Computer Graphics and Animation MCQ Questions and Answers

Unit:1 Introduction

Multiple Choice Questions and Answers

1. Smallest size object that can be displayed on a monitor is called :

(a) Picture element

(b) Point

(c) Dot Pitch

(d) Aspect ratio

2. Each screen point is referred to as:

(a) Resolution

(b) Pixel

(c) Persistence

(d) Dot Pitch

3. On a monochromatic monitor, the frame buffer is known as:

(a) Display file

(b) Pixmap

(c) Bitmap

(d) Display Command

4. On a color monitor, the refresh buffer is also called :

(a) Display file

(b) Pixmap

(c) Bitmap

(d) Display Command

5. The maximum number of points that can be displayed without overlap on a CRT

(a) Aspect Ratio

(b) Resolution

(c) Brightness

(d) Pixel

6. _____ is the ratio of horizontal points to vertical points necessary to produce equal length lines in both directions.

(a) Dot Pitch

(b) Resolution

(c) Aspect Ratio

(d) Height-Width Ratio

7. In CRT, the electron intensity is adjusted using :

(a) Accelerating anode

(b) Control grid

(c) Electron gun

(d) Focusing anode

8. Brightness of a display is controlled by varying the voltage on the _____.

(a) Focusing anode

(b) Connection pins

(c) Control grid

(d) Power supply

9. Memory area holding the intensity information of an image is called:

(a) Refresh buffer

(b) Font cache

(c) Picture definition

(d) Video controller

10. Lower persistence phosphorus needs_____ refresh rate

(a) Lower

(b) Higher

(c) Medium

(d) None of these

11. The purpose of refreshing a CRT is:

(a) To avoid flickering

(b) To maintain a steady picture

(c) To avoid fading of pixels

(d) All of the above

12. The fly-back of electron beams from one scan line to next is known as :

(a) Vertical Retrace

(b) Horizontal Retrace

(c) Raster scanning

(d) Refreshing

13. The return of electron beam to top left corner of the screen after one frame is called:

(a) Horizontal fly-back

(b) Vertical Fly-back

(c) Scanning

(d) None of these

14. In a raster scan display, the frame buffer holds:

(a) Line drawing commands

(b) Scanning instructions

(c) Image Resolution

(d) Intensity information

15. DVST stands for:

(a) Digital View Storing Table

(b) Direct Visual Storage Tube

(c) Direct View Storage Tube

(d) Digital View Storage Tube

16. Refreshing is not needed in DVST because of the presence of :

(a) Primary gun

(b) Flood gun

(c) Focusing anode

(d) Control grid

17. In DVST, the electron beam from primary electron gun strikes on _____.

(a) Phosphor screen

(b) Collector grid

(c) Storage grid

(d) Flood gun

18. Identify the features of DVST from the following.

(a) Monochromatic, Flicker-free, Low resolution

(b) Monochromatic, Flicker-free

(c) Color screens, Refresh monitors, High resolution

(d) Expensive, Low resolution

19. Which Color producing technique is more suitable for raster scan system?

(a) Beam penetration technique

(b) Shadow mask technique

(c) All of these

(d) None of these

20. Which Color producing technique is more suitable for random scan system?

(a) Beam penetration technique

(b) Shadow mask technique

(c) All of these

(d) None of these

21. Video devices with reduced volume, weight and power consumption are collectively known as:

(a) Light weight monitors

(b) Flat-panel displays

(c) CRT

(d) Portable display

22. Pick the odd one out

(a) LED

(b) Plasma Panel display

(c) Thin-film electroluminescent display

(d) LCD

23. _____ is responsible for accessing the frame buffer to refresh the screen.

(a) Graphics package

(b) Video controller

(c) CPU

(d) Monitor

24. Digitizing a picture definition into a set of intensity values is known as:

(a) Digitization

(b) Scan conversion

(c) Refreshing

(d) Scanning

25. _____ will free the CPU from graphics chores.

