COMPUTER GRAPHICS

Question Bank 1

Helping Others Have Special taste

Questions

1- …… are often referred to as Video Monitor or video Display Unit (VDU).

a- Input systems

b- Display systems

c- Processing systems

d- Storage systems

2- The primary output device in a graphics system is the monitor

a- True b- False

3- CRT stands for ….

a- Carbon Ray Tube

b- Cathode Ray Transfer

c- Carbon Road Transfer

d- Cathode Ray Tube

4- Refresh CRT overcomes the problem of slow fading of emitted light to the screen.

a- True b- False

5- Refresh CRT keep the phosphor layer glowing by ….

a- draw the picture only once.

b- Repeatedly redraw the picture.

c- emits two rays instead of one.

d- separated rays each one is responsible for only one pixel in the screen.

6- Refresh CRT directing the ……. back over the same spot.

a- shadow mask

b- electron beams

c- phosphor layer

d- connector pins

7- The electron gun's main job is to ……

a- deflect the electron beams.

b- direct the electron beams.

c- emit electron beams.

d- change the intensity of the electron beams.

8- Heat is supplied to the anode by the filament.

a- True b- False

9 – The free electrons are accelerated toward the phosphor coating by a …….

a- high negative voltage

b- low negative voltage

c- high positive voltage

d- low positive voltage

10- The intensity of the electron beams is controlled by setting the voltage level on the control grid.

a- True b- False

11- A small negative voltage on the control grid will ….

a- does not affect the number of electrons.

b- redirect the electrons.

c- increase the number of electrons.

d- decrease the number of electrons.

12- The …… is needed to force the electron beams to converge into a small spot in the phosphor layer.

a- deflection system

b- accelerating system

c- focusing system

d- control system

13- Electrostatic focusing is commonly used in computer graphics monitors.

a- True b- False

14- A magnetic field can be used instead of an electrostatic lens in the focusing system.

a- True b- False

15- The distance that electron beams must travel to different points on the screen varies because the radius of curvature for most CRT is …….. the distance from the focusing system to the screen center.

a- greater than

b- smaller than

c- equals to

16- The electron beam will be focused properly only at …… of the screen.

a- sides

b- top

c- bottom

d- center

17- The deflection of the electron beams can only be controlled with electric fields.

a- True b- False

18- The magnetic deflection coils mounted on the …… of the CRT envelope.

a- inside

b- outside

c- center

d- none of the above

19- In the deflection system, ……. of coils Is/are used.

a- one pair

b- two pairs

c- three pairs

d- five pairs

20- In the deflection system, the coils of each pair are mounted on the same side of the neck of the CRT envelope.

a- True b- False

21- In the deflection system, the pair which is mounted on the top and bottom of the neck is called …….

a- opposite deflection

b- horizontal deflection

c- vertical deflection

d- diagonal deflection

22- The proper deflection amounts are attained by adjusting …… through the coil.

a- the current through the coil

b- the thickness of the coil

c- the size of the coil

d- the number of coils

23- In the deflection system, the horizontal pair of plates is used to control the vertical deflection.

a- True b- False

24- Spots of lights are produced on the screen by the transfer of the CRT beam energy to ……

a- focusing system

b- deflection system

c- phosphor layer

d- electrons gun

25- All beam energy is converted into heat energy.

a- True b- False

26- The excited phosphor gives its extra energy as small quantum of light energy.

a- True b-False

27- Persistence is the time taken by the emitted light from the screen to decay to one-tenth of its original intensity.

a- True b-False

28- The light intensity is equal all over the screen.

a- True b- False

29- …... is the maximum number of points that can be displayed without overlap on a CRT.

a- Refresh rate

b- Intensity

c- Resolution

d- Aspect ratio

30- Resolution doesn't depend on it.

a- phosphor type

b- colors to be displayed

c- intensity to be displayed

d- focusing and deflection systems

31- ..... gives the ratio of vertical points to horizontal points necessary to produce an equal length of lines in both directions on the screen.

a- Refresh rate

b- Intensity

c- Resolution

d- Aspect ratio

32- .... is a one dot or picture element.

a- Raster

b- Pixel

c- scan line

d- vector

33- .... Is a rectangular array of points or dost.

a- Raster

b- Pixel

c- scan line

d- vector

34- …. is a row of pixels.

a- Raster

b- Pixel

c- scan line

d- vector

35- In a raster scan system, the electron beam is swept across the screen, one column at a time from bottom to top.

a- True b- False

36- Picture definition is stored in a memory area called ……

a- memory buffer.

b- stack buffer.

c- refresh buffer.

d- picture buffer.

