

Computer Graphics

1. (UGCNET-DEC2016-III-13) Which of the following statement(s) is/are correct?
- (1) Persistence is the term used to describe the duration of phosphorescence.
 - (2) The control electrode is used to turn the electron beam on and off.
 - (3) The electron gun creates a source of electrons which are focussed into a narrow beam directed at the face of CRT.
 - (4) All of the above.
- Answer: 4
2. (UGCNET-DEC2016-III-14) A segment is any object described by GKS commands and data that start with CREATE SEGMENT and Terminates with CLOSE SEGMENT command. What functions can be performed on these segments?
- (1) Translation and Rotation
 - (2) Panning and Zooming
 - (3) Scaling and Shearing
 - (4) Translation, Rotation, Panning and Zooming

Answer: 4

3. (UGCNET-DEC2016-III-15) Match the following:
- | | |
|-----------------------|--|
| a. Glass | i. Contains liquid crystal and serves as a bonding surface for a conductive coating. |
| b. Conductive coating | ii. Acts as a conductor so that a voltage can be applied across the liquid crystal. |
| c. Liquid Crystal | iii. A substance which will polarize light when a voltage is applied to it. |
| d. Polarized film | iv. A transparent sheet that polarizes light. |

Codes:

- | | | | |
|--------|-----|-----|-----|
| a | b | c | d |
| (1) i | ii | iii | iv |
| (2) i | iii | ii | iv |
| (3) iv | iii | ii | i |
| (4) iv | ii | i | iii |

Answer: 1

4. (UGC net jan 2017 paper 3 q -17) Which of the following is/are side effects of scan conversion?
- a. Aliasing
 - b. Unequal intensity of diagonal lines
 - c. Over striking in photographic applications
 - d. Local or Global aliasing
- (1) a and b
 - (2) a, b and c
 - (3) a, c and d
 - (4) a, b, c and d

Answer: 4

5. (UGCNET-AUG2016-III-13) Consider a raster grid having XY-axes in positive X-direction and positive upward Y-direction with $X_{\max} = 10$, $X_{\min} = -5$, $Y_{\max} = 11$, and $Y_{\min} = 6$. What is the address of memory pixel with location (5, 4) in raster grid assuming base address 1 (one)?
- (A) 150 (B) 151
(C) 160 (D) 161

Answer: D

6. (UGCNET-AUG2016-III-14) Consider a N-bit plane frame buffer with W-bit wide lookup table with $W > N$. How many intensity levels are available at a time?
- (A) 2^N (B) 2^W
(C) 2^{N+W} (D) 2^{N-1}

Answer: A

7. Consider the Bresenham's line generation algorithm for a line with gradient greater than one, current point (x_i, y_i) and decision parameter, d_i . The next point to be plotted (x_{i+1}, y_{i+1}) and updated decision parameter, d_{i+1} , for $d_i < 0$ are given as

- (A) $x_{i+1} = x_i + 1$
 $y_{i+1} = y_i$
 $d_{i+1} = d_i + 2 dy$
- (B) $x_{i+1} = x_i$
 $y_{i+1} = y_i + 1$
 $d_{i+1} = d_i + 2 dx$
- (C) $x_{i+1} = x_i$
 $y_{i+1} = y_i + 1$
 $d_{i+1} = d_i + 2 (dx - dy)$
- (D) $x_{i+1} = x_i + 1$
 $y_{i+1} = y_i + 1$
 $d_{i+1} = d_i + 2 (dy - dx)$

Answer: B

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8. (UGCNET-AUG2016-III-16) A point P(2, 5) is rotated about a pivot point (1, 2) by 60° . What is the new transformed point P'?
- (A) (1, 4) (B) (-1, 4)
(C) (1, -4) (D) (-4, 1)

Answer: B

9. (UGCNET-June2016-III-14) A point P(5,1) is rotated by 90° about a pivot point (2,2). What is the coordinate of new transformed point P'?

