



**K. K. Wagh Institute of Engineering Education & Research, Nashik**  
(An Autonomous Institute From A.Y. 2022-23)

WINTER-2025	
Exam Seat No.:	
Academic Year:2025-2026	Semester:IV
Class:SY IT	Program:B.Tech
Branch Code:INT	Pattern:2023
Name of Course: Computer Graphics	Course Code:2308213
Max. Marks:60	Duration:2.30 Hrs.

**Instructions:** Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.

1. This question paper contains 2 page(s).
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.

**Marks CO**

**Question No. 1**

- 1a) Identify the major applications of Computer Graphics. (6) CO1, CO6

**Question No. 2**

- 2a) Explain the concept of Rotation and Scaling in 3D Transformation. (6) CO4

**Question No. 3**

- 3a) Explain the different clipping methods in Computer Graphics. (5) CO2

**OR**

- 3b) Describe the concept of the Back Face Removal Algorithm. (5) CO2

- 3c) Explain Liang-Barsky Line Clipping Algorithm. (5) CO2

**OR**

- 3d) Explain Z-Buffer Algorithm. (5) CO2

- 3e) Consider a clipping window with  $(X_{min}, Y_{min}=20,20)$  &  $(X_{max}, Y_{max}= 80,80)$ . A line Segment is given with end points  $(X_1,Y_1=10,90)$  &  $(X_2,Y_2= 90,100)$ . Solv using cohen Sutherland line drawing algorithm. (6) CO2

**OR**

- 3f) Clip the line segment A  $(-4, 2)$  to B  $(-1, 7)$  against the window  $(-3, 1)$  to  $(2, 6)$  using the Midpoint Subdivision Line Clipping Algorithm and find the visible portion. (6) CO2

**Question No. 4**

- 4a) Describe the process of Phong Shading in Computer Graphics. (5) CO3

**OR**

- 4b) Explain the different types of Illumination Models. (5) CO3

- 4c) Explain the concept of Gouraud Shading in Computer Graphics. (5) CO3

**OR**

- 4d) Describe the various Color Models used in Computer Graphics. (5) CO3  
4e) Explain the limitations of different color models in computer graphics. (6) CO3

**OR**

- 4f) Discuss Advantages and Disadvantages of Constant-Intensity Shading. (6) CO3

**Question No. 5**

- 5a) Describe Parametric Curves used in Computer Graphics. (5) CO5

**OR**

- 5b) Explain the concept of Fractals in Computer Graphics. (5) CO5  
5c) Discuss the concept of curves in Computer Graphics with examples. (5) CO5

**OR**

- 5d) Explain the techniques commonly used in Computer Animation. (5) CO5  
5e) Explain the purpose of the Panning Animation Function. (6) CO5

**OR**

- 5f) Explain the various types of Fractals and describe each briefly. (6) CO5

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