

Question Bank template for Module 1 - Part A - 3 mark questions

Question No	Question	Mark	Bloom's taxonomy level	CO
1	1. Differentiate the aspect ratio and resolution of a raster scan display?	3	L2	CO1
	2. Distinguish between raster scan display and random scan display.	3	L2	CO1
	3. Draw the architecture diagram of raster scan display system.	3	L2	CO1
2	1. Justify the approach of using integer arithmetic in Bresenham's line drawing algorithm.	3	L2	CO2
	2. How 8-way symmetric points if (x,y) is a point on the circle with centre at origin.	3	L2	CO2
	3. Write the DDA line drawing algorithm.	3	L2	CO2
3	1. List out any 6 applications of computer graphics.	3	L1	CO1
	2. Write the midpoint circle drawing algorithm.	3	L1	CO2
	3. Write the Bresenham's line drawing algorithm..	3	L1	CO2
4	1. Consider a raster system with a resolution of 1024*1024. What is the size of the raster needed to store 4 bits per pixel? How much storage is needed if 8 bits per pixel are to be stored?	3	L3	CO2
	2. Consider a raster system with a resolution of 2560*2048. Determine the frame	3	L3	CO2

	buffer size (in bytes) needed for the system to store 12-bits per pixel. How much storage is required if 24-bits per pixel are to be stored?			
	3. Consider a raster system designed using an 8 inches $\times$ 10 inches screen with a resolution of 100 pixels per inch in each direction. What frame buffer size is required if 6 bits are stored per pixel in the buffer?	3	L3	CO2
5	1. Define the following terms :  1. Persistence.  2. Resolution.  3. Aspect ratio.	3	L1	CO2
	2. What are the advantages and disadvantages of the DDA algorithm?	3	L1	CO2
	3. Identify and mark 8-way symmetric points if (x,y) is a point on the circle with centre at origin.	3	L3	CO2
6	1. Rasterize the line segment from pixel coordinate (10,20) to (20,30) using DDA line drawing algorithm.	3	L3	CO2
	2. Rasterize the line segment from pixel coordinate (20, 10) and (30, 18) using	3	L3	CO2

	DDA line drawing algorithm.			
	3. Rasterize the line segment from pixel coordinate (7,4) and (2,7) using DDA line drawing algorithm.	3	L3	CO2

Question Bank template for Module 1 - Part B - 14 mark questions

Question No	Question	Mark	Bloom's Taxonomy level	CO
7	1.a) Explain the architecture of the raster scan system with a suitable diagram and explain its working principle.	6	L2	CO1
	1.b) Rasterize the line segment from pixel coordinate (1, 1) to (8, 5) using Bresenham's line drawing algorithm	8	L3	
	2.a) Scan convert the line segment with endpoints (0,0) and (10,5) using DDA line drawing algorithm. Find out and discuss the advantages and disadvantages of this method.	10	L3	
	2.b) Describe the working of a beam penetration CRT.	4	L2	
	3.a) Write Midpoint circle drawing algorithm and use it to plot a circle with radius=20 and center is (50,30).	10	L3	CO2
	3.b) Draw the architecture of random scan display system and explain its working	4	L2	CO2

	principle.			
8	1.a) Derive the initial decision parameter of Bresenham's line drawing algorithm and use the algorithm to rasterize a line with endpoints (2,2) and (10,10).	10	L3	CO2
	1.b) Explain the working principle of color CRT monitors with suitable illustrations.	4	L2	CO2
	2.a) Explain the working of direct view storage tubes(DVST).	7	L2	CO2
	2.b) Explain the working of a delta-delta shadow mask CRT.	7	L2	CO2
	3.a) What is the role of a display controller in a raster scan display system? Explain.	7	L2	CO2
	3.b) Explain the functioning of a random scan display system.	7	L2	CO2
9	1.a) Derive the initial decision parameter of Bresenham's line drawing algorithm and use the algorithm to rasterize a line with endpoints (1,1) and (12,14).	7	L3	CO2
	1.b) Using the Midpoint circle drawing algorithm, find the pixel locations in the first octant of a circle. Assume that the centre and radius of the circle are (30, 15) and 10 respectively.	7	L3	CO2
	2.a) Rasterize the line segment from pixel coordinate(1,1) to (8,5) using Bresenham's line drawing algorithm.	7	L3	CO2
	2.b) Use the DDA line drawing algorithm to find the coordinate along the line joining the pixel positions (5,12) and (15,20).	7	L3	CO2

	3.a) Rasterize the line with endpoints (2,3) and (5,8) using Bresenham's line drawing algorithm.	7	L3	CO2
	3.b) Using the Midpoint circle drawing algorithm, find the pixel locations in the first octant of a circle. Assume that the centre and radius of the circle are (40,20) and 15 respectively.	7	L3	CO2
10	1.a) Describe in detail the basic video controller refresh operation used in interactive raster graphics systems.		L2	CO1
	1.b) Explain any two basic techniques used for producing color displays with a CRT.	7	L2	CO1
	2.a) With a neat diagram describe the working of a CRT.	7	L2	CO1
	2.b) With a suitable figure, describe the shadow masking techniques in CRT.	7	L2	CO1
	3.a) Describe the fundamental process of video controller refresh operations in interactive raster graphics systems.	7	L2	CO1
	3.b) Explain two fundamental techniques utilised in generating color displays with a Cathode Ray Tube (CRT).	7	L2	CO1
11	1.a) Using the Bresenham's circle drawing algorithm, find out the first quadrant point of a circle from $x=0$ to $x=y$ where $r=8$ . Also draw the complete circle using the same.	7	L3	CO2
	1 b) Using DDA line drawing algorithm, plot the line with endpoints (20,15) and (34,20).		L3	CO2
	2.a) Using DDA line drawing algorithm, plot the line with endpoints (1,1) and (8,7).	7	L3	CO2

	2.b) Using Bresenham's line drawing algorithm, plot the line with endpoints (20,15) and (34,20).	7	L3	CO2
	3.a) Explain the midpoint circle drawing algorithm. Find the pixel locations approximately the first octant of a circle having centre(10,13) and radius of 5 units using this algorithm.	14	L2	CO2
12	1.a) Using the Bresenham's circle drawing algorithm, find out the first quadrant point of a circle from $x=0$ to $x=y$ where $r=7$ . Also draw the complete circle using the same.	7	L3	CO2
	1.b) Using Bresenham's line drawing algorithm, plot the line with endpoints (21,16) and (35,21).	7	L3	CO2
	2.a) Using the Bresenham's circle drawing algorithm, find out the first quadrant point of a circle from $x=0$ to $x=y$ where $r=9$ . Also draw the complete circle using the same.	7	L3	CO2
	2.b) Using Bresenham's line drawing algorithm, plot the line with endpoints (22,17) and (28,18).	7	L3	CO2
	3.a) Using the Bresenham's circle drawing algorithm, find out the first quadrant point of a circle from $x=0$ to $x=y$ where $r=10$ . Also draw the complete circle using the same.	7	L3	CO2
	3.b) Using Bresenham's line drawing algorithm, plot the line with endpoints (18,17) and (26,19).	7	L3	CO2