

**Techno India Batanagar**  
**Computer Science and Engineering**

**Model Questions**

**Subject Name:** Computer Graphics

**Subject Code:** 604 B

**Multiple Choice Questions**

1. In Bresenham's circle generation algorithm, if (x,y) is the current pixel position then the y value of the next pixel position is  
a) Y or y+1      b) y alone      c) y+1 or y-1      d) y or y-1
2. Tablet is  
a) logical interactive device      b) data generation device  
b) c) physical interactive device      d) none of these
3. Bresenham's Algorithm seeks to select the optimum raster locations that represent a  
a) Straight line      b) curve line      c) polygon      d) none of these
4. According to simple Area Arid aliasing, pixel is considered as  
a) a mathematical point      b) a finite area      c) an infinite area      d) none of these
5. The reflection matrix of a point P(x,y) about the straight line  $y = -x$  is  
a)  $\begin{pmatrix} -1 & 0 \\ 0 & -1 \end{pmatrix}$       b)  $\begin{pmatrix} 0 & -1 \\ -1 & 0 \end{pmatrix}$       c)  $\begin{pmatrix} -1 & 0 \\ -1 & 0 \end{pmatrix}$       d)  $\begin{pmatrix} -1 & 0 \\ 0 & -1 \end{pmatrix}$
6. The DDA algorithm is a faster method for calculating pixel positions than direct use of line equation using  $y = mx + c$ , because  
a) it eliminates floating point addition      b) it eliminates floating point multiplication  
c) it eliminates rounding operation that drift away from true line path      d) none of these
7. In Bresenham's circle algorithm, if points are generated from  $90^\circ$  to  $45^\circ$  and (x,y) are the Coordinate of last scan converted pixel then the next pixel coordinate is  
a) (x+1,y+1)or(x-1,y-1)      b) (x+1,y)or(x,y+1)  
c) (x,y+1)or(x+1,y-1)      d) (x+1,y)or(x+1,y-1)
8. Aliasing means  
a) Rendering effect      b) Shading effect      c) Staircase effect      d) Cueing effect

9. The technique of using a minimum number of intensity levels to obtain increased visual resolution is  
 a) Dithering    b) Half toning    c) Depth-Cueing    d) Rendering
10. A raster colour display processor supports a resolution of  $1024 * 800$  with up to 16 million colours simultaneously displayable. What will be the approximate size (in bytes) of the frame buffer used in the display processor?  
 a)  $1.2 * 10^6$     b)  $2.4 * 10^6$     c)  $16 * 10^6$     d)  $10^5$
11. If blue is represented as 001 the yellow is represented as  
 a) 001    b) 010    c) 101    d) 110
12. A 24-bit plane colour frame buffer with three 10-bit wide colour look up tables can have .....number of colours.  
 a)  $2^{24}$     b)  $2^8$     c)  $2^{48}$     d)  $2^{30}$
13. \_\_\_\_\_ acts as anode in CRT.  
 a) The phosphorous coating    b) The glass panel    c) The deflectors    d) None of these
14. Slope of the line joining the points (1, 2) and (3, 4) is  
 a) 0    b) 1    c) 2    d) 3
15. In bresenham's circle generation algorithms. If (x, y) is the current pixel position then the x-value of the next pixel position is  
 A) x    b) x - 1    c) x + 1    d) x + 2
16. Run length coding is used for  
 a) Image smoothening    b) Image compression  
 c) Image colouring.    d) Image dithering
17. Which device is used to grasp a 'virtual object'?  
 a) Space ball    b) Data glove    c) Digitizer    d) Touch panels
18. Resolution can be defined by  
 a) Number of component    b) Number of small square boxes  
 c) Number of pixels    d) Number of pixels per unit length
19. The video memory that is used to hold the image displayed on screen is known as  
 a) Display processor    b) LUT    c) Frame buffer    d) Display file
20. The maximum number of dots that can be displayed without overlap on CRT is referred to as  
 a) Refresh rate    b) Interlacing    c) Screen resolution    d) None of these
21. Raster means  
 a) Series of parallel lines    b) Series of parallel blocks  
 c) Series of parallel medium    d) Series of parallel sweeps
22. Physical Aspect Ratio is termed as  
 a) Ratio of width of the frame to its height    b) Ratio of width of pixel to its height  
 c) Ratio of width of block to its height    d) all of these
23. Flood fill algorithm cannot be applied if  
 a) More than one boundary colour    b) More than one interior colour