- A. (3,5)
B. (5,3)
C. (2,4)
D. (1,5)

Answer A

10. (UGCNET-AUG2016-III-17) 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

Answer: C

11. The Liang-Barsky line clipping algorithm uses the parametric equation of a line from (x_1, y_1) to (x_2, y_2) along with its infinite extension which is given as :

$$x = x_1 + \Delta x \cdot u$$

$$y = y_1 + \Delta y \cdot u$$

Where $\Delta x = x_2 - x_1$, $\Delta y = y_2 - y_1$, and u is the parameter with $0 \leq u \leq 1$. A line AB with end points A(-1, 7) and B(11, 1) is to be clipped against a rectangular window with $x_{\min}=1$, $x_{\max}=9$, $y_{\min}=2$, and $y_{\max}=8$. The lower and upper bound values of the parameter u for the clipped line using Liang-Barsky algorithm is given as:

- (A) (0, 2/3) (B) (1/6, 5/6)
(C) (0, 1/3) (D) (0, 1)

Answer: B

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12. (UGC net july-2016-No: 13) Consider the Bresenham's circle generation algorithm for plotting a circle with centre (0,0) and radius 'r' units in first quadrant. If the current point is (x_i, y_i) and decision parameter is p_i then what will be the next point (x_{i+1}, y_{i+1}) and updated decision parameter p_{i+1} for $p_i \geq 0$

- (A) $x_{i+1} = x_i + 1$ $y_{i+1} = y_i$ $p_{i+1} = p_i + 4x_i + 6$
(B) $x_{i+1} = x_i + 1$ $y_{i+1} = y_i - 1$ $p_{i+1} = p_i + 4(x_i - y_i) + 10$
(C) $x_{i+1} = x_i$ $y_{i+1} = y_i - 1$ $p_{i+1} = p_i + 4(x_i - y_i) + 6$
(D) $x_{i+1} = x_i - 1$ $y_{i+1} = y_i$ $p_{i+1} = p_i + 4x_i + 10$

Answer: B

13. (UGCNET-June2016-III-14) A point P(5,1) is rotated by 90° about a pivot point (2,2). What is the coordinate of new transformed point P' ?

- (A) (3,5) (B) (5,3)
(C) (2,4) (D) (1,5)

Answer: A

14. (UGCNET-June2016-III-15) Let R be the rectangular window against which the lines are to be clipped using 2D Sutherland-Cohen line clipping algorithm. The rectangular window has lower left-hand corner at (-5,1) and upper right-hand corner at (3,7). Consider the following three lines for clipping with the given end point co-ordinates:

Line AB: A(-6,2) and B(-1,8)

Line CD: C(-1,5) and D(4,8)

Line EF: E(-2,3) and F(1,2)

Which of the following line(s) is/are candidate for clipping?

- (A) AB (B) CD

- (C) EF (D) AB and CD

Answer: D

15. (UGCNET-June2016-III-16) 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

Answer: C

16. (UGCNET-June2016-III-17) Let us consider that the original point is (x,y) and new transformed point is (x',y') . Further, Sh_x and Sh_y are shearing factors in x and y directions. If we perform the y-direction shear relative to $x=x_{ref}$ then the transformed point is given by

-
(A) $x' = x + Sh_x \cdot (y - y_{ref})$ $y' = y$
(B) $x' = x$ $y' = y \cdot Sh_x$
(C) $x' = x$ $y' = Sh_y(x - x_{ref}) + y$
(D) $x' = Sh_y \cdot y$ $y' = y \cdot (x - x_{ref})$

Answer: C

17. (UGCNET-June2016-III-18) 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

Answer: D

18. (UGCNET-Dec2015-III-33) 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)

Answer: B

19. 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

Answer: D

UGCNET-Dec2015-III-71

20. (UGCNET-Dec2015-III-71) Which of the following is/are the components of a CRT ?

- a. Electron Gun
- b. Control Electrode
- c. Focusing Electrode
- d. Phosphor Coated Screen

- A. a and d
- B. a, b and d
- C. a, b, c and d
- D. a, c and d

Answer C

21. (UGCNET-Dec2015-III-68) Which of the following steps is/are not required for analog to digital conversion ?

