VIVA QUESTIONS

-Vishal Parashar

(IT evening 2nd year)

Circuit and Systems

"I am only sharing questions that i have been asked or have heard from other", a senior.

Mostly they ask from 2 port network about y, h and z parameter + intro to signals (Pulse, step, etc.)

1. H-parameter - equation, equivalent circuit, circuit diagrams for experiment

2. Z-parameter - conditions for reciprocity and superposition

3. In given circuit, apply Superposition Theorem

4. What is a Transformer?

5. Uses of variac other than Lab

1. What is a two port network..??

2. What are harmonics . And how and why does clipped sine wave forms.?

3. State millman 's theorem and give its limitations.

4. Tell something about Hurwitz Polynomials.

5. Define Fourier Theorem.

6. Differentiate between Fourier analysis and Fourier synthesis.

STLD

Viva Ques-

1. what is K-map?why is it used?show an example

2. Draw sequential logic using combinational logic

3. What is PLA and PAL?

4. What is Master-slave JK?Draw its truth table. Draw the circuit

5. Draw truth Table for different FFs

6. What is BCD,excess-3 code, gray code etc, their uses and properties?

7. What is TTL,RTL,DTL, their drawbacks, how can they be made better?

8. What is full adder,half adder and subtractor?

9. binary to grey code, excess 3 code... other conversions ..etc.

10. what are preset and clear.

11. what are synch. and asynchrounous counters..

12. decoder, encoder, multiplexer, demultiplexer, applications of demultiplexer, difference between decoder & demultiplexer

DATA STRUCTURE

1. Define Data Structure.

2. Differentiate b/w Trees and Graphs.

3. Application of Linked list.

4. Which kind of sorting method is better and why.?

5. I said "Quick sort" and explained my answer and then she said give worst case scenario's of the sorting method that you've talked about.

6. Write a program to Insert and Delete any element from a linked list from any position.

7. Define and give applications of AVL tree.

8) What is the difference between a deque, dequeue and a priority queue?

9) Is it possible to have virtual constructors or virtual destructors in C++ programming? Any why?

10) Why is C++ language not considered a pure object oriented programming language?

11) What is the meaning of mutable variables?

13.Differentiate between binary tree and binary search tree.

14.How can you implement a tree in an array. (write down the code for it).

15. What is pivot?

16. Discuss about merge sort (give the code also)

What i was asked..

Circuit and systems ->

1. is 3 port n/w possible, if yes then how many variables in 3 port n/w ?

2. Unit of A,B,C,D.

3. Which theorem uses non linear n/w ?

Data Structures ->

1. Applications of stack ?

2. Is binary search possible on linklist?

3. What are advantages of using postfix ?

CGMM

1. What is scan conversion?
A major task of the display processor is digitizing a picture definition given in an application program into a set of pixel-intensity values for storage in the frame buffer. This digitization process is called scan conversion.

2. Write the properties of video display devices?
Properties of video display devices are persistence,resolution, and aspect ratio.
3. What is rasterization?
The process of determining the appropriate pixels for representing picture or graphics object is known as rasterization.

4. Define Computer graphics.
Computer graphics remains one of the most existing and rapidly growing computer fields. Computer graphics maybe defined as a pictorial representation or graphical representation of objects in a computer.

5. Name any four input devices.
Four input devices are keyboard, mouse, image scanners,and trackball.

6. Write the two techniques for producing color displays with a CRT?
Beam penetration method, shadow mask method

7. What is vertical retrace of the electron beam?
In raster scan display, at the end of one frame, the electron beam returns to the left top corner of the screen to start the next frame.

8. Short notes on video controller?
Video controller is used to control the operation of the display device. A fixed area of the system is reserved for the frame buffer, and the video controller is given direct access to the frame buffer memory.

9. What is bitmap?
Some system has only one bit per pixel; the frame buffer is often referred to as bitmap.

10. Differentiate plasma panel display and thin film electroluminescent display?
In plasma panel display, the region between two glassplates is filled with neon gas. In thin film electroluminescent display, the region between two glasses plates are filled with phosphor, such as zinc sulphide doped with manganese.

11. What is resolution?
The maximum number of points that can be displayed without overlap on a CRT is referred to as the resolution.

12. What is horizontal retrace of the electron beam?
In raster scan display, the electron beam return to the left of the screen after refreshing each scan line, is called horizontal retrace of the electron beam.