37- Refresh buffer is also called frame buffer.

a-True b- False

38- Refresh buffer holds the set of …… values for all the screen points.

a- x-axis and y-axis

b- x-axis only

c- power

d- intensity

39- The intensity range for pixel positions depends on the capability of the raster system.

a-True b-False

40- In black and white system, each pixel is stored as ….

a- one bit

b- 4 bits

c- one byte

d- 4 bytes

41-In all display systems, frame buffer is also called bitmap.

a-True b-False

42- For systems with multiple bits per pixel, the frame buffer is called pixmap.

a-True b-False

43- Refresh rate unit is ……

a- bit

b- byte

c- hertz

d- millisecond

45- Refreshing on raster scan displays is carried out at a rate of 100 to 120 frames per second.

a-True b-False

46- ……. retrace is the return to the …… of the screen, after refreshing each scan line.

a- Vertical – left

b- Vertical – right

c- Horizontal – left

d- Horizontal – right

47- …… retrace happens at the end of each frame, the electron beam returns to the …… corner of the screen.

a- Vertical – top left

b- Vertical – top right

c- Horizontal – bottom left

d- Horizontal – bottom right

48- On some raster systems, each frame is displayed in …… pass(es) using an interlaced refresh procedure.

a- one

b- two

c- three

d- none

49- Flicker is noticeable in 60 FPS noninterlaced displays.

a-True b-False

50 - The quality of a raster image is determined by ……

a- resolution

b- color depth of each pixel

c- a&b

d- none

51 - Raster graphics can be scaled to a higher resolution with the loss of quality.

a- True b- False

52 - Raster scan is the representation of images as a ……, and Random scan display is the representation of images as a ……..

a- collection of dots - collection of dots

b- geometrical primitives - geometrical primitives

c- collection of dots - geometrical primitives

d- geometrical primitives – collection of dots

53 - Random scan monitors draw a picture one line at a time.

a- True b-False

54 - To display a picture in a random scan monitor, the system cycles through the set of commands in the …….

a- refresh buffer

b- frame buffer

c- display file

d- a&b

55 - In random scan monitors, the refresh rate depends on the intensity of the lines to be displayed.

a- True b- False

56 - Raster systems have higher resolution than Random scan displays.

a- True b- False

57- A CRT is an evacuated…… tube.

A) Plastic B) Glass C)Steel D) Iron

58 -The **inner side of the CRT screen is coated with …….. substance.**

A) Phosphor B) Black C) Neon D) White

59 - In a shadow mask CRT at each pixel position how many phosphor color dot exist.

A) 1

B) 2

C) 3

D) 4

60 - Which statements about the beam penetration method for producing color display is /are true?

A) It is used with raster scan monitor.

B) It is used with random scan monitors.

C) By using beam penetration method a wide range of colors can be obtained.

D) It uses three electron guns, one for each red, green and blue.

61 - Shadow mask methods Produce_____

A) wider range of colors than beam penetration

B) smaller range of colors than beam penetration

C) equal number of colors as in beam penetration

D) none of the above

62 - An RGB color system with 24 bits of storage per pixel is generally referred to as a ____

A) full-color system

B) Color CRT

C) RGB monitors

D) none of these

63 - shadow mask methods are design as----

A) CMY color models

B) Color depth

C) Bit depth

D) RGB monitors

64 - Color model is also named as (another name):

a) Color space
b) Color gap
c) Color space & color system
d) Color system.

