**Objective question bank**

**Computer Graphics**

**UNIT I**

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Q1) A pixel of black-white image or graphic object take space in memory

A) 1 bit B) 2 bits C) 1 byte D) 1 nibble

Q2) The process of representing continuous graphic objects as a collection of discrete pixels is called

A) Animation B) Rasterization C) Scan Conversion

D) Sampling

Q3) A pixel of gray-scale image or graphic object take space in memory

A) 1 bit B) 1 byte C) 1 nibble D) 3 bytes

Q4) The process of determining the suitable pixels for representing image or graphic object is called

A) Animation B) Rasterization C) Scan-Conversion

D) Quantization

Q5) The resolution of an image is

1. Number of pixels per unit area
2. Number of pixels per unit length in horizontal
3. Number of pixels per unit length in vertical
4. None of these

Q6) The size of a 640\*480 image at 240 pixels per inch is

1. 8/3\*2 inches
2. 2\*2 inches
3. 3\*2 inches
4. none of these

Q7) The resolution of 2\*2 inch image that has 512\*512 pixels is

1. 256\*256 pixels per inch
2. 256 pixels per inch
3. 128\*128 pixels per inch
4. 128 pixels per inch

Q8) If an image has a height of 2 inches and aspect ratio of 1.5 then its width is

1. 3 inches
2. 0.75 inches
3. 0.75\*0.75 inches
4. 1.5\*1.5 inches

Q9) If we want to resize a 1024\*746 image to one that is 640 pixels wide with the same aspect ratio, the height of resized image would be

1. 768
2. 512
3. 480
4. 1024

Q10 The path the electron beam takes at the end of each refresh cycle is called:

1. horizontal retrace
2. vertical retrace
3. diagonal retrace
4. left to right retrace

Q11 The path the electron beam takes when returning to the left side of the CRT screen is called

1. horizontal retrace
2. vertical retrace
3. diagonal retrace
4. top to bottom retrace

Q12 The best line drawing algorithm among all possible line drawing algorithm is

1. DDA
2. Algorithm which uses direct equation of line
3. Bresenham’s algorithm
4. None of them

Q13 The value of initial decision parameter in bresenham’s line drawing algorithm for │m│<1 is:

1. 2∆y - ∆x
2. 2∆y + ∆x
3. -2∆y + ∆x
4. -2∆y - ∆x

Q14 The best circle drawing algorithm among all possible circle drawing algorithm is:

1. algorithm uses direct equation of circle
2. algorithm uses polar coordinate form
3. bresenham’s circle drawing algorithm
4. mid point circle drawing algorithm

Q15 The value of initial decision parameter in mid point circle drawing algorithm is:

1. 3-2r
2. 5/4-r
3. 1-2r
4. 3-r

Q16 Points P1(3.2 ,7.8) and P2(3.7,7.1) are both represented by pixel

1. (3,8)
2. (4,7)
3. (3,7)
4. (4,8)

Q17 Pixel phasing is an anti-aliasing technique based on

1. hardware
2. software
3. both hardware and software
4. none of these

Q18 Aspect ratio is generally defined as the ratio of the

1. Vertical to the horizontal points
2. Horizontal to vertical points
3. Vertical to (horizontal+ vertical) points
4. Either (a) or (b) ,depending on the convention followed

Q19 The anti-aliasing technique which allows shift of ¼, ½ and ¾ of a pixel diameter enabling a closer path of a line is

1. pixel phasing
2. filtering
3. intensity compensation
4. sampling technique

Q20) The clarity of a displayed image depends on the

1. resolution
2. floating point precision of the system
3. associated software
4. aspect ratio

Q21) Random-scan monitors are also referred to as

1. vector display
2. stroke writing display
3. calligraphic display
4. none of the above

Q22) Pixel phasing is a technique for

1. shading
2. anti-aliasing
3. hidden line removal
4. none of the above

Q23) Choose the correct statement(s)

1. Random scan monitors draw a picture one line at a time.
2. The components line of a random scan picture must be refreshed in a particular order.
3. Raster scan monitors draw a picture one line at a time.

Random scan method is well suited for displaying shading and colors areas.

