

5E1354

Roll No.

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5E1354
B. Tech. V - Sem. (Main / Back) Exam., Feb.-March - 2021
Computer Science & Engineering
5CS4 - 04 Computer Graphics & Multimedia
Common for CS, IT

Time: 2 Hours

Maximum Marks: 82
Min. Passing Marks: 29

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Instructions to Candidates:

Attempt all ten questions from Part A, four questions out of seven questions from Part B and two questions out of five from Part C.

Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.

*Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)*

1. NIL

2. NIL

PART - A

(Answer should be given up to 25 words only)

[10×2=20]

All questions are compulsory

- Q.1 What is specular reflection?
- Q.2 Define Gray Scale.
- Q.3 What is Transformations Routine?
- Q.4 Define Resolution.
- Q.5 What does text clipping mean? Explain.
- Q.6 What is morphing?
- Q.7 What is Defuse reflection?
- Q.8 Define surface rendering.
- Q.9 Define Interlacing.
- Q.10 What is Animation?

PART - B

(Analytical/Problem solving questions)

[4×8=32]

Attempt any four questions

- Q.1 Write short note on: Anti-Aliasing technique?
- Q.2 Explain Cohen – Sutherland line clipping Algorithm with region code in detail.
- Q.3 Differentiate between boundary fill and flood fill techniques.
- Q.4 Write a routine to convert RGB color model to HSV color model.
- Q.5 Discuss properties of Bezier curves.
- Q.6 Describe Phong Shading in detail.
- Q.7 What is Ray Tracing? Explain basic ray tracing algorithm.

PART - C

(Descriptive/Analytical/Problem Solving/Design Questions)

[2×15=30]

Attempt any two questions

- Q.1 In a Raster System with resolution 2560×2048 . How many pixels could be accessed per second by a display controller that refresh that Screen at a rate of 60 frames per second. Also calculate access time per pixel in the system.
- Q.2 During area filling one start with a point inside the program region and point it outward towards boundary. Which fill algorithm is this? Explain it showing how 8 - connected approach fills complex figures.
- Q.3 What is homogeneous coordinate? Discuss the composite transformation matrices for two successive translation and scaling.
- Q.4 What is the use of compression technique in computer graphics? Explain JPEG and MPEG in detail.
- Q.5 Explain Halftone patterns and Dithering techniques in detail.