Paper III June 2014

Beam-penetration and shadow-mask are the two basic techniques for producing color displays with a CRT. Which of the following is not true?

I. The beam-penetration is used with random scan monitors.
II. Shadow-mask is used in raster scan systems.
III. Beam-penetration method is better than shadow-mask method.
IV. Shadow-mask method is better than beam-penetration method.

(A) I and II
(B) II and III
(C) III only
(D) IV only

(C) III only

Basis	Beam Penetration	Shadow Mask
Colors produced	In this method, there is the production of only four colors i.e., red, green, yellow, orange.	In this method, there is the production of millions of colors.
Color dependency	As in this method only four colors are produced it is because of the speed of the electron gun.	As in this method millions of colors are produced because it depends upon the intensity value of the three available guns.
Number of electron guns used.	In this method, only one electron gun is used.	In this methods, three electron guns are used; i.e red, green and blue.
Picture quality	As we know in this different colors and shades are not possible. So, it's picture quality is poor.	As we know in this different colors and shades are possible. So, it's picture quality is quite good.
Realistic view	This method is not suitable for providing the realistic view.	This method is suitable for providing the realistic view.
Resolution	This method provides high resolution.	Whereas, this method does not able to provide high resolution.
Cost	It is cheaper than shadow mask method.	It is an expensive method.
Application	It is used in random scan system to display color.	It is used in raster scan system to display color.

Paper III June 2014

Line caps are used for adjusting the shape of the line ends to give them a better appearance. Various kinds of line caps used are

(A) Butt cap and sharp cap
(B) Butt cap and round cap
(C) Butt cap, sharp cap and round cap
(D) Butt cap, round cap and projecting square cap

(D) Butt cap, round cap and projecting square cap

Lines can have one of three cap styles: Butt, Round and Projecting Cap.
Depending on which Cap setting you choose, you get three noticeably different capped lines. Here are the options:

- Butt Cap: Chops off the stroke at the ends.
- Round Cap: Extends the stroke past the ends (or around the dash location) with semicircular ends. (The radius of each semicircle equals half the stroke weight.)
- Projecting Cap: Extends the stroke past the ends (or around the dash location) with squared ends. (The amount of each extension equals half the stroke weight.)

Unless otherwise specified, HTML5 Canvas lines are defaulted with the butt cap style.

Paper III June 2014

Given below are certain output primitives and their associated attributes. Match each primitive with its corresponding attributes :

List – I   List – II

a. Line   i. Type, Size, Color
b. Fill Area   ii. Color, Size, Font
c. Text   iii. Style, Color, Pattern
d. Marker   iv. Type, Width, Color

Codes :

  a   b   c   d
(A) i   ii   iii iv
(B) ii   i   iii iv
(C) iv iii ii   i
(D) iii i   iv ii

Paper III June 2014

Given below are certain output primitives and their associated attributes. Match each primitive with its corresponding attributes :

List – I	List – II
a. Line	i. Type, Size, Color
b. Fill Area	ii. Color, Size, Font
c. Text	iii. Style, Color, Pattern
d. Marker	iv. Type, Width, Color

Codes :

	a	b	c	d
(A)	i	ii	iii	iv
(B)	ii	i	iii	iv
(C)	iv	iii	ii	i
(D)	iii	i	iv	ii

Paper III June 2014

Which of the following color models are defined with three primary colors?

(A) RGB and HSV color models
(B) CMY and HSV color models
(C) HSV and HLS color models
(D) RGB and CMY color models

(D) RGB and CMY color models

RGB Models
- **This is an additive colour model. The colours are added to the black.**
- **3 main channels: Red, Green and Blue.**
- **Used in DIP, openCV and online logos.**

CMYK: CMYK colour model is widely used in printers. It stands for Cyan, Magenta, Yellow and Black (key). It is a subtractive colour model. 0 represents the primary colour and 1 represents the lightest colour. In this model, point (1, 1, 1) represents black, and (0,0,0) represents white. It is a subtractive model thus the value is subtracted from 1 to vary from least intense to a most intense colour value.