- (a) Sensing (b) Conversion (c) Amplification
- (d) Conditioning (e) Quantization

Codes :

- (A) (a) and (b) (B) (c) and (d)
- (C) (a), (b) and (e) (D) None of the above

Answer: D

22. (UGCNET-Dec2015-III-69) Which raster locations would be chosen by Bresenham's algorithm when scan converting a line from (1, 1) to (8, 5) ?

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Answer: C

23. (UGCNET-Dec2015-III-70) Consider a unit square centred at origin. The coordinates of the square are translated by a factor $(1/2, 1)$ and rotated by an angle of 90° . What shall be the coordinates of the new square ?

- (A) $(-1/2, 0), (-1/2, 1), (-3/2, 1), (-3/2, 0)$
- (B) $(-1/2, 0), (1/2, 1), (3/2, 1), (3/2, 0)$
- (C) $(-1/2, 0), (1/2, 0), (-3/2, 1), (-3/2, 0)$
- (D) $(-1/2, 0), (1/2, 1), (-3/2, 1), (-3/2, 0)$

Answer: A

24. (UGCNET-Dec2015-III-71) 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)

Answer: C

25. (UGCNET-June2015-III-13) Give the number of principal vanishing point(s) along with their direction for the standard perspective transformation:

- (A) Only one in the direction K
- (B) Two in the directions I and J
- (C) Three in the directions I, J and K
- (D) Only two in the directions J and K

Answer: A

26. Consider a triangle A(0, 0), B(1, 1), C(5, 2). The triangle has to be rotated by an angle of 45° about the point P(-1, -1). What shall be the coordinates of the new triangle?

- (A) $A'=(1, \sqrt{2}-1)$, $B'=(-1, 2\sqrt{2}-1)$, $C'=(3\sqrt{2}-1, (9/2)\sqrt{2}-1)$
- (B) $A'=(1, \sqrt{2}-1)$, $B'=(2\sqrt{2}-1, -1)$, $C'=(3\sqrt{2}-1, (9/2)\sqrt{2}-1)$
- (C) $A'=(-1, \sqrt{2}-1)$, $B'=(-1, 2\sqrt{2}-1)$, $C'=(3\sqrt{2}-1, (9/2)\sqrt{2}-1)$
- (D) $A'=(\sqrt{2}-1, -1)$, $B'=(-1, 2\sqrt{2}-1)$, $C'=(3\sqrt{2}-1, (9/2)\sqrt{2}-1)$

Answer: C

27. (UGCNET-June2015-III-15) The process of dividing an analog signal into a string of discrete outputs, each of constant amplitude, is called:

- (A) Strobing
- (B) Amplification
- (C) Conditioning
- (D) Quantization

Answer: D

28. (UGCNET-June2015-III-16) Which of the following is not a basic primitive of the Graphics Kernel System(GKS) ?

- (A) POLYLINE
- (B) POLYDRAW
- (C) FILL AREA
- (D) POLYMARKER

Answer: B

29. (UGCNET-June2015-III-17) Which of the following statements is/are incorrect ?

- (a) Mapping the co-ordinates of the points and lines that form the picture into the appropriate co-ordinates on the device or workstation is known as viewing transformation.
- (b) The right handed cartesian co-ordinates system in whose coordinates we describe the picture is known as world coordinate system.

(c) The co-ordinate system that corresponds to the device or workstation where the image is to be displayed is known as physical device co-ordinate system.

(d) Left-handed co-ordinate system in which the display area of the virtual display device corresponds to the unit(|x|) square whose lower left handed corner is at origin of the co-ordinate system, is known as normalized device co-ordinate system.

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

Answer: D

30. (UGCNET-June2015-III-18) Match the following

List-I

List-II

- (i) An electron gun designed to flood the entire screen with electrons.
(ii) Partly energised by flooding gun, stores the charge generated by the writing gun
(c) Ground (iii) Used to discharge the collector
(iv) Used in memory-tube display and similar to those used in standard CRT
(v) Used in memory-tube display and basically the same as the electron gun used in a conventional CRT.