13. What is filament?
In the CRT, heat is applied to the cathode by directing a current through a coil of wire, is called filament.

14. What is pixmap?
Some system has multiple bits per pixel, the frame buffer is often referred to as pix map.

15. Write the types of clipping?
Point clipping, line clipping, area clipping, text clipping and curve clipping.

16. What is meant by scan code?
When a key is pressed on the keyboard, the keyboard controller places a code carry to the key pressed into a part of the memory called as the keyboard buffer. This code is called as the scan code.

17. List out the merits and demerits of Penetration techniques?
The merits and demerits of the Penetration techniques areas follows. It is an inexpensive technique. It has only four colors. The quality of the picture is not good when it is compared to other techniques. It can display color scans in monitors. Poor limitation etc.

18. List out the merits and demerits of DVST?
The merits and demerits of direct view storage tubes[DVST] are as follows. It has a flat screen. Refreshing of screen is not required. Selective or part erasing of screen is not possible. It has poor contrast Performance is inferior to the refresh CRT.

19. What do you mean by emissive and non-emissive displays?
The emissive display converts electrical energy into light energy. The plasma panels, thin film electro-luminescent displays are the examples.The Non-emissive are optical effects to convert the sunlight or light from any other source to graphic form. Liquid crystal display is an example.

20. List out the merits and demerits of Plasma panel display?
Merits. Refreshing is not required. Produce a very steady image free of Flicker. Less bulky than a CRT.Demerits. Poor resolution of up to 60 d.p.i. It requires complex addressing and wiring. It is costlier than CRT.

21. What is persistence?
The time it takes the emitted light from the screen to decay one tenth of its original intensity is called as persistence.

22. What is Aspect ratio?
The ratio of vertical points to the horizontal points necessary to produce length of lines in both directions of the screen is called the Aspect ratio. Usually the aspect ratio is ¾.

23. What is the difference between impact and non-impactprinters?
Impact printer press formed character faces against an inked ribbon on to the paper. A line printer and dot-matrixprinter are examples.Non-impact printer and plotters use Laser techniques,inkjet sprays, Xerographic process, electrostatic methods and electro thermal methods to get images onto the papers. Examples are: Inkjet/Laser printers.

24. Define pixel?
Pixel is shortened forms of picture element. Each screenpoint is referred to as pixel or pel.

25. What is frame buffer?
Picture definition is stored in a memory area called frame buffer or refresh buffer.

26. Where the video controller is used?
A special purpose processor, which is used to control the operation of the display device, is known as video controller or display controller.

27. What is run length encoding?
Run length encoding is a compression technique used to store the intensity values in the frame buffer, which store search scan line as a set of integer pairs. One number each pair indicates an intensity value, and second number specifies the number of adjacent pixels on the scan line that are to have that intensity value.

28. What is point in the computer graphics system?
The point is a most basic graphical element & is completely defined by a pair of user coordinates (x, y).

29. Write short notes on lines?
A line is of infinite extent can be defined by an angle of slope q and one point on the line P=P(x,y). This can also be defined as y=mx+C where C is the Yintercept.

30. Define Circle?
Circle is defined by its center xc, yc and its radius in user coordinate units. The equation of the circle is (x-xc) + (yyc)= r2.

31. What are the various attributes of a line?
The line type, width and color are the attributes of the line.The line type include solid line, dashed lines, and dotted lines.

32. What is antialiasing?
The process of adjusting intensities of the pixels along theline to minimize the effect of aliasing is called antialiasing.

33. What is Transformation?
Transformation is the process of introducing changes in the shape size and orientation of the object using scaling rotation reflection shearing & translation etc.

34. What is translation?
Translation is the process of changing the position of an object in a straight-line path from one coordinate location to another. Every point (x , y) in the object must under go a displacement to (x|,y|). the transformation is:x| = x + tx ; y| = y+ty

35. What is rotation?
A 2-D rotation is done by repositioning the coordinates along a circular path, in the x-y plane by making an anglewith the axes. The transformation is given by:X| = r cos (q + f) and Y| = r sin (q + f).

36. What is scaling?
A 2-D rotation is done by repositioning the coordinates along a circular path, in the x-y plane by making an anglewith the axes. The transformation is given by:X| = r cos (q + f) and Y| = r sin (q + f).

37. What is shearing?
The shearing transformation actually slants the object along the X direction or the Y direction as required. ie; this transformation slants the shape of an object along a required plane.