37. Clipping algorithms are
- a) Two or three dimensional
  - b) Two dimensional
  - c) Three dimensional
  - d) None of these
38. When the angle between the projectors and the plane of projection is not equal to  $90^\circ$  then the projection is
- a) Orthographic
  - b) Isometric
  - c) Perspective
  - d) Oblique
39. Sutherland-Hodgeman algorithm is used for
- a) Line clipping
  - b) Point clipping
  - c) Polygon clipping
  - d) Hybrid clipping
40. Clipping algorithms are
- a) Two or three dimensional
  - b) two dimensional
  - c) Remain parallel
  - d) become circular arcs
41. after arbitrary 2D transformation, a pair of parallel lines
- a) Become intersecting
  - b) Become coincident
  - c) Remain parallel
  - d) Become circular arcs
42. The matrix representation of reflection about  $y = -x$  is
- |   |   |  |  |
|---|---|--|--|
| a) $\begin{bmatrix} 1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ | b) $\begin{bmatrix} -1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ | c) $\begin{bmatrix} 0 & 1 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ | d) $\begin{bmatrix} 0 & -1 & 0 \\ -1 & 0 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ |
|---|---|--|--|
43. In view-port clipping of 3D viewing, the region code contains \_\_\_\_\_ number of bits.
- a) 6
  - b) 4
  - c) 5
  - d) 7
44. If  $(x, y, h)$ ,  $h \neq 0$ , is a point in the homogeneous co-ordinate system then its equivalent in the two dimension system is
- a)  $(x, y, 1)$
  - b)  $(x, y, 0)$
  - c)  $(x/h, y/h)$
  - d)  $(x, y, x+y)$
45. When projection lines are perpendicular to the view plane then such type of projection is called
- a) Parallel
  - b) Perspective
  - c) Orthographic
  - d) Oblique
46. The orthographic projections have the projectors where
- a) The direction of these projectors is parallel to the view plane
  - b) The direction of these projectors is perpendicular to the image plane
  - c) The direction of these projectors is perpendicular to the view plane
  - d) The direction of these projectors is parallel to the image plane
47. The viewing transformation is formed by
- a) Translations
  - b) Translation and scaling
  - c) Translation, scaling and reflection
  - d) Translation, scaling and rotation
48. The slope of the Bezier curve at start of the curve of is controlled by
- a) First control point
  - b) First two control points
  - c) First three control points
  - d) All four control points
49. Two curves are said to be connected at a point with first order continuity if
- a) Both curves simply meet at that point
  - b) The tangents to both the curves at that point is equal



64. The format for storing digital audio in multimedia applications is  
 a)JPEG      b)TIFF      c)WAV      d)BMP
65. Lossy image simplification is based on \_\_\_\_\_ operation.  
 a ) DCT      b)CCI      c)ISO      d)DMS
66. The animator creates the illusion of smooth motion by  
 a)onion skinning      b)masking      c)tweening      d)color cycling
67. Entropy encoding is  
 a) run length encoding      b)lossless encoding  
 c)lossy encoding      d)both(b)&(c)
68. Intensity ratio of Red(R) Green(G)and Blue(B) in Gray axis is  
 a)1:2:1      b)1:1:1      c)2:1:1      d)1:1:2
69. DAC means  
 a) direct access coding      b)digitally activated compression  
 c) direct area clipping      d)digital to analog converter
70. If  $X_L, X_R, Y_B, Y_T$  represent the four parameter of x-left , x-right , y-bottom and y-top of the clipping window and  $(x,y)$  is a point inside the window then  
 a)  $X_L \leq x \leq X_R$  and  $Y_B \leq y \leq Y_T$       b)  $X_L \leq x \leq X_R$  and  $Y_B \geq y \geq Y_T$   
 c)  $X_L \geq x \geq X_R$  and  $Y_B \leq y \leq Y_T$       d)  $X_L \geq x \geq X_R$  and  $Y_B \geq y \geq Y_T$
71. A line with end point codes as 0000 and 0000 is  
 a)partially invisible      b)completely visible  
 c)trivially visible      d)completely invisible
- 72.A projection in which all three foreshortening factors are kept equal is called as  
 a) Isometric projection      b) diametric projection  
 c) Trimetric projection      d) none of these
- 73.Using odd parity rule ,if the number of polygon edges crossed by a line , from a point is odd ,then  
 a) P is an exterior point      b)P is interior point  
 c)P is on the edge point      d)odd parity-rule along is not sufficient to judge
74. if  $S_x$  and  $S_y$  are scaling factors applied in X and Y directions respectively , on p  $(x,y)$ ,the output point co-ordinates after applying scaling operation is  
 a)  $x_1=1/x.S_x, y_1=y.S_y$       b) $x_1=x+S_x, y_1=y+S_y$   
 c)  $x_1=x.S_x, y_1=1/y.S_y$       d) $x_1=x.S_x, y_1=y.S_y$
75. Perspective projection is characterized by the  
 a) View plane alone      b) direction of projection and the view plane  
 c) Centre of projection and the view plane      d) centre of projection alone
76. Achromatic light is  
 a) Quantity of light      b) Quantity of colour  
 c) Quantity of darkness      d) Quantity of shading
77. The memory area which holds a set intensity values for all the screen points is  
 a) Frame buffer      b) refresh RAM  
 c) Video cache      d) RAM