(a) Display processor

(b) Monitor

(c) ALU

(d) Video controller

26. Identify which is a non-emissive display

(a) LED

(b) LCD

(c) Gas Discharge Tube

(d) Plasma Panel

27. Identify the odd one out.

(a) Mouse

(b) Keyboard

(c) Trackball

(d) Spaceball

28. The amount of light emitted by the phosphor coating depends on the?

(a) Number of electrons striking the screen

(b) Speed of electrons striking the screen

(c) Distance from the cathode to the screen

(d) None of these

29. Vector graphics is composed of

(a) Pixels

(b) Paths

(c) Palette

(d) None of these

30. Raster graphics are composed of

(a) Pixels

(b) Paths

(c) Palette

(d) None of these

31. A major disadvantage of DVST in interactive computer graphics is

(a) Inability to produce a complex image

(b) Inability to selectively erase part of the image from the screen

(c) Inability to produce a bright picture

(d) None of these

32. Interactive graphics are useful in

(a) Training pilots

(b) Computer-aided design

(c) Process control

(d) All of these

33. The standardization is needed

(a) To make application programs more portable

(b) To increase their utility

(c) To allow them to use in a different application environment

(d) All of these

34. GKS stands for

(a) Graphical Kernel System

(b) Graphics kernel standard

(c) Generic kernel system

(d) Generic kernel standard

35. PHIGS stands for

(a) Programmer's Hierarchical Interface Graphics Standard

(b) Programmer's Hierarchical Interactive Graphics Standard

(c) Programmer's Hierarchical Interest Graphics Standard

(d) None of these

36. The basic geometric structures that describe a scene on display is called :

(a) Attributes

(b) Output primitive

(c) Lines

(d) Curves

37. The simplest output primitive is :

(a) Straight line

(b) Straight-line segment

(c) Point

(d) Circle

38. _____ controls the basic display properties of output primitives.

(a) Attribute parameter

(b) setpixel()

(c) getpixel()

(d) None of these

39. Identify the values for the fill-style parameter from the following:

(a) Hollow

(b) Hatch

(c) Pattern

(d) All of these

40. (2,4) is a point on a circle that has a center at the origin. Which of the following points are also on the circle?

(a) (2,-4)

(b) (-2,4)

(c) (-4,-2)

(d) All of these

41. Which of the following have octal symmetry?

(a) Parabola

(b) Ellipse

(c) Hyperbola

(d) Circle

42. DDA Stands for:

(a) Digital Differential Analyzer

(b) Digital Differential Analysis

(c) Digital Differential Algorithm

(d) Digital Differential Anatomy

43. What is slope value at the boundary point of region 1 and region 2 in the midpoint ellipse algorithm?

(a) 1

(b) -1

(c) 0.5

(d) 0

44. Equation of initial decision parameter for the midpoint circle algorithm is:

(a) $P_0 = 1+ r$

(b) $P_0 = 1- r$

(c) $P_0 = 1+ 2r$

(d) $P_0 = 1-2r$

45. For complicated shape in the flood fill algorithm we use:

(a) 2 connected region

(b) 4 connected region

(c) 6 connected region

(d) 8 connected region

46. What is true about the DDA algorithm for the scan conversion of a line?

(a) General-purpose method

(b) Incremental method

(c) Current calculation is independent of previous step

(d) Is slower than the use of line equation

47. Which of these is false for Boundary-fill algorithm?

(a) Recursive algorithm

(b) Begins with a starting point called seed

(c) It checks for any pixel to be boundary color

(d) Works only for rectangles and circles

48. Which type of lines are ignored in the scan-line algorithm to fill regions?

(a) Vertical

(b) Horizontal

(c) Left inclined

(d) Right inclined

49. Scan-line algorithm to fill regions efficient for :

(a) Irregular regions

(b) Circle

(c) Polygon

(d) None of these

50. A line can be represented by:

(a) One point

(b) Two points

(c) Three points

(d) Four points

51. A vector can be defined as :

(a) Intersection b/w two points position

(b) Difference b/w two points position

(c) Comparison b/w two points position

(d) None of these

52. The functions of the scan line polygon fill algorithm are :

(a) Find the intersection point of the boundary of the polygon and scan line

(b) Find the intersection point of the boundary of polygon and point

(c) A and B both

(d) None of these

53. Which is none recursive fill algorithm?

(a) Boundary fill algorithm

(b) Flood fill algorithm

(c) Scan line polygon fill algorithm

(d) All of these

54. What are Random scan and Raster scan techniques?

(a) Techniques to display an image on the screen

(b) Line Drawing Techniques

(c) Polygon Drawing Techniques

(d) None of the above

55. Which among the following is best suited for a smooth line drawing on the screen?

(a) Random Scan Display Algorithm

(b) Raster Scan Display Algorithm

(c) Both a. and b.