Q24). A common device for drawing, positioning or interactively selecting co-ordinate positions on an object is

(a) Digitizer

(b) Data glove

(c) Joystick

(d) None of the above

Q25). In the Bresenhan's algorithm, error term is initialized to

(a) 0

(b) 1

(c) -1/2

(d) None of the above

Q26). A circle drawn on the screen appears to be elliptical

(a) Screen has rectangular shape

(b) CRT is not completely spherical

(c) It is due to the aspect ratio of the monitor

(d) Our eyes are not at the same level as the screen

Q27). In the generation of circle by Bresenhan's algorithm, it is simple to generate

(a) All octants

(b) One octant first and others by successive reflection

(c) One octant first and others by successive rotation

(d) One octant first and others by successive translation

Q28). In the generation of circle by Bresenhan's algorithm, it is simple to generate

(a) All octants

(b) One octant first and others by successive reflection

(c) One octant first and others by successive rotation

(d) One octant first and others by successive translation

Q29). Which of the following pixels will not be "ON" for drawing an origin-centered circle with radius 8?

(a) 0,8

(b) 1,8

(c) 4,6

(d) 5,6

Q30) Pixel is

* 1. The smallest addressable point on the screen
  2. An input device
  3. A memory block
  4. A data structure

Q31) Resolution is defined as ………………

1. The number of pixels in the horizontal direction × The number pixels in the vertical direction
2. The number of pixels in the vertical direction × The number pixels in the horizontal direction
3. The number of pixels in the vertical direction + The number pixels in the horizontal direction
4. The number of pixels in the vertical direction - The number pixels in the horizontal direction

Q32) Aspect ratio is

1. The ratio of image’s width to its height
2. The ratio of window to viewport height
3. The ratio of image’s intensity levels
4. The ratio of image’s height to its width

Q33) Refresh rate is …………………..

1. The rate at which the number of bit planes are accessed at a given time
2. The rate at which the picture is redrawn
3. The frequency at which the aliasing takes place
4. The frequency at which the contents of the frame buffer is sent to the display monitor

Q34) The distance between the pixels on a screen is called

1. OCR
2. LCD
3. Dot pitch
4. Refresh rate

Q35) A pictorial screen symbol that represents a computer activity

is called a(n)

1. Pointer
2. Icon
3. Touch screen
4. MICR

Q36) The rate of screen refreshment is called

1. Pixel speed
2. Bit-map speed
3. Raster rate
4. Scan rate

Q37) The following are all advantages of LCD over CRT monitors EXCEPT:

1. Wider viewing area relative to size of the monitor.
2. Less likely to cause eyestrain.
3. More friendly to the environment.
4. Wider viewing angle.

Q38) Computer graphics allows---------

1. User interface
2. Plotting of graphics and chart
3. Office automation and desktop publishing
4. All of above

Q39) Computer graphics allows\_\_\_\_\_\_\_\_\_

1. Computer aided drafting and design
2. Simulation and animation
3. Office automation and desktop publishing
4. All of above

Q40) computer graphics is used in\_\_\_\_\_\_\_\_\_

1. Industry
2. Business
3. Government organizations
4. All of above

Q41) computer graphics is used in\_\_\_\_\_\_\_\_\_

1. Education
2. Entertainment
3. Home
4. All of above

Q42) CRT stands for\_\_\_\_\_\_\_\_

1. Cathode Ray Tube
2. Colour Ray Tube
3. Cathode Radio Tube
4. Colour Radio Tube

Q43) A CRT is \_\_\_\_\_\_\_\_ evacuated Tube

1. Plastic
2. Glass
3. Steel
4. Iron

Q44) The inner side of CRT screen is coated with \_\_\_\_\_\_\_\_\_\_\_ substance

1. Phosphor
2. Black
3. Neon
4. White

Q45)The\_\_\_\_\_\_\_\_ applied to deflection plates controls the deflection of the electron beam in CRT.

1. Force
2. Magnetic fields
3. Voltage
4. None of these

Q46) In vector scan displays, the phosphor is to be refreshed at least \_\_\_\_\_\_\_\_\_ times per second to avoid flicker

1. 10
2. 20
3. 30
4. 40

Q47) In raster scan CRT, when a beam reaches the bottom of the screen, it is made \_\_\_\_\_\_\_ and rapidly retraced back to the top.

