X'=r \cos (\theta +\alpha)$ and $Y'=r \sin (\theta +\alpha)$
- c) $X'=r \cos (\theta -\alpha)$ and $Y'=r \cos (\theta -\alpha)$
- d) $X'=r \cos (\theta +\alpha)$ and $Y'=r \sin (\theta -\alpha)$

(xli) _____ is the rigid body transformation that moves object without deformation.

- a) Translation
- b) Scaling
- c) Rotation
- d) Shearing

(xlii) An ellipse can also be rotated about its center coordinates by rotating

- a) End points
- b) Major and minor axes
- c) All of these
- d) None of these

(xliii) The transformation that is used to alter the size of an object is

- a) Scaling
- b) Rotation
- c) Translation
- d) Reflection

(xliv) Scaling of a polygon is done by computing

- a) The product of (x, y) of each vertex
- b) (x, y) of end points
- c) Center coordinates
- d) None of these

(xlv) If the scaling factors values s_x and $s_y < 1$ then

- a) It reduces the size of object
- b) It increases the size of object
- c) It stunts the shape of an object
- d) None

(xlvi) If the scaling factors values s_x and s_y are assigned to unequal values then

- a) Uniform rotation is produced
- b) Uniform scaling is produced
- c) Differential scaling is produced
- d) Scaling cannot be done

(xlvi) The objects transformed using the equation $P'=S*P$ should be

- a) Scaled
- b) Repositioned
- c) Both Scaled & Repositioned
- d) None of these

(xlviii) We control the location of a scaled object by choosing the position is known as

- a) Pivot point
- b) Fixed point
- c) Differential scaling
- d) Uniform scaling

(xlix) If the value of $s_x=1$ and $s_y=1$ then

- a) Reduce the size of object
- b) Distort the picture
- c) Produce an enlargement
- d) No change in the size of an object

(l) The matrix representation for translation in homogeneous coordinates is

- a) $P'=T+P$
- b) $P'=S*P$
- c) $P'=R*P$
- d) $P'=T*P$

(li) The basic geometric structures that describes a scene on display is called

.....

- a) Attributes
- b) Output primitive
- c) Lines
- d) Curves

(lii) controls the basic display properties of output primitives.

- a) Attribute parameter
- b) setpixel
- c) getpixel
- d) None of these

(liii) The basic attributes of a straight line segment are

- a) Type
- b) Width

c) Color

d) All of these

(liv) A dotted line can be displayed by generating

a) Very short dashes with spacing equal to and greater than dash size

b) Very long dashes with spacing equal to or greater than dash size

c) Very short dashes with spacing equal to and greater than dash size

d) Dots

(lv) Which of the following is not a line-type?

a) Dashed line

b) Dark line

c) Dotted line

d) Only Dark line

(lvi) In an application program, to set line-type attributes the following statement is used.

a) SetLinetype(lt)

b) setLinetype(lt)

c) SETLINETYPE(lt)

d) SETLINE()

(lvii) The centre region of the screen and the window can be represented as _____

a) ,0000

b) 1111

c) ,0110

d) 1001

(lviii) If both codes are 0000, (bitwise OR of the codes yields 0000) line lies _____ the window.

a) completely outside

b) half inside half outside

c) completely inside

d) can't say anything

(lix) The 4-bit code of top-left region of the window is _____

a) 1001

b) 1100

c) ,0101

d) 1010

(lx) The logical _____ of the endpoint codes determines if the line is completely inside the window.

- a) AND
- b) OR
- c) NOT
- d) NOOR

(lxi) Sutherland-Hodgeman clipping is an example of _____ algorithm.

- a) line clipping
- b) polygon clipping
- c) text clipping
- d) curve clipping

(lxii) Only vertices from the subject polygon that are on the _____ are selected.

- a) lower half
- b) boundary
- c) opaque side
- d) visible side

(lxiii) We can correctly clip a polygon by processing the polygon boundary as a whole against each _____

- a) side wall
- b) top edge
- c) window edge
- d) bottom edge

(lxiv) How many edges of the clipping are/is present in 2D?

- a) 1
- b) 2
- c) 3
- d) 4

(lxv) If we used Left->Right->Up->Bottom, the final output will be the vertex list outputted by the _____ edge.

- a) left edge
- b) right edge
- c) top edge
- d) bottom edge

(lxvi) In a convex polygon, each of the interior angles is less than ____ degrees.

- a) 90
- b) 180

c) 360

d) 45

(lxvii) One of the drawbacks of Sutherland- Hodgeman algorithm is that it can't produce _____ areas.

a) connected

b) multiple

c) discrete

d) circular

(lxviii) Which one is not a type of basic fill styles?

a) Hollow

b) solid color

c) Pattern

d) Dark

(lxix) The process of filling an area with rectangular pattern is called

a) Tiling

b) Linear fill

c) Tint-fill

d) Soft-fill

(lxx) The fill color that is combined with the background color is known as

a) Soft fill

b) Tint fill

c) Both Soft fill & Tint fill

d) None