78. Bresenham's algorithm seeks to the optimum raster location that represent a  
 a) straight line    b) curve line    c) polygon    d) none of these
79. According to Simple area anti-aliasing ,pixel is considered as  
 a) a mathematical point    b) a finite area  
 c) an infinite area    d) none of these
80. Bresenham's line drawing is superior then DDA because  
 a) It does not require floating point arithmetic    b) No round -up is required  
 c) Both (a) & (b)    d) it is easily computable
81. Minimum memory required for frame buffer when resolution is 800×600 and bit/pixel is 8.  
 a) 512 kb    b) 1 Mb    c) 2 Mb    d) 256 kb
82. Disadvantage of DDA is  
 a) Round of error    b) Subtraction error    c) Addition error    d) (a),(b)
83. The method super sampling is associated with  
 a) Boundary fills algorithm    b) Ground shading  
 c) Antialiasing    d) none of these
84. Refreshing on raster scan displays is carried out at the rate of  
 a) 60 to 80 frames per sec    b) 40 to 60 frames per sec  
 c) 30 to 60 frames per sec    d) none of these
85. The maximum number of points that can be displayed without overlap on CRT is referred to as  
 a) Resolution    b) Persistence    c) Attenuation    d) None of these
86. Size of a 640×480 image at 240 pixels per inch is  
 a) 2 by 2 inches    b) 2\*2/3 by 2 inches    c) 3 by 2 inches    d) none of these
87. What do you call the path the electron beam taken at the end of each refresh cycle?  
 a) Horizontal retraces    b) vertical retrace  
 c) Diagonal retrace    d) none of these
88. Which is not image file format?  
 a) bmp    b) jpg    c) tiff    d) Both(a)&(b)
89. Raster scan display means that the screen is scanned  
 a) Top to bottom and right to left    b) left to right & top to bottom  
 c) Bottom to top and left to right    d) bottom to top and right to left
90. Dragging in computer graphics can be achieved through which of the following transformation?  
 a) translation    b) rotation    c) scaling    d) mirror reflection
91. GIF supports  
 a) 256 colours    b) 572 colours    c) 1024 colours    d) 16 million colours
92. IF the resolution of a number is 320×200 then the aspect ratio is  
 a) 8:5    b) 3:13    c) 13:4    d) all of these
93. In the Bresenham's algorithm, error term initialised to  
 a) 0    b) 1    c) -1/2    d) none of these

