

Total number of printed pages-3

3 (Sem-6/CBCS) CSC HC 2

2023

COMPUTER SCIENCE

(Honours Core)

Paper : CSC-HC-6026

(Computer Graphics)

Full Marks : 60

Time : Three hours

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

1. Answer **any seven** of the following questions : 1×7=7
- (i) Name *any two* output devices used for graphics hardware.
 - (ii) What is CMY color model ?
 - (iii) What is vanishing point ?
 - (iv) Name *any two* properties of the Bézier curve.
 - (v) What is Hermite curve ?

Contd.

(vi) What is meant by resolution of a video display unit ?

(vii) Name *two* types of parallel projections.

(viii) What is line clipping ?

2. Answer the following questions : $2 \times 4 = 8$

(i) What is the fundamental difference in the method of monochrome CRT and a color CRT.

(ii) Explain briefly the A-buffer method.

(iii) What is clipping ? Name *two* ways of performing text clipping.

(iv) What is meant by ambient light ?

3. Answer the following questions : **(any three)**
 $5 \times 3 = 15$

(i) Describe the random/vector display system with the help of a neat diagram.

(ii) Give the homogeneous co-ordinate for translation, rotation, and scaling.

(iii) Differentiate between parallel and perspective projection.

(iv) Explain the depth buffer method (or z-buffer method) briefly.

(v) What is diffuse reflection ?

4. Answer the questions as desired :

(any three)

$10 \times 3 = 30$

(i) Explain the Bresenham's line drawing algorithm with its advantages and disadvantages.

(ii) Explain the midpoint ellipse algorithm.

(iii) What is text clipping ? Briefly explain the *three* ways of text clipping with the help of necessary diagram(s).

(iv) Explain the scan-line polygon-fill algorithm with the help of a neat diagram.

(v) Explain 2-D translation, rotation, and scaling with the help of examples.

(vi) Describe the specular reflection and the Phong specular reflection model.