(d) None of the above

56. Which among the following is best suited for a realistic shaded image drawing on the screen?

(a) Random Scan Display Algorithm

(b) Raster Scan Display Algorithm

(c) Both a. and b.

(d) None of the above

57. Which of the following options is correct in accordance with the Random Scan Display Algorithm?

(a) It is best suited for line drawing algorithm.

(b) It has a high resolution.

(c) It has an electron beam which strikes only that part of the screen where the drawing is needed.

(d) All of the above

58. Which among the following are the types of scanning or travelling of beam in a raster scan display technique?

(a) Interlaced Scanning

(b) Non- Interlaced Scanning

(c) Spiral Scanning

(d) All of the Above

59. In ___ a beam of an electron is moved across the screen. It moves from top to bottom considering one row at a time.

(a) Raster Scan Display

(b) Random Scan Display

(c) Both A and B

(d) None of the above mentioned

60. A beam of electron moves through each row, its intensity is alternatively turned ___ which helps to create a pattern of spots that are illuminated.

(a) On and off

(b) Power interrupt

(c) Up and down

(d) All of the above mentioned

61. In ___ a beam of the electron is directed only to the screen areas where any picture has to be displayed or drawn on the screen.

(a) Video Display

(b) Raster Scan Display

(c) Random Scan Display

(d) All of the above mentioned

62. Raster scan systems generally use ___ to display an image.

(a) Frame buffer

(b) Display controller

(c) Display file program

(d) None of the These

63. With reference to Random Scan Display the beam of electron moves to the left top corner of the screen to move to another frame. This motion is referred to as ___

(a) Vertical retrace

(b) Horizontal retrace

(c) Scan line

(d) All of the above mentioned

64. What is the range of the pixels in a Grayscale images?

(a) 0 - 1

(b) 0 - 255

(c) 0 - 210

(d) None of the above

65. The RGB image is known as the true color image. What does RGB stand for?

(a) Real grey Black Image

(b) Red greyed Background Image

(c) Red Green Blue image

(d) None of the above

66. Which of the following options is not correct according to the definition of Computer Graphics?

(a) Computer Graphics is used for animation purposes.

(b) Computer graphics can be used to provide better user interface.

(c) Computer graphics can improve the sound quality of a video

(d) None of the above

67. GUI stands for,

(a) Graphical Usable Interface

(b) Graphical User Interface

(c) Graph Users Interface

(d) Graphic User Interface

68. PPI stands for,

(a) Pixel per inch

(b) Photos per instruction

(c) Pixels per image

(d) None of the above

69. Graphics can be -

(a) Simulation

(b) Drawing

(c) Movies, photographs

(d) All of the above

70. The inside of the Cathode Ray Tube is coated with what material?

(a) Fluorescent powder

(b) No coating

(c) Phosphorus

(d) None of the above

71. Which among the following is a part of the Cathode Ray Tube?

(a) Control Electrode

(b) Electron Gun

(c) Focusing System

(d) All of the Above

72. Which of the following options is correct in accordance with the cathode ray tube?

(a) CRTs are brighter than LCDs.

(b) CRTs can operate at any resolution and at any aspect ratio.

(c) CRTs are the most expensive display device till current date.