94. In the generation of circle by Bresenham's algorithm, it is simple to generate
- All octants
  - one octants first and other by successive reflection
  - one octants first and other by successive rotation
  - one octants first and other by successive translation
95. Mid -point line and circle drawing algorithm use the sign of
- Distance parameter
  - decision parameter
  - Describe point
  - both a&b
96. What will be the value of initial decision parameter if we intend to draw a line between A (3, 6) and B (4, 9) using Bresenham's algorithm?
- 6
  - 5
  - 3
  - none of these
97. The total number of pixel put 'ON' for the line starting at (1, 1) and ending at (12, 7) would be
- 7
  - 11
  - 12
  - more than 12
98. Which one is not the neighbour of a pixel (x,y) in 4 -connected method ?
- (x,y+1)
  - (x+1,y+1)
  - (x,y-1)
  - none of these
99. Parametric equation of straight line (where  $0 \leq t \leq 1$ ) is
- $P(t) = P_0 + (P_1 - P_0)t$
  - $P(t) = P_0 + (P_1 + P_0)t$
  - $P(t) = P_0 - (P_1 - P_0)t$
  - $P(t) = P_0 - (P_1 + P_0)t$
100. How many matrices are required to rotate an object about a point (x, y)?
- 2
  - 3
  - 4
  - 5
101. In 2D graphics, the transformation  $\begin{bmatrix} 0 & 1 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & 1 \end{bmatrix}$  results in
- Reflection about line  $y=x$
  - reflection about line  $y=-x$
  - Reflection about line  $y=0$
  - searching about x-axis
102. If direction of rotation is Z axis, then direction of position of positive rotation is
- Y to X
  - Z to X
  - X to Y
  - Y to X
103. How many matrices are required to reflect an object through a line  $y = mx + c$ ?
- 2
  - 3
  - 4
  - 5
104. What is perspective anomaly?
- Oblique
  - vanishing point
  - cavalier
  - none of these
105. In 2D graphics, if  $S_1$  &  $S_2$  are two scaling matrix and  $T_1$  &  $T_2$  are two translation matrices then
- $S_1 S_2 = S_2 S_1$
  - $S_1 T_1 = S_2 T_2$
  - $T_2 S_2 = T_1 S_1$
  - $S_1 T_1 = T_2 S_1$
106. Reflection of an object is same as rotation with angle
- 45
  - $90^\circ$
  - $180^\circ$
  - $360^\circ$
107. What are the conditions for point clipping?
- $X_{\max} > X > X_{\min}$  and  $Y_{\max} > Y > Y_{\min}$
  - $X_{\min} \leq X \leq X_{\max}$  and  $Y_{\min} \leq Y \leq Y_{\max}$
  - $X_{\min} = X = X_{\max}$  and  $Y_{\min} = Y = Y_{\max}$
  - none of these



108. GKS is
- a) GEOMETRIC KERNAL SYSTEM
  - b) GRAPGICAL KARNEL SIFTWARE
  - c) GRAPHICAL KARNEL SYSTEM
  - d) GEOMETRIC KERNEL SOFTWARE
109. The format of storing digital audio in multimedia application is
- a)JPEG
  - b)TIFF
  - c)WAV
  - d)BMP
110. MIDI is
- a) Musical instrument digital interface
  - b) Multiple instrument digital interface
  - c) Musical interchangeable digital interface
  - d) Multiple interchangeable digital interface

## Answers

1.	C	48.	B	95.	D
2.	C	49.	A	96.	B
3.	A	50.	D	97.	C
4.	B	51.	B	98.	D
5.	B	52.	D	99.	A
6.	B	53.	C	100.	B
7.	D	54.	D	101.	A
8.	C	55.	B	102.	B
9.	B	56.	B	103.	D
10.	B	57.	C	104.	B
11.	D	58.	B	105.	A
12.	A	59.	A	106.	C
13.	D	60.	A	107.	B
14.	B	61.	D	108.	C
15.	C	62.	A	109.	C
16.	B	63.	C	110.	A
17.	B	64.	C		
18.	D	65.	A		
19.	C	66.	A		
20.	C	67.	B		
21.	D	68.	B		
22.	A	69.	D		
23.	B	70.	A		
24.	C	71.	B		
25.	B	72.	A		
26.	C	73.	B		
27.	C	74.	D		
28.	B	75.	C		
29.	B	76.	A		
30.	C	77.	A		
31.	D	78.	A		
32.	A	79.	A		
33.	B	80.	C		
34.	C	81.	A		
35.	C	82.	A		
36.	A	83.	C		
37.	A	84.	A		
38.	D	85.	A		
39.	C	86.	B		
40.	A	87.	B		
41.	C	88.	C		
42.	D	89.	B		
43.	A	90.	A		
44.	A	91.	A		
45.	C	92.	A		
46.	B	93.	C		
47.	D	94.	B		