



CBGS SCHEME

21CS63

Sixth Semester B.E./B.Tech. Degree Examination, June / July 2026

Computer Graphics and Fundamentals of Image Processing

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. What is computer graphics? Illustrate the applications of computer graphics. (10 Marks)
- b. With a neat diagram, explain the architecture of a raster display system with integrated display processor. (10 Marks)

OR

- 2 a. Using Bresenham's line drawing algorithm digitize the line with end points (20, 10) to (30, 18). (10 Marks)
- b. List and explain various open GL primitive and attribute functions. (10 Marks)

Module-2

- 3 a. Demonstrate the basic 2D transformation in 2D homogeneous coordinate system with examples. (10 Marks)
- b. Prove that two successive translations are additive. (10 Marks)

OR

- 4 a. Illustrate raster method for geometric transformation. (10 Marks)
- b. List and explain all 3D geometric transformation. (10 Marks)

Module-3

- 5 a. Illustrate the different logical classification of input devices. (10 Marks)
- b. Explain the following :
 - i) Request mode
 - ii) Sample mode
 - iii) Event mode(10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg, 42+8 = 50, will be treated as malpractice.

OR

- 6 a. Explain the following with suitable Open GL function using code snippet.
 i) GLUT mouse function
 ii) GLUT keyboard function (10 Marks)
- b. Explain different Open GL Menu function. (10 Marks)

Module-4

- 7 a. What is Image processing? Explain image processing and related fields. (10 Marks)
- b. List the different types of images based on nature, attribute, color, dimensions and data type. (10 Marks)

OR

- 8 a. Explain different types of interpolation techniques. (10 Marks)
- b. Define Entropy. Calculate entropy for the symbols.

Symbols	1	2	3	4	5
Probability	0.4	0.3	0.1	0.1	0.1

(10 Marks)

Module-5

- 9 a. Explain the different types of image segmentation algorithm. (10 Marks)
- b. With a neat diagram, explain different stages in edge detection. (10 Marks)

OR

- 10 a. Explain Canny Edge Detection Algorithm. (10 Marks)
- b. Explain different types of Edge detection algorithm. (10 Marks)

* * * * *