



**2023/TDC(CBCS)/EVEN/SEM/
CACCC-402T/066**

TDC (CBCS) Even Semester Exam., 2023

COMPUTER APPLICATIONS

(4th Semester)

Course No. : CACCC-402T

(Computer Graphics)

Full Marks : 50

Pass Marks : 20

Time : 3 hours

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

SECTION—A

Answer any *ten* of the following questions : $2 \times 10 = 20$

1. Define pixel.
2. What is resolution? What do you mean by resolution 600×800 ?



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3. What are vertical and horizontal retrace time?
4. What is clipping?
5. What do you mean by window to viewport transformation?
6. What is homogenous coordinates?
7. What is B-spline curve?
8. What do you mean by quadratic surface?
9. Describe spline interpolation in brief.
10. What is 3-D viewing pipeline?
11. What is projection?
12. What do you mean by 3-D transformation?
13. Draw the RGB color model.
14. What is morphing?
15. Explain CMY model in brief.

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(Continued)

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SECTION—B

Answer any *five* of the following questions : 6×5=30

16. Illustrate the raster scan technique of display.
17. Trace a line segment from (20, 10) to (30, 18) using Bresenham's line drawing algorithm.
18. Discuss 2-D transformations.
19. Illustrate Cohen-Sutherland line-clipping algorithm.
20. Explain 3-D viewing. How does it differ from 2-D viewing?
21. What are quadtree and octree? Derive 3-D rotational matrices for *x*-axis, *y*-axis and *z*-axis.
22. What is Bezier curve? How is it constructed? Write the properties of Bezier curve.
23. Describe 3-D object representation techniques.

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(Turn Over)



24. Describe back-face detection method.
25. Illustrate different illumination methods in computer graphics.
