

2022
B.A./B.Sc.
Sixth Semester
CORE – 14
COMPUTER SCIENCE
Course Code: CSC 6.21
(Computer Graphics)

Total Mark: 70

Pass Mark: 28

Time: 3 hours

Answer five questions, taking one from each unit.

UNIT-I

1. (a) What is graphics in computer? List the applications of computer graphics. 1+5=6
(b) Explain any four graphics input devices. 8
2. (a) Define pixel? Explain interactive and non-interactive computer graphics. 1+5=6
(b) Explain any four graphics output devices. 8

UNIT-II

3. (a) Explain raster scan in detail. 8
(b) Explain any six common graphics file formats. 6
4. (a) Explain random scan in detail. 8
(b) What do you mean by scan conversion? List some objects that can be scan converted. List the advantages of developing algorithm for scan conversion. 1+2+3=6

UNIT-III

5. (a) Write the steps to define a circle using polar coordinates. 7

- (b) Find all the intermediate points of a line with initial point (2,3) and ending point (6,5) using DDA. 7
6. (a) What is Bresenham's line algorithm? Write the steps to scan convert a line using Bresenham's line algorithm. 1+6=7
- (b) Given a circle C with radius 10 and center coordinates (1, 4), apply the translation with distance 5 towards X axis and 1 towards Y axis. Obtain the new coordinates of C without changing its radius. 7

UNIT-IV

7. (a) What is geometric modelling and why is it needed? 5
- (b) What is a curve? Explain the various types of curves. 1+8=9
8. (a) Explain surface modelling and list its advantages and disadvantages. 6
- (b) List and explain the various methods for creating solid models. 8

UNIT-V

9. (a) Explain additive and subtractive color model in computer graphics. 4
- (b) Define the following terms: morphing, wrapping, tweening and panning. 4
- (c) What do you mean by hidden surface removal? Explain the types of hidden surface detection algorithm. 1+5=6
10. (a) Define shading. What is color palette? 1+1=2
- (b) What is coherence? Explain any five types of coherence. 1+5=6
- (c) What is an animation? What are the applications of animation? 1+5=6