Codes:

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

Answer: A

31. (UGCNET-Dec2014-III-13) 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

Answer: D

32. (UGCNET-Dec2014-III-14) 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

Answer: C

33. (UGCNET-Dec2014-III-15) 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

Answer: B

34. (UGCNET-June2015-III-14) Consider a triangle represented by A(0, 0), B(1, 1), C(5, 2). The triangle is rotated by 45 degrees about a point P(-1, -1). The co-ordinates of the new triangle obtained after rotation shall be

- (A) A'(-1, $\sqrt{2} - 1$), B'(-1, $2\sqrt{2} - 1$), C'($\frac{3}{2}\sqrt{2} - 1$, $\frac{9}{2}\sqrt{2} - 1$)
(B) A'($\sqrt{2} - 1$, -1), B'(2 $\sqrt{2} - 1$, -1), C'($\frac{3}{2}\sqrt{2} - 1$, $\frac{9}{2}\sqrt{2} - 1$)
(C) A'(-1, $\sqrt{2} - 1$), B'(2 $\sqrt{2} - 1$, -1), C'($\frac{3}{2}\sqrt{2} - 1$, $\frac{9}{2}\sqrt{2} - 1$)
(D) A'(-1, $\sqrt{2} - 1$), B'(2 $\sqrt{2} - 1$, -1), C'($\frac{9}{2}\sqrt{2} - 1$, $\frac{3}{2}\sqrt{2} - 1$)

Answer: A

35. (UGCNET-Dec2014-III-17) In Cyrus-Beck algorithm for line clipping the value of t parameter is computed by the relation :

(Here P1 and P2 are the two end points of the line, f is a point on the boundary, n1 is inner normal)

- (A) $\frac{(P_1 - f_i) \cdot n_i}{(P_2 - P_1) \cdot n_i}$ (B) $\frac{(f_i - P_1) \cdot n_i}{(P_2 - P_1) \cdot n_i}$
(C) $\frac{(P_2 - f_i) \cdot n_i}{(P_1 - P_2) \cdot n_i}$ (D) $\frac{(f_i - P_2) \cdot n_i}{(P_1 - P_2) \cdot n_i}$

Answer: B

36. (UGC NET Dec 2014 Ques no 65.) Given a simple image of size 10×10 whose histogram models the symbol probabilities and is given by

P ₁	P ₂	P ₃	P ₄
a	b	c	d

The first order estimate of image entropy is maximum when

- (A) a = 0, b = 0, c = 0, d = 1
(B) a = 1/2, b = 1/2, c = 0, d = 0
(C) a = 1/3, b = 1/3, c = 1/3, d = 0
(D) a = 1/4, b = 1/4, c = 1/4, d = 1/4

Answer: D

37. (UGCNET-June2014-III-01) 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

Answer: C

38. (UGCNET-June2014-III-02) 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

Answer: D

39. (UGCNET-June2014-III-03) 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

Answer: C

40. (UGCNET-June2014-III-04) Consider a window bounded by the lines : $x = 0$; $y = 0$; $x = 5$ and $y = 3$. The line segment joining $(-1, 0)$ and $(4, 5)$, if clipped against this window will connect the points

- (A) $(0, 1)$ and $(2, 3)$
- (B) $(0, 1)$ and $(3, 3)$
- (C) $(0, 1)$ and $(4, 3)$
- (D) $(0, 1)$ and $(3, 2)$

Answer: A

41. (UGCNET-June2014-III-05) 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

Answer: D

42. (UGCNET-Dec2013-III-43) What is the bit rate for transmitting uncompressed 800x600 pixel colour frames with 8 bits/pixel at 40 frames/second ?

- (A) 2.4 Mbps
- (B) 15.36 Mbps
- (C) 153.6 Mbps
- (D) 1536 Mbps

Answer: C

43. (UGCNET-Dec2013-III-66) What steps shall be required to rotate an object about the point P_1 (as shown in fig.1) and its placement such that what was at P_1 is now reduced and is at P_2 (as shown in fig.2).

