BRAINWARE UNIVERSITY

Term End Examination 2021 - 22
Programme – Bachelor of Computer Applications
Course Name – Computer Graphics
Course Code - BCAD502A
(Semester V)

Time : 1 Hr.15 Min.

Full Marks : 60

[The figure in the margin indicates full marks.]

Group-A
(Multiple Choice Type Question)

1 x 60=60

Choose the correct alternative from the following :

(1) 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 a nor b

(2) 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

(3) The window opened on the raster graphics screen in which the image will be displayed is called _____

a) World co-ordinate system

b) Screen co-ordinate system

c) World window

d) Interface window

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

a) Sampling frequency twice

b) Nyquist sampling frequency

c) Both a or b

d) Neither a nor b

(5) The sampling of object characteristic at a high resolution and displaying the result at a lower resolution is called?

a) Super-sampling

b) Post-filtering

c) Anti-aliasing

d) None of these

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

a) AND

b) OR

c) NOT

d) NOR

(7) Sutherland-Hodgeman clipping is an example of_____ algorithm.

a) line clipping

b) polygon clipping

c) text clipping

d) curve clipping

(8) How many polygons are used in this method?

a) 4

b) 3

c) 2

d) 1

(9) We can correctly clip a polygon by processing the polygon boundary as a whole agains t each _____

a) side wall

b) top edge

c) window edge

d) bottom edge

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

a) 1

b) 2

c) 3

d) 4

(11) To generate a rotation , we must specify

a) Rotation angle Θ

b) Distances dx and dy

c) Rotation distance

d) All of the mentioned

(12) Positive values for the rotation angle Θ defines

a) Counterclockwise rotations about the end po ints

b) Counterclockwise translation about the pivot point

c) Counterclockwise rotations about the pivot p oint

d) Negative direction

(13) The rotation axis that is perpendicular to the xy plane and passes through the pivot poin t is known as

a) Rotation

b) Translation

c) Scaling

d) Shearing

(14) If the scaling factors values sx and sy are assigned to the same value then

a) Uniform rotation is produced

b) Uniform scaling is produced

c) Scaling cannot be done

d) Scaling can be done or cannot be done

(15) If the scaling factors values sx and sy 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

(16) The value of it lies between

a) 1 and 2

b) 1 and 10

c) 0 and 1

d) 0and 3

(17) The surfaces that is blocked or hidden from view in a 3D scene are known as

a) Hidden surface

b) Frame buffer

c) c.Quad tree

d) None of these

(18) The problem of hidden surface are

a) Removal of hidden surface

b) Identification of hidden surface

c) Both a & b

d) None of these

(19) Why we need removal of hidden surface

a) for displaying realistic view

b) for determining the closest visibBoth a & b

c) Both a & b

d) None of these

(20) How many types of hidden surface algorithm are

a) 1

b) 2

c) 3

d) 4

(21) The algorithm of hidden surface are

  a) Object-space method

  b) image-space method

  c) Both a & b

  d) None of these

(22) The method which is based on the principle of comparing objects and parts of objects t o each other to find which are visible and which are hidden are called

  a) Object-space method

  b) image-space method

  c) Both a & b

  d) None of these.

(23) The method which is based on the principle of checking the visibility point at each pixe l position on the projection plane are called

  a) Object-space method

  b) image-space method

  c) Both a & b

  d) None of these

(24) The types of hidden surface removal algorithm are

  a) Depth comparison, Z-buffer, back-face rem oval

  b) Scan line algorithm, priority algorithm

  c) BSP method, area subdivision method

  d) All of these

(25) Which surface algorithm is based on perspective depth

  a) Depth comparison

  b) Z-buffer or depth-buffer algorithm

  c) subdivision method

  d) back-face removal

(26) In which year Z- buffer algorithm are described

  a) 1995

  b) 1974

  c) 1945

  d) 1981

(27) Z -buffer algorithm are

  a) Simplest algorithm

  b) Complex algorithm

  c) Largest algorithm

  d) None of these

(28) Which is a tree type of data structure in which every internal node has at most four chil dren

  a) Point quad tree

  b) Edge quad tree

  c) Quad tree

  d) None of these

(29) The scan line coherence algorithm was developed by

  a) Wylie

  b) Evans

  c) Cat mull

  d) Both a & b

(30) The array are used with scan line coherence algorithm are

  a) For intensity value

  b) For depth value

  c) Both a & b

  d) None of these

(31) Scan lines are used to scan from

  a) Top to bottom

  b) Bottom to top

  c) Both a & b

  d) None of these

(32) The painter algorithm were developed on

  a) 1972 by Newell

  b) 1972 by Evans

  c) 1974 by Cat mull

  d) None of these

(33) The painter algorithm are also called

  a) Depth sort algorithm

  b) Priority algorithm

  c) Both a & b

  d) None of these

(34) An ex of online animation tools are

  a) Macromedia flash

  b) GIF works

c) Both a & b

d) None of these

(35) To produce the motion in the image by placing the elements of the image on different l ocation ,which software are used

