

TDC Even Semester Exam., 2019

COMPUTER SCIENCE

(Honours)

(4th Semester)

Course No. : BCSH-401

(**Computer Graphics**)

Full Marks : 35

Pass Marks : 12

Time : 2 hours

*The figures in the margin indicate full marks
for the questions*

Answer **five** questions, taking **one**
from each Unit

UNIT—I

1. (a) Discuss the working principle of Cathode Ray Tube (CRT) monitor with a neat diagram. 5
- (b) If an image has a height of 2 2 inches and an aspect ratio of 1.5, what is its width? 2

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(Turn Over)

2. (a) Compare the structures of raster scan and random scan systems. 4
- (b) Define the following : 3
- (i) Persistence
- (ii) Pixel
- (iii) Morphing

UNIT—II

3. Illustrate the Bresenham's circle drawing algorithm with one example. 7
4. (a) Define Anti-aliasing. 2
- (b) Explain 4-way and 8-way neighbour used in region filling algorithm. 5

UNIT—III

5. (a) Perform a 45° rotation on triangle A (0, 0), B (1, 1), C (5, 2)
- (i) about the origin
- (ii) about P(1, 1) 5
- (b) What is clipping? Give one example. 2
6. What is homogeneous coordinate system? Work out the 2D transformation in the homogeneous coordinate system. 7

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(Continued)

(3)

UNIT—IV

7. (a) Explain spline curve. 3
(b) Describe 3D viewing technology. 4
8. (a) Derive the 3D rotational matrices for X-axis, Y-axis and Z-axis. 3
(b) Write short notes on quadtree and octree. 4

UNIT—V

9. (a) Write down the steps of morphing. How does number of frames help to perform better morphing? 2+1=3
(b) Compare graphics and animations. 4
10. (a) Describe the blinking scenario in flash file. 3
(b) Write a short note on animation film. 4