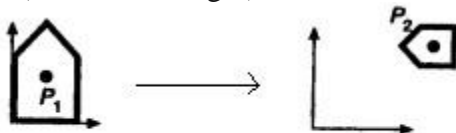


Fig. 1

Fig. 2

- I. Translate P_1 to origin
 - II. Scale as required
 - III. Rotate
 - IV. Translate to the final position P_2 .
- (A) I, II and III
 - (B) II, III and IV
 - (C) I, III and IV
 - (D) All of the above

Answer: Marks given to all

44. (UGCNET-Dec2013-III-65) The transformation matrix required for conversion of CMY colour model to RGB colour model is given as

$$(A) \begin{bmatrix} R \\ G \\ B \end{bmatrix} = \begin{bmatrix} C \\ M \\ Y \end{bmatrix} - \begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix}$$

$$(B) \begin{bmatrix} R \\ G \\ B \end{bmatrix} = \begin{bmatrix} C \\ M \\ Y \end{bmatrix} - \begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}$$

$$(C) \begin{bmatrix} R \\ G \\ B \end{bmatrix} = \begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix} - \begin{bmatrix} C \\ M \\ Y \end{bmatrix}$$

$$(D) \begin{bmatrix} R \\ G \\ B \end{bmatrix} = \begin{bmatrix} C \\ M \\ Y \end{bmatrix} - \begin{bmatrix} 0.5 \\ 0.5 \\ 0.5 \end{bmatrix}$$

Answer: C

45. (UGCNET-Dec2013-III-63) Given below are three basic rules:

- I. Squash and Stretch
 - II. Slow-in and Slow-out
 - III. To stage the action properly
- These rules are applied in case of
- (A) Rendering
 - (B) Morphing
 - (C) Animation
 - (D) All the above

Answer: C

46. (UGCNET-Dec2013-III-62) Which of the following statement(s) is(are) true?

- I. Two successive translations are additive.
 - II. Two successive rotations are additive.
 - III. Two successive scaling operations are multiplicative.
- (A) I and II
 - (B) I and III
 - (C) II and III
 - (D) All the above.

Answer: D

47. (UGCNET-Dec2013-III-61) Which of the following is not true with respect to a trackball and/or spaceball ?

- I. A trackball is a two dimensional positioning device while as a spaceball provides six degrees of freedom
- II. Unlike the trackball a spaceball does not actually move.

III. A trackball is a three dimensional positioning device while as a spaceball provides six degrees of freedom.

- (A) I & II
- (B) II & III
- (C) II only
- (D) III only

Answer: D

48. (UGCNET-Sep2013-III-64) Consider the following transformation matrix for rotation(clockwise) :

$$[T] = \begin{bmatrix} \cos\theta & \sin\theta & 0 & 0 \\ -\sin\theta & \cos\theta & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}$$

This matrix rotates an object by an angle θ about :

- (A) X-axis
- (B) Y-axis
- (C) Z-axis
- (D) All of the above

Answer: C

49. (UGCNET-Sep2013-III-61) Which of the following is/are fundamental method(s) of antialiasing?

- (i) Increase of sample rate.
 - (ii) Treating a pixel as a finite area rather than as a point.
 - (iii) Decrease of sample rate.
- (A) (i) and (ii)
 - (B) (ii) and (iii)
 - (C) (i) only
 - (D) (ii) only

Answer: A

50. (UGC net paper-iii-september-2013-No 62) The two color systems – the HSV and HLS are

- (A) Hue, Saturation, Value and Hue, Lightness, Saturation.
- (B) High, Standard, Value and High, Lightness, Saturation.
- (C) Highly, Saturated, Value and Highly, Lightened, Saturation.
- (D) Highly, Standard, Value and Hue, Lightness, Saturation.