Paper III December 2014

Which of the following categories of languages do not refer to animation languages ?

(A) Graphical languages
(B) General-purpose languages
(C) Linear-list notations
(D) None of the above

(D) None of the above

all 3 mentioned languages refer to animation languages

4. Animation Languages:

Linear list notations

    42,53,B ROTATE "PALM",1,30

    Between frames 42 and 53, rotate the object called PALM about axis 1 by 30 degrees, determining the amount of rotation at each frame from table B.

General purpose languages

e.g.

   grasp my-cube

   cw 0.5

  grasp camera

   right panning

Graphical languages : describe animation in a visual way instead of using a scripts.

    e.g. P-curves (parametric representation of motion)

.A general purpose language, such as c,lips,pascal,or fortran, is often used to program the animation functions, Animation functions include a graphics editor, a key frame generator, an in-between generator,and standard graphics routines

Paper III December 2014

Match the following :

List – I   **List – II**

a. Tablet, Joystick   i. Continuous devices
b. Light Pen, Touch Screen   ii. Direct devices
c. Locator, Keyboard   iii. Logical devices
d. Data Globe, Sonic Pen   iv. 3D interaction devices

Codes :

   a b c d
(A) ii i iv iii
(B) i iv iii ii
(C) i ii iii iv
(D) iv iii ii i

Paper III December 2014

Match the following :

List – I   **List – II**

a. Tablet, Joystick   **i. Continuous devices**
b. Light Pen, Touch Screen   **ii. Direct devices**
c. Locator, Keyboard   **iii. Logical devices**
d. Data Globe, Sonic Pen   **iv. 3D interaction devices**

Codes :

```
     a    b    c    d
(A) ii    i    iv   iii
(B) i    iv    iii  ii
(C) i    ii    iii  iv
(D) iv   iii   ii   i
```

Paper III December 2014

A technique used to approximate halftones without reducing spatial resolution is known as ....

(A) Halftoning
(B) Dithering
(C) Error diffusion
(D) None of the above

(B) Dithering

Halftone is a graphic design technique in which image reproduced with the help og dots(various color).
A technique used to approximate halftones without reducing spatial resolution is known as Dithering.

Paper III December 2014

Match the following :

a. Cavalier Projection   i. The direction of projection is chosen so that there is no
                                    foreshortening of lines perpendicular to the xy plane.

b. Cabinet Projection   ii. The direction of projection is chosen so that lines perpendicular
to   the xy planes are foreshortened by half their lengths.

c. Isometric Projection   iii. The direction of projection makes equal angles with all of the
                                    principal axis.

d. Orthographic Projection   iv. Projections are characterized by the fact that the direction of
                                    projection is perpendicular to the view plane.

Codes :

```
      a    b    c    d
(A)  i    iii  iv   ii
(B)  ii   iii  i    iv
(C)  iv   ii   iii  i
(D)  i    ii   iii  iv
```

Paper III December 2014

Match the following :

a. Cavalier Projection   i. The direction of projection is chosen so that there is no
                                           foreshortening of lines perpendicular to the xy plane.

b. Cabinet Projection   ii. The direction of projection is chosen so that lines perpendicular
to   the xy planes are foreshortened by half their lengths.

c. Isometric Projection   iii. The direction of projection makes equal angles with all of the
                                           principal axis.

d. Orthographic Projection   iv. Projections are characterized by the fact that the direction of
                                           projection is perpendicular to the view plane.

Codes :
     a   b   c   d
(A) i   iii iv ii
(B) ii   iii i   iv
(C) iv   ii   iii i
(D) i   ii   iii iv

Paper III December 2015

Which of the following graphic primitives are considered as the basic building blocks of computer graphics ?

(a) Points
(b) Lines
(c) Polylines
(d) Polygons

Codes :

(A) (a) only
(B) (a) and (b)
(C) (a), (b) and (c)
(D) (a), (b), (c) and (d)

(B) (a) and (b)

The basic building blocks of computer graphics are points (coordinates) and lines.

Paper III December 2015

Which of the following is not a lossy compression technique ?