38. What is reflection?
The reflection is actually the transformation that produces a mirror image of an object. For this use some angles and

lines of reflection.

39. What are the two classifications of shear transformation?
X shear, y shear.

40. A point (4,3) is rotated counterclockwise by an angle of 45°. Find the rotation matrix and the resultant point.

41. Name any three font editing tools.
ResEdit, FONTographer.

42. Differentiate serif and sans serif fonts.
Give one example Serif fonts has a little decoration at the end of the letter,but serif font has not. Times, new century schoolbook is the examples of serif fonts. Arial, potima are examples for sansserif fonts.

43. Distinguish between window port & view port?
A portion of a picture that is to be displayed by a window is known as window port. The display area of the part selected or the form in which the selected part is viewed is known as view port.

44. Define clipping?
Clipping is the method of cutting a graphics display to neatly fit a predefined graphics region or the view port.

45. What is the need of homogeneous coordinates?
To perform more than one transformation at a time, use homogeneous coordinates or matrixes. They reduce unwanted calculations intermediate steps saves time and memory and produce a sequence of transformations.

46. Distinguish between uniform scaling and differential scaling?
When the scaling factors sx and sy are assigned to the same value, a uniform scaling is produced that maintains relative object proportions. Unequal values for sx and sy result in a differential scaling that is often used in design application

47. What is fixed point scaling?
The location of a scaled object can be controlled by a position called the fixed point that is to remain unchanged after the scaling transformation.

48. What is Bezier Basis Function?
Bezier Basis functions are a set of polynomials, which can be used instead of the primitive polynomial basis, and have some useful properties for interactive curve design.

49. What is surface patch A single surface element can be defined as the surface traced out as two parameters (u, v) take all possible values between 0 and 1 in a two-parameter representation. Such a single surface element is known as a surface patch.

50. Define B-Spline curve?
A B-Spline curve is a set of piecewise(usually cubic)polynomial segments that pass close to a set of control points. However the curve does not pass through these control points, it only passes close to them.

51. What is a spline?
To produce a smooth curve through a designed set of points, a flexible strip called spline is used. Such a spline curve can be mathematically described with a piece wise cubic polynomial function whose first and second derivatives are continuous across various curve section.

52. What are the different ways of specifying spline curve?.
Using a set of boundary conditions that are imposed on the spline.. Using the state matrix that characteristics the spline. Using a set of blending functions that calculate the positions along the curve path by specifying combination of

geometric constraints on the curve

53. What are the important properties of Bezier Curve?.
It needs only four control points. It always passes through the first and last control points. The curve lies entirely within the convex half formed by four control points.

54. Define Projection?
The process of displaying 3D into a 2D display unit is known as projection. The projection transforms 3D objects into a 2D projection plane

55. What are the steps involved in 3D transformation?.
Modeling Transformation. Viewing Transformation. Projection Transformation Workstation Transformation

56. What do you mean by view plane?
A view plane is nothing but the film plane in camera which is positioned and oriented for a particular shot of the scene.

57. Define projection?
The process of converting the description of objects from world coordinates to viewing coordinates is known as projection

58. What you mean by parallel projection?
Parallel projection is one in which z coordinates is discarded and parallel lines from each vertex on the object are extended until they intersect the view plane.

59. What do you mean by Perspective projection?
Perspective projection is one in which the lines of projection are not parallel. Instead, they all converge at a single point.

60. What is Projection reference point?
In Perspective projection, the lines of projection are not parallel. Instead, they all converge at a single point.

61. Define computer graphics animation?
Computer graphics animation is the use of computer graphics equipment where the graphics output presentation dynamically changes in real time. This is often also called real time animation.

62. What is tweening?
It is the process, which is applicable to animation objects defined by a sequence of points, and that change shape from frame to frame.

63. Define frame?
One of the shape photographs that a film or video is made of is known as frame.

64. What is key frame?
One of the shape photographs that a film or video is made of the shape of an object is known initially and for a small no of other frames called key frame.
65. Define Random scan/Raster scan displays?
Random scan is a method in which the display is made by the electronic beam which is directed only to the points orpart of the screen where the picture is to be drawn.The Raster scan system is a scanning technique in which the electrons sweep from top to bottom and from left to right. The intensity is turned on or off to light and unlight the pixel.

Source: Techbits and slideshare & Compilation done by me from various sources