(d) None of the above

73. CRT stands for,

(a) Cathode Random Tunnel

(b) Cathode Ray Tube

(c) Cathode Random Tube

(d) Cathode Ray Tunnel

74. What is the work of control electrode?

(a) It controls the electron beam

(b) It established the electrode-cathode connection

(c) Its glows the electrode

(d) None of these

75. Which lights form the viewing colors that we see on the screen?

(a) Red

(b) Blue

(c) Green

(d) All of these

76. Which part of CRT monitor is responsible for clear picture on the screen?

(a) Phosphorus Screen

(b) Deflection Yoke

(c) Focusing System

(d) Colored Lights of the screen

77. Which part of the CRT contains cathode?

(a) Focusing system

(b) Electron Gun

(c) Screen

(d) Control Electrode

78. CAD stands for -

(a) Computer art design

(b) Computer-aided design

(c) Car art design

(d) None of the above

79. What is a pixel mask?

(a) a string containing only 0's

(b) a string containing only 1's

(c) a string containing two 0's

(d) a string containing both 1's and 0's

80. The higher number of pixels gives us a ____ image -

(a) Better

(b) Worst

(c) Smaller

(d) None of the above

81. From the given list of options, which one is the accurate and efficient line-generating algorithm?

(a) Midpoint algorithm

(b) DDA algorithm

(c) Bresenham's Line algorithm

(d) None of the above

82. What is the formula for calculating the slope 'm' of a line?

(a) m = dx / dy

(b) m = dy / dx

(c) y = mx + c

(d) None of the above

83. Which of the following options is not correct according to the definition of Bresenham's line drawing algorithm?

(a) It gives a close approximation of points of line by determining n-dimensional raster that should be selected.

(b) It is an incremental error algorithm.

(c) It gives exact line points.

(d) None of the above

84. Which of the following best defines Scan Conversion in computer graphics?

(a) It is a process of representing graphics objects as a collection of pixels

(b) It is a process of converting colored images to grayscale images.

(c) It is a process of converting handmade drawing to computer pictures through a scanner

(d) None of the above

85. What is the main reason behind developing algorithms for scan conversion?

(a) The algorithms can generate graphics objects at a faster rate here.

(b) Here, the memory can be efficiently used

(c) Both a. and b.

(d) None of the above

86. "Each pixel has some intensity value which is represented in memory of the computer. This memory part is known as the _____."

(a) Frame Buffer

(b) Random Access Memory (RAM)

(c) Picture Memory

(d) None of the above

87. Which of the following properties is followed by the ellipse?

(a) 4 – symmetry property

(b) 8 – symmetry property

(c) 6 – symmetry property

(d) All of the above

88. Why does a circle drawn on a computer screen look elliptical?

(a) Because of its elliptical nature

(b) Because CRTs design is elliptical

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

(d) None of these

89. During a circle creation using Bresenham's algorithm, it is usually simple to generate a circle?

(a) One octant first and other by successive translation

(b) One octant first and other by successive reflection

(c) Both A and B

(d) None of the above mentioned

90. The value of the decision parameter determines whether the mid-point lies ___ boundary and the then position of the mid-point help in drawing the ellipse.

(a) At boundaries

(b) Inside, outside, or on the ellipse

(c) Only inside the boundaries

(d) Only outside the boundaries

91. ___ is defined as a group of points where the sum of the distances for all points is the same.

(a) Lines

(b) Dots

(c) Only A

(d) Ellipses

92. Which of the following is true with respect to the Bresenham's line drawing algorithm?

(a) It overcomes the drawbacks of DDA line drawing algorithm

(b) The DDA algorithm was proposed to overcome the limitations of Bresenham's line drawing algorithm

(c) Both a. and b.

(d) None of the above

93. Why is the complexity of Bresenham's line drawing algorithm less than that of DDA line drawing algorithm?

(a) It uses floating point operations over integer addition and subtraction

(b) It considers only selected ranged inputs

(c) It uses integer addition and subtraction over floating point operations

(d) None of the above

94. Which of the following are true with respect to the Bresenham's algorithm?

(a) It produces smooth polygons

(b) The results of this algorithm are 100 percent accurate.

(c) Due to integer operations, it's complexity gets reduced

(d) All of the above

95. Which of the following is not the pattern of line?

(a) Dotted line

(b) Dashed line

(c) Dark line

(d) All of the above

96. Aspect Ratio can be defined as -

(a) The ratio of the vertical points to horizontal points

(b) of pixels

(c) Both (a) & (b)

(d) None of the above

97. A user can make any change in the image using -

(a) Interactive computer graphics

(b) Non-Interactive computer graphics

(c) Both (a) & (b)

(d) None of the above

98. The number of pixels stored in the frame buffer of a graphics system is known as

(a) Resolution

(b) Depth

(c) Resalution

(d) Only a

99. _____ stores the picture information as a charge distribution behind the phosphor-coated screen.