(A) JPEG
(B) MPEG
(C) FFT
(D) Arithmetic coding

(D) Arithmetic coding

Lossy compression technique are JPEG, MPEG, FFT but Arithmetic coding is a entropy coding used in lossless data compression.

Paper III December 2015

Blind image deconvolution is ....

(A) Combination of blur identification and image restoration
(B) Combination of segmentation and classification
(C) Combination of blur and non-blur image
(D) None of the above

(A) Combination of blur identification and image restoration

Blind image deconvolution is combination of blur identification and image restoration.
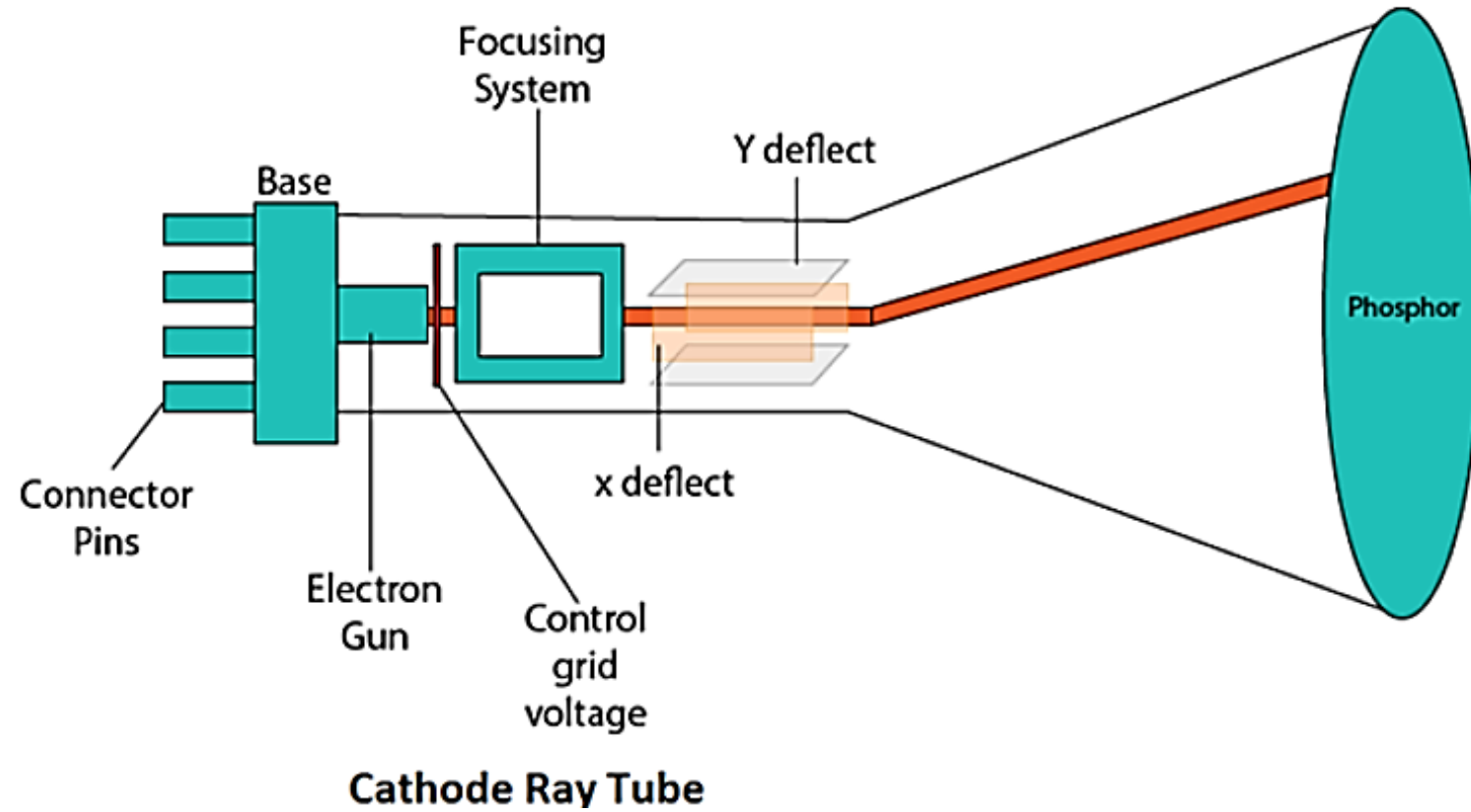
Paper III December 2015

Which of the following is/are the principle components of a memory-tube display ?

