BACHELOR OF TECHNOLOGY (C.B.C.S.) (2020 COURSE)
B.Tech.Sem - IV CS&E :SUMMER- 2022
SUBJECT : COMPUTER GRAPHICS & MULTIMEDIA

Day : Monday
Date : 20-06-2022

S-24305-2022

Time : 10:00 AM-01:00 PM
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) Use of non-programmable calculator is allowed.

Q.1 Define Raster Scan System. List their characteristics. Consider three different raster systems with resolutions of 640 by 400, 1280 by 1024 and 2560 by 2048. What size frame buffer (in bytes) is needed for each of these systems to store 12 bits per pixel? How much storage is required for each system if 2.4 bits per pixel are to be stored? **(10)**

OR

Q.1 Describe the role of pixels and frame buffer in graphics device. Also, describe steps in the incremental line drawing algorithm. **(10)**

Q.2 Describe the Sutherland Hodgeman Polygon clipping algorithm with suitable example. **(10)**

OR

Q.2 Describe with neat diagram of processing the vertices of the polygon through the boundary clipping pipeline using Sutherland Hodgeman Polygon clipping algorithm. **(10)**

Q.3 Give 3-D transformation matrix for: **(10)**

i) Translation **ii)** Scaling **iii)** Rotation

OR

Q.3 Evaluate the 3 D transformation matrix rotation about an arbitrary axis and arbitrary plane. **(10)**

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

OR

Q.4 Discuss about properties of light. Interpret sources in detail. **(10)**

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

OR

Q.5 Derive the issues involved in multimedia storage and retrieval. **(10)**

Q.6 Illustrate about distributed multimedia systems. Explain the various types of database replication techniques used in handling very large distributed database. **(10)**

OR

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 resolution of the stored object. **(10)**

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