(a) Cathode ray tube

(b) Direct-view storage tube

(c) Flat panel displays

(d) 3D viewing device

100. The devices which converts the electrical energy into light is called

(a) Liquid-crystal displays

(b) Non-emitters

(c) Plasma panels

(d) Emitters

101. In LCD, the refresh rate of the screen is

(a) 60 frames/sec

(b) 80 frames/sec

(c) 30 frames/sec

(d) 100 frames/sec

102. Random-scan system mainly designed for

(a) Realistic shaded screen

(b) Fog effect

(c) Line-drawing applications

(d) Only b

103. On a black and white system with one bit per pixel, the frame buffer is commonly called as

(a) Pix map

(b) Multi map

(c) Bitmap

(d) All of the mentioned

104. In which system, the Shadow mask methods are commonly used

(a) Raster-scan system

(b) Random-scan system

(c) Only b

(d) Both a and b

105. A common device for drawing, painting, or interactively selecting coordinate positions on an object is a

(a) Image scanner

(b) Digitizers

(c) Data glove

(d) Touch panels

106. The process of filling an area with rectangular pattern is called

(a) Tiling

(b) Linear fill

(c) Tint-fill

(d) Soft-fill

107. The fill color that is combined with the background color is known as

(a) Soft fill

(b) Tint fill

(c) Both a and b

(d) None

108. Options for filling a defined region include a choice between_____

(a) Solid color or patterns fill

(b) Choices for particular colors and pattern

(c) Both a and b

(d) None

109. Grayscale is used for -

(a) Random scan display

(b) Monitors with color capability

(c) Monitors with no color capability

(d) All of the above

110. Random scan systems are used for -

(a) Color drawing application

(b) Pixel drawing application

(c) Line drawing application

(d) None of the above

111. How many phosphor color dots at each pixel position in a shadow mask CRT?

(a) 1

(b) 7

(c) 2

(d) 3

112. Shadow mask method is used in -

(a) Raster scan system

(b) Random scan system

(c) Both (a) & (b)

(d) None of the above

113. In which of the following CRT methods, there is an occurrence of convergence problem?

(a) Shadow mask method

(b) Beam penetration

(c) Both of the above

(d) None of the above

114. Which of the following uses the Beam penetration method?

(a) Raster scan system

(b) Random scan system

(c) Both (a) & (b)

(d) None of the above

115. Plasma panel is a type of -

(a) Emissive display

(b) Non-Emissive display

(c) Printer

(d) None of the above

116. Which of the following algorithm is used to fill the interior of a polygon?

(a) Boundary fill algorithm

(b) Scan line polygon fill algorithm

(c) Flood fill algorithm

(d) All of the above

117. Which of the algorithm is used to color a pixel if it is not colored and leaves it if it is already filled?

(a) Boundary fill algorithm

(b) Scan line polygon fill algorithm

(c) Flood fill algorithm

(d) All of the above

118. Plasma panel is also called as -

(a) Non-emissive display

(b) Liquid crystal display

(c) Gas discharge display

(d) None of the above

119. _____ is a basic approach used to fill the polygon.

(a) seed fill

(b) scan fill

(c) a and b

(d) None of these

120. The seed fill algorithm for filling polygon is classified as _____ fill algorithm and _____ fill algorithm.

(a) flood, boundry

(b) even, odd

(c) edge, flood

(d) boundry, scan

121. Polygoan filling algorithms those fill interior-defined regions are called _____ algorithms.

(a) flood fill

(b) boundry fill

(c) scan line

(d) edge fill

122. Polygoan filling algorithms those fill boundary defined regions are called _____ algorithms.

(a) flood fill

(b) boundry fill

(c) edge line

(d) a and b

123. In a boundary fill algorithm for filling polygon, boundary defined regions may be either _____ connected or

_____ connected.

(a) 2,4

(b) 4,8

(c) 8,16

(d) 8,6

124. Seed fill algo for filling polygon is _____ algorithm.

(a) recursive

(b) non-recursive

(c) a and b

(d) None of these

125. Scan line algorithm for filling polygon is _____ algorithm.

(a) recursive

(b) non-recursive

(c) A and B

(d) None of these

126. _____ is a method for testing a pixel inside of a polygon.

(a) even-odd method

(b) winding number method

(c) a and b

(d) None of these