(a) Flooding gun
(b) Collector
(c) Phosphorus grains
(d) Ground

Codes :

(A) (a) and (b)
(B) (c) only
(C) (d) only
(D) All the above

(D) All the above

Cathode Ray Tube

Labels: Focusing System, Base, Y deflect, Phosphor, Connector Pins, Electron Gun, Control grid voltage, x deflect

Paper III December 2015

Which of the following is/are the components of a CRT ?

(a) Electron Gun
(b) Control Electrode
(c) Focusing Electrode
(d) Phosphor Coated Screen

Codes :

(A) (a) and (d)
(B) (a), (b) and (d)
(C) (a), (b), (c) and (d)
(D) (a), (c) and (d)

Paper III December 2015

Which of the following is/are the components of a CRT ?

(a) Electron Gun
(b) Control Electrode
(c) Focusing Electrode
(d) Phosphor Coated Screen

Codes :

(A) (a) and (d)
(B) (a), (b) and (d)
(C) (a), (b), (c) and (d)
(D) (a), (c) and (d)

Paper III July 2016

In perspective projection, if a line segment joining a point which lies in front of the viewer to a point in back of the viewer is projected to a broken line of infinite extent. This is known as ....

(A) View confusion
(B) Vanishing point
(C) Topological distortion
(D) Perspective foreshortening

(C) Topological distortion

- In perspective projection, if a line segment joining a point which lies in front of the viewer to a point in back of the viewer is projected to a broken line of infinite extent. This is known as topological distortion.
- In perspective projection (from 3D to 2D), objects behind the centre of projection are projected upside down and backward onto the view-plane. This is known as view confusion.
- Vanishing point: Where all parallel points appear to meet is called vanishing point.
- Perspective foreshortening: As we move from centre of projection size of object varies inversely with distance, this is known as perspective foreshortening.

Paper III July 2016

Let us consider that the original point is (x,y) and new transformed point is (x',y'). Further, Shx and Shy are shearing factors in x and y directions. If we perform the y-direction shear relative to x=xref then the transformed point is given by ....

(A) x' = x + Shx . (y - yref)   y' = y
(B) x' = x   y' = y . Shx
(C) x' = x   y' = Shy(x - xref) + y
(D) x' = Shy . y   y' = y . (x - xref)

(C) x' = x   y' = Shy(x - xref) + y

if we perform x direction shear with reference to y axis, then
x'= x + Shx.(y−yref);   y'=y
if we perform y direction shear with reference to x axis, then
x' = x;   y' = Shy(x−xref) + y

Paper III July 2016

Which of the following statement(s) is/are correct with reference to curve generation?

I. Hermite curves are generated using the concepts of interpolation.
II. Bezier curves are generated using the concepts of approximation.
III. The Bezier curves lies entirely within the convex hull of its control points.
IV. The degree of Bezier curve does not depend on the number of control points.

(A) I, II and IV only
(B) II and III only
(C) I and II only
(D) I, II and III only

(D) I, II and III only

Hermite curves are very easy to calculate but also very powerful. They are used to smoothly interpolate between key-points (like object movement in keyframe animation or camera control).

In general, a Bezier curve section can be fitted to any number of control points.
The number of control points to be approximated and their relative position determine the degree of the Bezier polynomial.

Another important property of any Bezier curve is that it lies within the convex hull (convex polygon boundary) of the control points. This follows from the properties of Bezier blending functions: They are all positive and their sum is always 1

Paper III   July 2016

Which of the following is used for the boundary representation of an image object?