1. ON
2. OFF
3. Flickering
4. Half intensity

Q48) The path of electron beam takes at the end of each refresh cycle is called \_\_\_\_\_

1. Horizontal retrace
2. Vertical retrace
3. Diagonal retrace
4. Left to right retrace

Q49) The path of electron beam takes when returning to the left side of CRT screen is called \_\_\_\_\_

1. Horizontal retrace
2. Vertical retrace
3. Diagonal retrace
4. Left to right retrace

Q50) Frame buffer is used to store

1. Number pixels in the image
2. Intensities of pixels
3. Image definitions
4. Co-ordinate values of pixels

Q51) Refreshing on raster scan displays is carried out at the rate of \_\_\_\_\_\_\_

1. 60 to 80 frames per second
2. 40 to 60 frames per second
3. 30 to 60 frames per second
4. None of the above

Q52) Shadow mask method s produce \_\_\_\_\_\_\_\_

1. Wider range of colours than beam penetrations
2. Smaller range of colours than beam penetrations
3. Equal range of colours than beam penetrations
4. None of the above

Q53)The resolution of printer is measured in \_\_\_\_\_\_

1. Pixel density
2. Dot pitch
3. Hertz
4. Dpi

Q54) Which of the following is stationary pointing device that uses small touch sensitive surface?

1. Trackball
2. Mouse
3. Trackpad
4. All of these

Q55) Minimum \_\_\_\_ points are required to represent a line

1. Two
2. Three
3. Four
4. One

Q56) The equation of line in slope intercept form is given as\_\_\_\_\_

1. X=my+b
2. Y=mx+b
3. Y+b=mx
4. B=mx+y

Q57) In equation of a line y=mx+b, b is \_\_\_\_\_\_\_\_

1. Slope of line
2. Constant
3. Intercept
4. None of these

Q58) Intercept of line is \_\_\_\_\_\_\_\_

1. The height at which line crosses x axis
2. The height at which line crosses y axis
3. Intersection point of two lines
4. None of these

Q59) When a line is represented as y=mx+b and rx+sy+t=0 m=\_\_\_\_\_\_

1. –r/s
2. r/s
3. s/r
4. –s/r

Q60) When a line is represented as y=mx+b and rx+sy+t=0 b=\_\_\_\_\_\_

1. –r/s
2. r/s
3. s/r
4. –t/s

Q61) If two lines are represented by equations y=m1x+b1 and y=m2x+b2 then their point of intersection is given by \_\_\_\_\_\_\_\_\_.

Q62) when we say line it\_\_\_\_\_

1. Extends forward
2. Extends backward
3. Ends at two points
4. Extends forever both forward and backward

Q63) when we say line segment it\_\_\_\_\_

1. Extends forward
2. Extends backward
3. Ends at two points
4. Extends forever both forward and backward

Q64) If endpoints of line segment are (x1,y1)and (x2,y2) then the length of line segment L is given by

Q 65) A vector has \_\_\_\_\_\_\_

a) A single direction

b) a length

c) two directions

d) both a and b

Q66) The multiplication of vector and the reciprocal of its length is equal to\_\_\_

1. Zero
2. One
3. Cant define
4. None of above

Q67)DDA stands for

1. Data differential algorithm
2. Digital data algorithm
3. Digital differential analyzer
4. Digital differential algorithm

Q68) The brightness of line is dependent on the \_\_\_\_\_\_\_\_ of line

1. Orientation
2. Start and end points
3. Length
4. None of these

Q69) The horizontal and vertical lines appear \_\_\_\_\_\_\_ than 45 degree line

1. Straight than
2. Brighter than
3. Longer than
4. None of these

Q70) The slope of line is given as

Q71) In DDA line algorithm or , whichever is \_\_\_\_\_\_ , is chosen as one raster unit(stepping parameter)

1. 1
2. 0
3. Smaller
4. Larger

Q72) The end point accuracy of DDA algorithm is

1. Good
2. Best
3. Poor
4. Better

Q73) Floating point arithmetic in DDA algorithm is \_\_\_\_

1. Time efficient
2. Time consuming
3. Fast
4. None

Q74) DDA line drawing algorithm for calculating pixel position is \_\_\_\_\_\_\_ than the direct use of line equation y= mx + b

1. Slower
2. Faster
3. Of equal speed

Q75) The advantage of Bresenham’s algorithm over conventional DDA algorithm is?