a) Macromedia flash

b) GIF works

c) Both a & b

d) None of these

(36) The name of a visible surface detection algorithm are

a) Back face detection

b) Back face removal

c) Ray tracing

d) None of these

(37) Which type of quad tree can be defined as an adaptation of a binary tree represented tw o dimensional point data

a) Point quad tree

b) Edge quad tree

c) Curves quad tree

d) Areas quad tree

(38) Which type of quad tree is specifically used to store lines rather than points

a) Point quad tree

b) Edge quad tree

c) Curves quad tree

d) Areas quad tree

(39) This algorithm uses the _____ equations for a line and solves four inequalities.

a) linear

b) quadratic

c) cubic

d) parametric

(40) The ideas of the Liang-Barsky algorithm are the same with which algorithm?

a) Cyrus Beck algorithm

b) Liam-Chopsky algorithm

c) Cohen Sutherland algorithm

d) All have the same

(41) Which of the co-ordinate represents Y co-ordinate in (6,8,9)?

a) 6

b) 8

c) 9

d) 0

(42) _____ and _____ are two types of the transformations.

a) quadratic, cubic

b) variable, affine

c) linear, quadratic

d) linear, affine

(43) Which of the following properties are preserved in affine transformation?

a) co-linearity

b) convexity

c) concavity

d) parallelism

(44) Which co-ordinates allow common vector operations such as translation, rotation, scali ng and perspective projection to be represented as a matrix by which the vector is multi plied?

a) vector co- ordinates

b) 3d co-ordinates

c) affine co-ordinates

d) homogenous co-ordinates

(45) _____ and _____ are two types of transformations.

a) quadratic, cubic

b) variable, affine

c) linear, quadratic

d) linear, affine

(46) The basic ray tracing algorithm provides

a) Transparency

b) Visible-surface detection974

c) Shadow effect, multiple light source illumina tion

d) All of these

(47) A process with the help of which images or picture can be produced in a more realistic way is called

a) Fractals

b) Quad-tree

c) Rendering

d) None of these

(48) What is the rectangle in the world defining the region that is to be displayed?

a) World co-ordinate system

b) Screen co-ordinate system

c) World window

d) Interface window

(49) Which type of clipping is used to clip character strings?

a) text clipping

b) line clipping

c) sentence clipping

d) word clipping

(50) For a point to be clipped, which of the following conditions must be satisfied by the point?

a) ywmin < y < ywmax

b) ywmin > y > ywmax

c) ywmin = y = ywmax

d) a. xwmin < x < xwmax

(51) Which of the following is NOT a type of clipping algorithm used on the raster system?

a) line clipping

b) point clipping

c) area clipping

d) solid clipping

(52) For a 2d transformation viewing, in how many ways a clipping algorithm can be applied?

a) 3

b) 2

c) 1

d) 5

(53) The process of elimination of parts of a scene outside a window or a viewport is called _____

a) cutting

b) plucking

c) clipping

d) editing

(54) Which of the following co-ordinates are NOT used in 2d viewing transformation?

a) modelling co-ordinates

b) viewing co-ordinates

c) vector co -ordinates

d) device co-ordinates

(55) Any convenient co-ordinate system or Cartesian co-ordinates which can be used to define the picture is called _____

a) spherical co-ordinates

b) vector co- ordinates

c) viewport co-ordinates

d) world co-ordinates

(56) Which of the following co-ordinates are NOT used in the 2d viewing transformation?

a) modelling co-ordinates

b) viewing co-ordinates

c) vector co-ordinates

d) device co-ordinates

(57) A view is selected by specifying a sub-area of the _____ picture area.

a) half

b) full

c) total

d) quarter

(58) The parametric form of 3D spline are

a) $X=f(t)$, $y=g(t),z=h(t)$

b) $X=a0$, $y=b0,z=c0$

c) a. $F(t)=0,g(t)=0,h(t)=0$

d) a. None of these

(59) The value of t lies between

a) 1 and 2

b) 1 and 10

c) 0 and 1

d) 0 and 3

(60) Which of the following represents a shearing?

a) $(x, y) \rightarrow (x+a, y+b)$

b) $(x, y) \rightarrow (ax, by)$

c) $(x, y) \rightarrow (x \cos(\theta)+y \sin(\theta), -x \sin(\theta)+y \cos(\theta))$

d) $(x, y) \rightarrow (x+ay, y+bx)$