(A) Quad Tree
(B) Projections
(C) Run length coding
(D) Chain codes

(D) Chain codes

Chain codes is used for the boundary representation of an image object.

Paper III August 2016 (Re-test)

In perspective projection (from 3D to 2D), objects behind the centre of projection are projected upside down and backward onto the view-plane. This is known as ....

(A) Topological distortion
(B) Vanishing point
(C) View confusion
(D) Perspective foreshortening

(C) View confusion

View Confusion: in perspective projection, objects behind the center of projection are projected upside down and backward on the view-plane.

Topological Distortion: A line segment joining a point lying in front of the viewer to a point in back of the viewer is projected to a broken line of infinite extent.

Perspective shortening: Size of object varies inversely with the distance from the center of projection.

Vanishing point: Points where set of parallel lines(not parallel to view plane) appear to meet.

Paper III August 2016 (Re-test)

Which of the following is not used in standard JPEG image compression?

(A) Huffman coding
(B) Runlength encoding
(C) Zig-zag scan
(D) K-L Transform

(D) K-L Transform

K-L transform is not used in JPEG image compression, It is used to transform the image.

Paper III August 2016 (Re-test)

Which of the following is a source coding technique?

(A) Huffman coding
(B) Arithmetic coding
(C) Run-length coding
(D) DPCM

(D) DPCM

DPCM is Differential pulse-code modulation which convert source analog into digital signal(i.e. source coding).

Huffman coding is a lossless data compression algorithm.

Arithmetic coding is a form of entropy encoding used in lossless data compression.

Run-length encoding (RLE) is a very simple form of lossless data compression in which runs of data are stored as a single data value and count, rather than as the original run.

Paper III August 2016 (Re-test)

If the histogram of an image is clustered towards origin on X-axis of a histogram plot then it indicates that the image is ....

(A) Dark
(B) Good contrast
(C) Bright
(D) Very low contrast

(A) Dark

The histogram of an image gives important information about the grayscale and contrast of the image. If the entire histogram of an image is centered towards the left end of the x-axis, then it implies a dark image. If the histogram is more inclined towards the right end, it signifies a white or bright image.

Paper III November 2017

Which of the following is not a component of Memory tube display?

(1) Flooding gun
(2) Collector
(3) Ground
(4) Liquid Crystal

(4) Liquid Crystal

The components of the Memory tube display are:

1. Flooding gun
2. Collector
3. Ground

Hence, Liquid crystal is not a component of the Memory tube display.

Paper III November 2017

Which of the following is not true in case of Oblique Projections?

(1) Parallel projection rays are not perpendicular to the viewing plane.
(2) Parallel lines in space appear parallel on the final projected image.
(3) Used exclusively for pictorial purposes rather than formal working drawings.
(4) Projectors are always perpendicular to the plane of projection.

(4) Projectors are always perpendicular to the plane of projection.

Statement I: TRUE Parallel projection rays are not perpendicular to the viewing plane. In an oblique projection, the parallel projection rays are not perpendicular to the viewing plane.

Statement II: TRUE Parallel lines in space appear parallel on the final projected image. In an oblique projection, Parallel lines in space appear parallel on the final projected image.

Statement III: TRUE Used exclusively for pictorial purposes rather than formal working drawings. In an oblique projection, Used exclusively for pictorial purposes rather than formal working drawings.

Statement IV: FALAE Because in orthographic projection, the projectors are parallel to each other and also perpendicular to the plane but in oblique projection, the projectors are inclined to the plane of projection and projectors are parallel to each other. ∴ Hence the correct answer is Projectors are always perpendicular to the plane of projection.

Paper III November 2017

With respect to CRT, the horizontal retrace is defined as :

(1) The path an electron beam takes when returning to the left side of the CRT.
(2) The path an electron beam takes when returning to the right side of the CRT.
(3) The technique of turning the electron beam off while retracing.
(4) The technique of turning the electron beam on/off while retracing.

(1) The path an electron beam takes when returning to the left side of the CRT.

Horizontal retracing is also known as vertical retracing. The beam returns to the left of the screen at the end of each scan line to show the next scan line.

