Aryan College

Computer Graphics

Unit I: **Graphics Hardware & Input Devices:**

1. Write the difference between keyboard and touch pad. (2017)
2. Describe various input devices. (2017)
3. What is image scanner? Explain various types of image scanners. (2017)
4. What is hand held scanner? (2016)
5. What is data tablet? (2016)
6. Draw a neat and clean and well labeled diagram of scanner. (2016)
7. What is digitizer? Explain its usage. (2016)
8. List the name of two input devices and two output devices. (2015)
9. In what way light pens are useful graphics devices? Explain. (2015)
10. What is input and output system of computer? (2014)
11. What is light pen? (2014)
12. Describe the various input and output devices of computer in detail. (2014)
13. List the difference between track ball and space ball. (2013)
14. What are the advantages of electrostatic plotters? Explain its functions. (2013)

Unit II: **Hard Copy Devices:**

1. Explain the working of dot matrix and inkjet printers. (2017)
2. What is the advantage of electrostatic plotter? Explain its function. (2017)
3. Explain Laser printer in detail. (2016)
4. What is plotter? (2015)
5. Discuss the use of image scanner. (2015)
6. What are the various hardcopy devices used for Interactive graphical purpose? Explain the working of Laser printer in brief. (2015)
7. What is non-impact printer? (2014)
8. What are functions of Laser Printer? (2017) (2013)

Unit III: **Video Display Devices:**

1. What is refresh rate? (2017)
2. Why is refresh CRT is called as refresh CRT? Why not CRT only? (2016)
3. What do you mean by persistence power in display devices? (2016)
4. Draw a neat & clean and well labeled diagram of CRT. (2016)
5. What is random scan display? (2015)
6. Explain the working of CRT. (2017) (2015) (2014) (2013)
7. What are the various methods used for colour image formation? (2015)
8. What is the need of CRT refreshing? (2015)
9. What are the basic methods of working of LCD? Also, explain the application of LCDs. (2015)
10. What is Resolution? (2014)
11. What is aspect ratio? (2017) (2014) (2013)
12. What is pixel? (2014) (2016)
13. What is Pixmap and Bitmap? (2014) (2013)
14. What is CRT? (2014)
15. What is the difference between random and raster scan display? (2014) (2013)
16. What is the difference between CRT and LCD monitor? (2014)
17. What is virtual reality? (2017) (2013)
18. What do you mean by high definition system? (2013)
19. What advantages do LCD and Plasma displays share over CRT? (2013)
20. In a raster system with resolution 2560 x 2048. How many pixels could be assessed per second by a display controller that refresh the screen at a rate of 60 frames per second? Also calculate access time per pixel in the system. (2013)

Unit IV: **Scan Conversion:**

1. Explain mid-point circle algorithm. Given diameter = 20. Draw a circle using mid-point algorithm. (2017)
2. Describe Bresenham's line drawing algorithm. Digitize a line with end points (21,11) & (28,13). (2017)

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3. Define circle. (2016)
4. Explain scan line generation algorithm. (2016)
5. Draw a line between two end points (2,1) and (5,7) using Bresenham's line algorithm. (2016)
6. Define an Ellipse. (2015)
7. What are the side effects of scanning? (2015)
8. Write steps to scan a circle by the general method. (2015)
9. Describe Bresenham's line algorithm in detail. (2015) (2014)
10. What do you mean by positioning constraints? State its various types and explain the utility of each graphical application. (2015)
11. Explain various area filling technique in detail. (2016) (2014)
12. What do you mean by character generation? (2016) (2013)
13. Write a Bresenham's line algorithm for line where |m|≤1. Digitize a line with end points (20,10) and (30,18). (2013)
14. Explain mid-point circle algorithm. Rasterize circle points using this algorithm for R=10 and (Xc, Yc) at (10,10). (2016) (2013)

Unit V: **2D Graphics:**
1. Write the condition of point clipping. (2017)
2. Write the application of co-ordinate system. (2017)
3. What do you understand by transformation? Explain rotation and scaling transformation with example. (2017)
4. What are homogeneous co-ordinates? (2016)
5. What do you mean by dimension? (2016)
6. What do you mean by window to viewport transformation? (2016)
7. Discuss clipping in detail. (2016)
8. What is translation? (2016) (2015) (2014)
9. What are coordinate transformations? (2015)
10. How a point displayed on the graphics scale? (2015)
11. Explain with the help of suitable example: Window and Viewport. (2015)
12. Explain the following with the help of suitable example: Line clipping and Text clipping. (2015)
13. What is clipping? (2014)
14. What is shearing? (2014) (2013)
15. Explain: Reflection and Line Clipping. (2014)
16. Explain: Polygon Clipping and Text Clipping. (2014)
17. Why are homogeneous co-ordinates required? (2013)
18. What is Inverse transformation? (2013)
19. Explain Cohen-Sutherland line clipping algorithm wit region code details. (2017) (2013)
20. Derive the following equation and in which situation this equation is used? (2013)
    T(Xr, Yr). R(θ). T(-Xr, -Yr) = R (T (Xr, Yr, θ)
21. Explain Sutherland-Hodgeman Polygon clipping algorithm. (2013)
22. Derive a formula to rotate a point by 0º. (2013)
23. Show that a reflection about the line y=-x is equivalent to a reflection relative to y-axis followed by a counter clock wise rotation of 90^0. (2013)

Extra:
1. What is Unit matrix? (2017)
2. What is Panning? (2017)
3. Write the difference image processing and computer graphics. (2017)
4. What is alert window? (2017)
5. If A =[{1,1,1},{2,5,7},{2,1,-1}] is a square matrix then find out its inverse matrix. (2017)
6. What is the application of computer graphics in the field of CAD design? (2016)
7. Explain with the help of suitable example: Inking and Painting. (2015)
8. What is buffering? (2015)
9. What are the applications of computer graphics? (2016) (2014) (2013)
10. What is the difference between diffuse and specular reflection? (2013)