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Question Paper Code: U5201

B.E./B.Tech. DEGREE EXAMINATION, APRIL 2024

Fifth Semester

Computer Science Engineering

21UCS501 GRAPHICS AND MULTIMEDIA

(Regulation 2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1. Difference between DDA and Bresenham's Algorithm. CO1- U
2. Define clipping and explain any two types of Clipping. CO1- U
3. Show that reflection is equivalent to 180° rotation. CO1- U
4. Derive the viewing transformation matrix. CO1- U
5. How do you represent sphere in three dimensions? CO1- U
6. Differentiate interpolation and approximation spline. CO1- U
7. Differentiate flat and smooth shading. CO1- U
8. Define rendering. CO1- U
9. What are the challenges to access the multimedia databases? CO1- U
10. Mention some of the image formats used in multimedia. CO1- U

PART – B (5 x 16= 80 Marks)

11. (a) Apply the Bresenham's Line drawing algorithm and trace the algorithm for the given points (2,1) to (10,12). Also, list the advantages of Bresenham's Line drawing algorithm. CO2-App (16)
Or
(b) Use and explain the DDA line algorithm to digitize the line with end points (2,3) & (12,8). CO2-App (16)

12. (a) Use the concept of 2D Transformation to Translate a polygon with coordinates A(2,5),B(7,10),C(0,2) by 3 units and 4 unit along x and y axis respectively .also, perform rotation by 180 degree anticlockwise direction. CO2-App (16)
- Or
- (b) Use the Cohen Sutherland algorithm to clip line p1(70, 20) and p2(100,10) against a window lower left-hand corner (50,10) and upper right-hand corner (80,40). CO2-App (16)
13. (a) With suitable examples describe 3D transformations CO1-U (16)
- (i) Rotation
(ii) Translation.
(iii) Scaling
- Or
- (b) Discuss the various visible surface detection methods in detail. CO1-U (16)
14. (a) Explain about Halftone approximation and Dithering techniques in detail CO1-U (16)
- Or
- (b) Illustrate the basic color models in detail. CO1-U (16)
15. (a) Explain different architecture for Content organization in multimedia database. CO1-U (16)
- Or
- (b) Write in detail about JPEG Compression standard. CO1-U (16)