Which of the following statements is/are True regarding the solution to the visibility problem in 3D graphics?

S1: The Painter's algorithm sorts polygons by depth and then paints (scan - converts) each Polygon on to the screen starting with the most nearest polygon.

S2: Backface Culling refers to eliminating geometry with backfacing normals.

Code:

(1) S1 only
(2) S2 only
(3) Both S1 and S2
(4) Neither S1 nor S2

(2) S2 only

S1 is false, painter algorithm sorts polygons by depth, and then paints the farthest polygon first.

S2 is true, backface curling don't render the curves, which are backface, and not visible. So, it enhances the rendering time.

In 3D Graphics, which of the following statements about perspective and parallel projection is/are true?

P: In a perspective projection, the farthest an object is from the centre of projection, the smaller it appears.

Q: Parallel projection is equivalent to a perspective projection where the viewer is standing infinitely far away.

R: Perspective projections do not preserve straight lines.

Choose the correct answer from the code given below:

Code:
(1) P and Q only   (2) P and R only
(3) Q and R only   (4) P, Q and R

(1) P and Q only

- In perspective projection, objects that are far away appear smaller, and objects that are near appear bigger.
- A perspective projection of an object is often considered more realistic than a parallel projection, since it more closely resembles human vision and photography
- Parallel projection is equivalent to a perspective projection where the viewer is standing infinitely far away Perspective projections preserve straight lines.

In 3D Graphics, which of the following statements is/are true?

P: Back-face culling is an example of an image-precision visible-surface determination procedure.

Q: Z- buffer is a 16-bit, 32-bit, or 64 bit field associated with each pixel in a frame buffer that can be used to determine the visible surfaces at each pixel.

Choose the correct answer from code given below:

Code:
(1) P only
(2) Q only
(3) P and Q
(4) Neither P nor Q

(2) Q only

Statement P: Back-face culling is an example of an image-precision visible-surface determination. This statement is incorrect. Back face culling is a technique used to eliminate invisible back facing polygons (which are not facing viewer) from further processing. Principle behind back face culling is that if a polygon on a 3D model is facing away from you, then it cannot be seen.

Statement Q: Z-Buffer is a 16-bit, 32-bit, or 64-bit field associated with each pixel in a frame buffer that can be used to determine the visible surface at each pixel. This statement is correct. Z buffer is a visible surface detection method. This is also known as depth buffer method. In this, depth values are stored for each position (x, y) during the surface processing. Each surface is processes separately in this. Depth values for pixel are compared and smallest z value determines the color or surface to be displayed. Z- buffer is a 16 – bit, 32 – bit or 64 – bit field associated with each pixel in a frame buffer that can be used to determine the visible surface at each pixel.

In the context of 3D computer graphics, which of the following statements is/are true ?

P: Orthographic transformations keep parallel lines parallel.
Q: Orthographic transformations are affine transformations.

Select the correct answer from the options given below:

(a) Both P and Q
(b) Neither P nor Q
(c) Only P
(d) Only Q

(a) Both P and Q

Orthographic projections are parallel projections. Each line that is originally parallel will be parallel after this transformation.

Orthographic projection (sometimes referred to as orthogonal projection, used to be called analemma[a]) is a means of representing three-dimensional objects in two dimensions. It is a form of parallel projection, in which all the projection lines are orthogonal to the projection plane,

In Euclidean geometry, an affine transformation, or an affinity (from the Latin, affinis, "connected with"), is a geometric transformation that preserves lines and parallelism (but not necessarily distances and angles).

The orthographic projection can be represented by a affine transformation.

Consider the following statements regarding 2D transforms in computer graphics:

$S1:$ $\begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}$ is a 2×2 matrix that reflects (mirrors) only $2D$ point about the X-axis.

$S2:$ A 2×2 matrix which mirrors any $2D$ point about the X-axis, is a rotation matrix.

What can you say about the statements S1 and S2 ?

