BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)

B. Tech. Sem - IV COMPUTER SCIENCE & ENGINEERING : WINTER : 2024

SUBJECT: COMPUTER GRAPHICS & MULTIMEDIA

Day : Monday | Time : 02:30 PM-05:30 PM

Date : 25/11/2024 | **W-25583-2024** | Max. Marks : 60

N.B.

1) All questions are **COMPULSORY.**
2) Figures to the **RIGHT** indicate **FULL** marks.
3) Assume suitable data **WHEREVER** necessary.
4) Draw neat labeled diagrams **WHEREVER** necessary.
5) Answer to both the sections should be written in **SAME** answer book.

Q.1 List the advantages of Bresenham's line drawing algorithm? Bresenham's line drawing algorithm is considered as most efficient algorithm when compare with DDA line drawing algorithm. State the reason and justify it. **(10)**

OR

Describe the steps in DDA line drawing. Creating line from (10, 12) to (15, 15) on the raster scan using Bresenham's straight line algorithm. **(10)**

Q.2 Define 2 D transformation? Find out the new coordinates of the triangle A (1, 1), B (4,3), C(0,1) after it has been magnified to double its size. **(10)**

OR

Describe about composite transformation in general and describe the following with matrix representation. **(10)**

i) Two Successive Translation
ii) Two Successive Rotation
iii) General Pivot Point Rotation
iv) General Fixed-Point Scaling

Q.3 Describe Rotation in 3D transformation. Derive transformation matrix for rotating any object about and axis passing through the origin and point(10,0, 10) **(10)**

OR

Determine blending function for uniform periodic B-Spine curve for n=4, d=4. **(10)**

Q.4 Compare and contrast between RGB and CMY models and HSV model. **(10)**

OR

Discuss about properties of Light. Interpret light sources in detail. **(10)**

Q.5 Describe multimedia system architecture of multimedia workstation environment. Also, discuss, multimedia application in detail. **(10)**

OR

Derive the issues involved in multimedia storage and retrieval. **(10)**

Q.6 How would you address the requirements for dynamic customization of display resolution to suit the destination system on which an object is being rendered? What happens if the resolution of the display device is higher than the stored object? **(10)**

OR

Show the features incorporated in any one of the integrated document management system. **(10)**

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