1. No rounding operation
2. Use of integer calculations
3. Producing smooth appearance
4. Less number of iterations

**2 marks**

Q76) if one octant of circle is generated, to complete generation of full circle how many reflections are required

1. 4
2. 5
3. 8
4. 1

Q77) The value of initial decision parameter in Bresenham’s line drawing algorithm for |m| < 1 is

1. 2dy - dx
2. 2dy + dx
3. 2dx+dy
4. 2dx - dy

Q78) The value of initial decision parameter in Bresenham’s line drawing algorithm for |m| > 1 is

1. 2dy - dx
2. 2dy + dx
3. 2dx+dy
4. 2dx – dy

Q79) If initial point on circle boundary is (0,r), whit is initial decision parameter in midpoint circle drawing algorithm

1. 3-2r
2. 5/4 –r
3. 1-2r
4. 3-

Q80) If initial point on circle boundary is (0,r), whit is initial decision parameter in Bresenham’s circle drawing algorithm

1. 3-2r
2. 5/4 –r
3. 1-2r
4. 3-r

Q81) If line is to be drawn from (0,0) to (4,6) using DDA algorithm the third point to be plotted is

1. (0,0)
2. (1,2)
3. (2,3)
4. (3,2)

Q82) If line is to be drawn from (0,0) to (4,6) using Bresenham’s algorithm the third point to be plotted is

1. (0,0)
2. (1,2)
3. (2,3)
4. (3,2)

Q83) If line is to be drawn from (1,1) to (5,3) using DDA algorithm the third point to be plotted is

1. (0,0)
2. (1,2)
3. (2,3)
4. (3,2)

Q84) If line is to be drawn from (1,1) to (5,3) using Bresenham’s algorithm the third point to be plotted is

1. (0,0)
2. (1,2)
3. (2,3)
4. (3,2)

Q85) In DDA algorithm if dx>dy and x1<x2 then what are the values of xinc and yinc

1. Xinc=1 yinc = m
2. Xinc=-1 yinc = -m
3. Xinc=1/m yinc = 1
4. Xinc=1/m yinc = -1

Q86) In DDA algorithm if dx>dy and x1>x2 then what are the values of xinc and yinc

1. Xinc=1 yinc = m
2. Xinc=-1 yinc = -m
3. Xinc=1/m yinc = 1
4. Xinc=1/m yinc = -1

Q87) In DDA algorithm if dx<dy and y1>y2 then what are the values of xinc and yinc

1. Xinc=1 yinc = m
2. Xinc=-1 yinc = -m
3. Xinc=1/m yinc = 1
4. Xinc=1/m yinc = -1

Q88) In DDA algorithm if dx<dy and y1>y2 then what are the values of xinc and yinc

1. Xinc=1 yinc = m
2. Xinc=-1 yinc = -m
3. Xinc=1/m yinc = 1
4. Xinc=1/m yinc = -1

Q89) In Bresenham’s line drawing algorithm if decision parameter(G) is greater than zero then

1. G=G+2dy-2dx
2. G=G+2dy
3. G=G+2dy-dx
4. G=G+2dy+dx

Q89) In Bresenham’s line drawing algorithm if decision parameter(G) is less than zero then

1. G=G+2dy-2dx
2. G=G+2dy
3. G=G+2dy-dx
4. G=G+2dy+dx

Q90) Points 3.2,7.8 and 3.7,7.1 are represented as

1. 3,8
2. 3,7
3. 4,7
4. 4,8

Q91) A line connecting the points (1,1) and (5,3) is to be drawn using DDA algorithm. Find value of x and y increments

1. Xinc=1 yinc=1
2. Xinc=0.5 yinc=1
3. Xinc=1 yinc=0.5
4. Xinc=1 yinc=0.6

Q92) A line connecting the points (0,0) and (5,5) is to be drawn using DDA algorithm. Find value of x and y increments

1. Xinc=1 yinc=1
2. Xinc=0.5 yinc=1
3. Xinc=1 yinc=0.5
4. Xinc=1 yinc=0.6

Q93) A line connecting the points (2,3) and (6,9) is to be drawn using DDA algorithm. Find value of x and y increments

1. Xinc=1 yinc=1
2. Xinc=0.66 yinc=1
3. Xinc=1 yinc=0.5
4. Xinc=1 yinc=0.66

Q94) A line connecting the points (1,1) and (5,5) is to be drawn using Bresenham’s algorithm. Find value initial decision parameter.

1. 4
2. 0
3. 1
4. 8

Q95) A line connecting the points (1,1) and (5,3) is to be drawn using Bresenham’s algorithm. Find value initial decision parameter.

1. 4
2. 0
3. 1
4. 8

Q96) A line connecting the points (2,3) and (6,9) is to be drawn using Bresenham’s algorithm. Find value initial decision parameter.

1. 4
2. 0
3. 1
4. 8