(a) Both S1 and S2 are true
(b) Only S1 is true
(c) Only S2 is true
(d) Both S1 and S2 are false

Paper II June 2019

Consider the following statements regarding 2D transforms in computer graphics:

$S1 : \begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}$ is a 2×2 matrix that reflects (mirrors) only $2D$ point about the X-axis.

$S2 :$ A 2×2 matrix which mirrors any $2D$ point about the X-axis, is a rotation matrix.

What can you say about the statements S1 and S2 ?

(a) Both S1 and S2 are true
(b) Only S1 is true
(c) Only S2 is true
(d) Both S1 and S2 are false

In the context of 3D Computer graphics, which of the following statements is/are correct?

A. Under perspective projection, each set of parallel lines in the object do not stay parallel in the image (except those that are parallel to the viewplane to start with).

B. Applying a perspective transformation in the graphics pipeline to a vertex involves dividing by its 'z' coordinate.

C. Perspective transformation is a linear transformation.

Choose the correct answer from the options given below:

a) (A) and (B) only
b) (A) and (C) only
c) (B) and (C) only
d) (A), (B) and (C)

a) (A) and (B) only

Under perspective projection, each set of parallel lines in the object do not stay parallel in the image The lines converge to the middle of the projection at a single point. Points of intersection of converging lines with the screen plane generate the projected image on the screen. Hence statement I is correct.

Applying a perspective transformation in the graphics pipeline to a vertex involves dividing by its 'z' coordinate. Hence statement II is correct.

Perspective transformation is a non-linear transformation. Hence statement III is incorrect.

Concerning phong shading and Gouraud shading in a 3D scene, which of the following statements are true?

A. Gouraud shading requires more computation than phong shading.
B. Gouraud shading linearly interpolates the color of an interior pixel from the color at the vertices.
C. Phong shading interpolates over the normal vectors specified at the vertices.

Choose the correct answer from the options given below:

a) (A) and (B) only
b) (A) and (C) only
c) (B) and (C) only
d) (A), (B) and (C)

c) (B) and (C) only

Statement 1: FALSE: Gouraud shading requires less calculation and this greatly decreases the cost of shading steeply.

Statement 2: TRUE: Gouraud shading linearly interpolates the color of an interior pixel from the color at the vertices. The original paper makes it clear Gouraud shading is a linear interpolation of colour between vertices, specifically.

Statement 3:TRUE: Phong shading interpolates over the normal vectors specified at the vertices.

Which of the statements given below are correct?

The midpoint (or Bresenham) algorithm for rasterizing lines is optimized relative to DDA algorithm in that

A. it avoids round-off operations.
B. it is incremental.
C. it uses only integer arithmetic.
D. all straight lines can be displayed as straight (exact).

Choose the correct answer from the options given below:

a) A and B only
b) A and C only
c) A, B, and C only
d) A, B, C, and D

c) A, B, and C only

Characteristics Bresenhams line drawing algorithm:
- It avoids round-off operations.
- It is incremental.
- It uses only integer arithmetic.
- It avoids the generation of duplicate points.
- It can be implemented using hardware because it does not use multiplication and division.
- It is faster compared to DDA because it does not involve floating-point calculations like DDA Algorithm.

Paper II October 2022

Hidden surface removal problem with minimal 3D pipeline can be with

a) Painter's algorithm
b) Window Clipping algorithm
c) Brute force rasterization algorithm
d) Flood fill algorithm

a) **Painter's algorithm**

Algorithms used for hidden line surface detection
- ▪ **Back Face Removal Algorithm.**
- ▪ **Z-Buffer Algorithm.**
- ▪ **Painter Algorithm.**
- ▪ **Scan Line Algorithm.**
- ▪ **Subdivision Algorithm.**
- ▪ **Floating horizon Algorithm.**

Assertion A: A Raster scan device is a CRT graphic device and can use a television monitor for display

Reason R: In Raster scan display the picture is composed of a series of dots. These dots are traced out as a series of horizontal lines. Television works in a similar fashion

In the light of the above statements, choose the correct answer from the options given below.