65 - What do you mean by the term pixel depth?

a) It is the number of bits used to represent each pixel in RGB space
b) It is the number of bytes used to represent each pixel in RGB space
c) It is the number of units used to represent each pixel in RGB space
d) It is the number of mm used to represent each pixel in RGB space

66 - How many bit RGB color image is represented by full-color image?

a) 32-bit RGB color image
b) 24-bit RGB color image
c) 16-bit RGB color image
d) 8-bit RGB color image

67 - Which color model is used for most computer model and video systems?

a) RGB
b) RYB
c) CMY
d) HSV

68 - A color in the RGB color model is described by indicating how much each of the red, green and blue is included.

a) True
b) False

69 - What is the range of component values often stored as integer numbers and represented as either decimal or hexadecimal numbers in RGB video signal?

a) 0 to 255
b) 10 to 500
c) 1 to 255
d) 255 to 550

70 - What is the notation for RGB triplet (255, 0, 0) or sometimes #FF, 00, 00 (hexadecimal) in RGB video signals?

a) Digital 16-bit per channel
b) Digital 32-bit per channel
c) Digital 8-bit per channel
d) Digital 64-bit per channel

71 - The color code "000" is ……..

a) White
b) Black
c) Blue
d) Green

72 - What is the result of using n bits per pixel (color depth=n) for N- Bit planes?

A) You get a collection of n bit planes (2^n colors or gray shades at every pixel).

B) The image is converted into a different data format for each color or gray shade.

C) The overall resolution of the image changes and becomes more accurate.

D) The total size of the image changes and becomes larger by a factor of n.

73 - What is the key difference in the representation of colors between true color and high color?

a) The number of bytes of information is used .

b) The available color .

c) The total number of colors that can be represented

d) The method of encoding color information

74 - How many bytes of information are used to represent each pixel in true color?

a) One b) Two c) Three d) Four

75 - What is the total number of possible colors in true color representation?

a) 64 b) 256 c) 16,777,216 d) 32,768

76 - In high color representation, how many bits are allocated for each color channel?

a) 4 bits for blue, 4 bits for red, and 4 bits for green

b) 5 bits for blue, 5 bits for red, and 6 bits for green

c) 8 bits for blue, 8 bits for red, and 8 bits for green

d) 6 bits for blue, 6 bits for red, and 6 bits for green

77 - What is a potential drawback of using high color instead of true color?

a) Higher memory consumption

b) Limited compatibility with certain displays

c) Loss of visible image quality

d) Slower rendering speed

78 - How many bytes are typically used to define each color in a color palette?

a) One b) Two c) Three d) Four

79 - What is the range of intensity values for each primary color component in a color palette entry?

a) 0 to 64 b) 0 to 128 c) 0 to 255 d) 0 to 512

80 - What is the role of the video controller or display controller in a raster scan system?

a) To process data from peripheral devices

b) To control the operation of the display device

c) To perform arithmetic and logic operations

d) To manage memory access

81 - What additional component, besides the CPU, is essential for controlling the display device in a raster scan system?

a) Graphics processing unit (GPU)

b) Memory module

c) Video controller

d) Input/output device

82 - Which term is commonly used to refer to the processor responsible for managing the display in a raster scan system?

a) Central processing unit (CPU)

b) Video controller

c) Random access memory (RAM)

d) Graphics processing unit (GPU)

83 - How does the video controller given direct access to the frame buffer memory?

a) Through buses to the CPU

b) By reserving a fixed area in the system memory

c) By accessing the memory through a separate memory controller

d) By utilizing virtual memory mapping techniques

84 - frame buffer locations and screen positions are referenced as?

a) In polar coordinates

b) In Cartesian coordinates

c) Using hexadecimal notation

d) By relative memory addresses

85 - How are scan lines labeled in relation to screen positions at Y-axis?

a) From left to right

b) From right to left

c) From top to bottom

d) From bottom to top

86 - What registers are used to store the coordinates of screen pixels?

a) x and y registers

b) Alpha and beta registers

c) A and B registers

d) Red and blue registers

87 - What are some operations that can be performed by the video controller?

a) Data encryption and decryption

b) Refreshing operation and transformation

c) Audio playback and recording

d) Network routing and packet filtering

88 - What is the primary purpose of the Display Processor (DP) in a raster scan system?

a) To handle CPU-intensive graphics tasks

b) To manage memory access for the frame buffer

c) To execute arithmetic and logic operations

d) To control input/output devices

89 - What does the term "Scan Conversion" refer to in the context of the Display Processor?

a) Converting analog signals to digital signals

b) Digitizing a picture definition into pixel intensity values for storage in the frame buffer

c) Converting pixel data into vector graphics

d) Generating raster graphics from vector graphics

90 - Which of the following tasks is NOT typically performed by the Display Processor?

a) Generating various line styles

b) Displaying color areas

c) Executing application-specific tasks

d) Performing transformations and manipulations on display objects

91 - What is one of the main advantages of having a separate Display Processor in a raster scan system?