Answer: A

51. (UGCNET-Sep2013-III-63) The parametric representation of the line segment between the position vectors $P_1(2, 3)$ and $P_2(5, 4)$ is given as

- (A) $x(t) = 2+7t, y(t) = 3+7t \quad 0 \leq t \leq \infty$
- (B) $x(t) = 2+10t, y(t) = 3+12t \quad 0 \leq t \leq 1$
- (C) $x(t) = 2+3t, y(t) = 3+t \quad 0 \leq t \leq 1$
- (D) $t(x, y) = 14t \quad 0 \leq t \leq 1$

Answer: C

52. (UGCNET-Sep2013-III-59) Which of the following graphics devices are known as active graphics devices?

- (i) Alphanumeric devices
 - (ii) Thumb wheels
 - (iii) Digitizers
 - (iv) Joystics
- (A) (i) and (ii)
(B) (iii) and (iv)
(C) (i), (ii) and (iii)
(D) (i), (ii), (iii) and (iv)

Answer: D

53. (UGCNET-Sep2013-III-60) A diametric projection is said to be trimetric projection when

- (i) two of the three foreshortening factors are equal and third is arbitrary.
 - (ii) all of the three foreshortening factors are equal.
 - (iii) all of the three foreshortening factors are arbitrary.
- Which of the above is true?

- (A) (i) and (ii)
(B) (ii) and (iii)
(C) (i) only
(D) (iii) only

Answer: C

54. (UGCNET-Dec2012-II-21) Which API is used to draw a circle ?

- (A) Circle() (B) Ellipse()
(C) Round Rect() (D) Pie()

Answer: B

55. (UGCNET-june2009-ii-47) A clustering technique that permits a convenient graphical display is:

- (A) partition based clustering
- (B) probabilistic model based clustering
- (C) hierarchical clustering
- (D) agglomerative clustering

Answer: C

56. (UGCNET-June2013-III-29) In homogenous coordinate system (x, y, z) the points with $z = 0$ are called

- (A) Cartesian points
- (B) Parallel points
- (C) Origin point
- (D) Point at infinity

Answer: D

57. (UGCNET-June2013-III-30) If 40 black lines interleaved with 40 white lines can be distinguished across one inch, the resolution is

- (A) 40 line-pairs per inch
- (B) 80 line-pairs per inch
- (C) 1600 lines per inch
- (D) 40 lines per inch

Answer: A

58. (UGCNET-June2013-III-26) An actor in an animation is a small program invoked per frame to determine the characteristics of some object in the animation.

- (A) once
- (B) twice
- (C) 30 times
- (D) 60 times

Answer: A

33. (UGCNET-Dec2012-III-33) The Z-buffer algorithm is used for Hidden surface removal of objects. The maximum number of objects that can be handled by this algorithm shall

- (A) Depend on the application
- (B) be arbitrary no. of objects
- (C) Depend on the memory availability
- (D) Depend on the processor

Answer: B

59. (UGCNET-June2012-III-75) Halftoning is defined as

- (A) a technique to obtain increased visual resolution using multiple intensity levels.
- (B) a technique for using minimum number of intensity levels to obtain increased visual resolution.
- (C) a technique to obtain increased visual resolution using maximum number of intensity levels.
- (D) a technique for using appropriate number intensity levels to obtain increased visual resolution.

Answer: B

60. (UGCNET-June2012-III-63) If a and b are the end points of a line, then which one of the following is true?

- (A) If both end points are left, right, above or below the window, the line is invisible.
- (B) If both end points are left, right, above or below the window, the line is completely visible.
- (C) If both end points are left, right, above or below the window, the line is trivially visible.
- (D) If both end points are left, right, above or below the window, the line is trivially invisible.

Answer: D

61. (UGCNET-June2012-III-47) The colour of an object is largely determined by its diffuse reflection coefficient. If $K_d = (0.8, 0.4, 0)$, then what shall be the colour of the object, if the light used is blue and magenta?

- (A) White and Red
- (B) Red and Blue

(C) Black and White

(D) Black and Red

Answer: D

62. (UGCNET-Dec2014-III-18) 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

Answer: D