1. Both A and R are true and R is the correct explanation of A
2. Both A and R are true but R is not the correct explanation of A
3. A is true but R is false
4. A is false but R is true

1. **Both A and R are true and R is the correct explanation of A**

A raster scan device is indeed a CRT (Cathode Ray Tube) graphic device, and it can use a television monitor for display. In raster scan display, the picture is composed of a series of dots or pixels that are traced out as a series of horizontal lines. This is similar to how a television works, where the screen is divided into horizontal lines that are progressively scanned to create the image.

Paper II June 2023

Southerland Hodgeman method is used on

1. Smooth curves
2. Line segment
3. Convex polygons
4. Concave polygons

3. Convex polygons

The Sutherland-Hodgman algorithm is used for clipping, particularly for clipping polygons against a window or a viewport. It is designed to clip convex polygons against arbitrary clipping windows.

Paper II June 2023

Match List-I with List-II. List I

	LIST I		LIST II
A.	Bezier curves	I.	3 dim objects that have translation rotational symmetry
B.	B-Splines	II.	Fractal geometry
C.	Sweep representations	III.	Bias and tension
D.	Natural objects	IV.	painting drawing CAD

Choose the correct answer from the options given below:

1. A-IV, B-II, C-III, D-I
2. A-IV, B-III, C-I, D-II
3. A-III, B.II, C-IV, D-I
4. A-II, B-IV, C-III, D-I

Paper II June 2023

Match List-I with List-II. List I

	LIST I		LIST II
A.	Bezier curves	I.	3 dim objects that have translation rotational symmetry
B.	B-Splines	II.	Fractal geometry
C.	Sweep representations	III.	Bias and tension
D.	Natural objects	IV.	painting drawing CAD

Choose the correct answer from the options given below:

1. A-IV, B-II, C-III, D-I
2. A-IV, B-III, C-I, D-II
3. A-III, B.II, C-IV, D-I
4. A-II, B-IV, C-III, D-I

Paper II June 2023

Which of the following transforms in 2 dimension is used to resize a 2-dimensional object?

1. Translation
2. Rotation
3. Scaling
4. Shearing

3. Scaling

Scaling is a transformation in computer graphics that is used to resize objects. It involves multiplying the coordinates of each point in the object by a scaling factor. This process changes the size of the object while preserving its shape and proportions.

Paper II December 2023

The Hue of a colour is related to its :

(1) Luminance
(2) Saturation
(3) Incandescence
(4) Wavelength

(4) Wavelength

Wavelength: This is the distance between two successive crests or troughs in a wave— in this context, a light wave. The wavelength of light determines its color, or hue.

Different colors of light have different wavelengths. For instance, violet light has a short wavelength, while red light has a long wavelength. So this is the term most closely connected with the hue of a color.

Match List - I with List - II.

List - I	List – II

(A) Bresenham   **(I) Hidden surface removal**
(B) Cohen-Sutherland   **(II) Line drawing algorithm**
(C) Sutherland-Hodgeman   **(III) Line clipping algorithm**
(D) Z-Buffer   **(IV) Polygon clipping algorithm**

Choose the correct answer from the options given below :

(1) (A)-(III), (B)-(II), (C)-(IV), (D)-(I)
(2) (A)-(II), (B)-(III), (C)-(I), (D)-(IV)
(3) (A)-(II), (B)-(III), (C)-(IV), (D)-(I)
(4) (A)-(II), (B)-(IV), (C)-(III), (D)-(I)

Paper II December 2023

Match List - I with List - II.

List - I   **List – II**

(A) Bresenham   (I) Hidden surface removal
(B) Cohen-Sutherland   (II) Line drawing algorithm
(C) Sutherland-Hodgeman   (III) Line clipping algorithm
(D) Z-Buffer   (IV) Polygon clipping algorithm

Choose the correct answer from the options given below :

(1) (A)-(III), (B)-(II), (C)-(IV), (D)-(I)
(2) (A)-(II), (B)-(III), (C)-(I), (D)-(IV)
(3) (A)-(II), (B)-(III), (C)-(IV), (D)-(I)
(4) (A)-(II), (B)-(IV), (C)-(III), (D)-(I)