a) Increased CPU workload

b) Faster data transfer between the CPU and the frame buffer

c) Improved graphics performance without burdening the CPU

d) Reduced memory requirements for the frame buffer

92 - how are graphic commands processed in a Random Scan System?

a) They are directly executed by the display processor unit

b) They are translated into a display file and stored in system memory

c) They are processed by the central processing unit (CPU)

d) They are converted into raster scan patterns

93 - What is the role of the display processor unit (DPU) in a Random Scan System?

a) To generate graphic commands

b) To directly control the display device

c) To translate graphic commands into a display file

d) To refresh the screen using the display file stored in system memory

94 - What type of file is created by translating graphic commands in a Random Scan System?

a) Audio file

b) Video file

c) Display file

d) Text file

95 - What distinguishes flat panel displays from CRT displays?

a) They have a higher resolution

b) They have reduce volume and weight

c) They consume less power

d) They have a faster refresh rat

96 - which of the following is NOT listed as a current use for flat panel displays?

a) Small TV monitors

b) Desktop computers

c) Laptop computers

d) Advertisement boards in elevators

97 - Which type of display uses optical effects to convert sunlight or light from another source into graphics patterns?

a) Plasma panel

b) Light-Emitting Diodes (LED)

c) Liquid-Crystal Device (LCD)

d) Thin-film electroluminescent display

98 - What is the principle behind the operation of a Plasma Panel display?

a) Passing polarized light through a liquid-crystal material

b) Applying high voltage to gas between glass plates to create glowing plasma

c) Arranging a matrix of diodes to form pixel positions

d) Filling the region between glass plates with a phosphor material

99 - Which type of display technology uses a matrix of diodes to form pixel positions?

a) Plasma Panel

b) Thin Film Electroluminescent

c) Light Emitting Diode (LED)

d) Liquid Crystal Displays (LCD)

100 - In a Light Emitting Diode (LED) display, how is picture definition stored?

a) In a refresh buffer

b) In a matrix of diodes

c) In a phosphor material

d) In a liquid-crystal material

101 - What is the role of liquid crystal materials in Liquid Crystal Displays (LCD)?

a) To emit light when voltage is applied

b) To block or transmit polarized light

c) To convert electrical energy into light

d) To create glowing plasma

102 - What characteristic defines liquid crystal compounds?

a) They emit light when voltage is applied

b) They have a crystalline arrangement of molecules and flow like a liquid

c) They convert electrical energy into light

d) They generate glowing plasma when high voltage is applied

103 -When the LCD operates in the 4 bit mode, then what more commands are added to it?

a) 33

b) 32

c) 28

d) all of the mentioned

104 - the full form of LCD is _____

a) Liquid Crystal Display

b) Liquid Crystalline Display

c) Logical Crystal Display

d) Logical Crystalline Display

(Attention) This questions are based on this slide
https://drive.google.com/file/d/1m5sji_E-fRpuMJ__FJRrVDsxKa3lrY7t/view?usp=sharing

Answers

Question	Answer
1	B
2	**A**
3	D
4	**B** **Slow →quik**
5	B
6	**B**
7	C
8	**B** **Anode→cathode**
9	C
10	**A**
11	D
12	**C**
13	A
14	**A**
15	A
16	**D**
17	B Electric and magnetic field
18	**B**
19	B
20	**B** **Opposite sides**
21	C

22	**A**
23	A
24	C
25	B Part of beam energy
26	A
27	A
28	B Greatest at the center of spot
29	C
30	B
31	D
32	B
33	A
34	C
35	B One row at a time from top to bottom
36	C
37	A
38	D
39	A
40	A
41	B Only in black and white systems
42	A
43	C
45	B 60 to 80
46	C
47	A
48	B
49	B 30FPS

50	C
51	A
52	C
53	A
54	C
55	B Depends on the number of lines
56	B
57	B
58	A
59	C
60	B
61	A
62	A
63	D
64	C
65	A
66	B
67	A
68	A
69	A
70	C
71	B
72	A
73	A
74	C
75	C
76	B
77	C
78	C

79	C
80	B
81	C
82	B
83	B
84	B
85	C
86	A
87	B
88	A
89	B
90	C
91	C
92	B
93	D
94	C
95	B
96	B
97	C
98	B
99	C
100	A
101	B
102	B
103	D
104	A

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