

**2023**  
**B.A./B.Sc.**  
**Sixth Semester**  
CORE – 14  
**COMPUTER SCIENCE**  
*Course Code: CSC 6.21*  
(Computer Graphics)

*Total Mark: 70*  
*Time: 3 hours*

*Pass Mark: 28*

*Answer five questions, taking one from each unit.*

**UNIT-I**

1. (a) What are graphics? List and explain any four applications of computer graphics. 2+4=6  
(b) Explain any two graphics input and two graphics output devices. 8
2. (a) List and explain any five graphics file extension. 5  
(b) Explain CRT, DVST and flat panel display in detail. 9

**UNIT-II**

3. (a) Explain DDA line drawing algorithm. 6  
(b) Given the centre point coordinates (0,0) and radius as 8, generate all the points to form a circle using midpoint circle drawing algorithm. 8
4. (a) Differentiate between raster and random scan. 4  
(b) Given a line with starting coordinate (4,6) and ending coordinate (8,11), plot all the points using Bresenham's line drawing algorithm. 5  
(c) Explain the algorithm to define a circle using polynomial method. 5

**UNIT-III**

5. (a) Write a note on scaling and shearing in 2D transformation. 6  
(b) Given a 3D object with coordinate points A(0,3,1), B(3,3,2), C(3,0,0), D(0,0,0). Apply the translation with the distance 1 towards X axis, 1 towards Y axis and 2 towards Z axis and obtain the new coordinates of the object. 8

6. (a) Explain 3D reflection in detail. 5  
(b) Write a note on 2D translation? Given a square object with coordinate points A(0,3), B(3,3), C(3,0), D(0,0). Apply the scaling parameter 2 towards X axis and 3 towards Y axis and obtain the new coordinates of the object. 3+6=9

#### UNIT-IV

7. (a) What is modelling in computer graphics? 2  
(b) Explain constructive solid geometry (CSG)? List the advantages and disadvantages of CSG. 2+4=6  
(c) What is a curve? Write a note on Bezier curve. 1+5=6
8. (a) Explain surface modelling and solid modelling in detail. 14

#### UNIT-V

9. (a) Write a note on colour lookup table? 4  
(b) What do you mean by hidden surface? Explain the types of hidden surface detection algorithm. 1+4=5  
(c) What is animation? List the applications of animation. 1+4=5
10. (a) Explain the animation functions. 7  
(b) What is colour model? List and explain the types of colour model. 1+6=7
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