

BACHELOR OF TECHNOLOGY (C.B.C.S.) (2020 COURSE)
B.Tech.Sem - IV Computer Science & Engineering : WINTER- 2022
SUBJECT : COMPUTER GRAPHICS & MULTIMEDIA

Day : Monday

Time : 02:30 PM-05:30 PM

Date : 28-11-2022

W-24305-2022

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 Write working principles of Raster Scan System an RGB raster system is to be designed using an 8 inch by 10 inch screen with a resolution of 100 pixels per inch in each direction. If we want to store 6 per pixel in the frame buffer, how much storage (in bytes) do we need for the frame buffer? (10)

OR

Q.1 Describe the steps in DDA line drawing algorithm. Creating line from (10, 12) to (15, 15) on the raster scan using Bresenham's straight line algorithm. (10)

Q.2 Define point clipping and line clipping. A polygon has 4 vertices located at A(20, 10), B(60, 10), C(60, 30), D(20, 30) create a transformation matrix to double the size of the polygon with point A located at the same place. (10)

OR

Q.2 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 Define necessity of 3D clipping algorithm. Also explain midpoint subdivision for 3D clipping. (10)

OR

Q.3 Determine blending function for uniform periodic B-spline curve for $n = 4$, $d = 4$. (10)

Q.4 Illustrate the basic illumination model in detail. Also write note on Ambient illumination in detail. (10)

OR

Q.4 Describe different light sources models with illustration. Also write short note on diffuse reflection and specular reflection. (10)

Q.5 Discuss the types of compression available in multimedia. Explain two types of compression technology. (10)

OR

Q.5 Discuss the types of multimedia authoring system and list the main attribute, benefits and drawbacks of authoring system. (10)

Q.6 Show the feature facilities incorporated in any one of the integrated document management system. (10)

OR

Q.6 Describe elements of multimedia system. (10)