



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

SUMMER-2024	
Exam Seat No.:	
Academic Year:2023-2024	Semester:III
Class:SY	Program:B.Tech
Branch Code:COM/CSD	Pattern:2022
Name of Course:Computer Graphics	Course Code:COM222002
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.

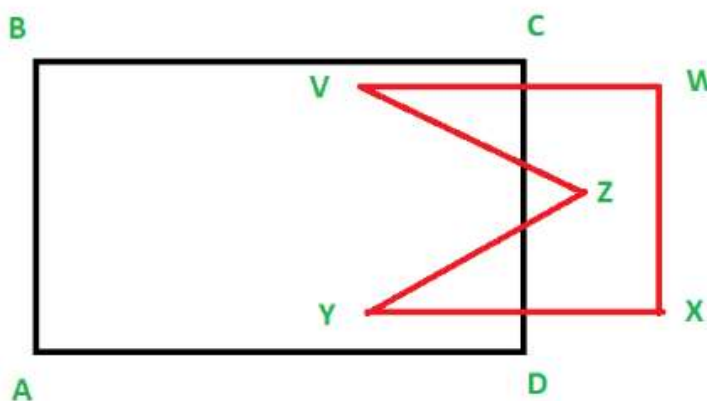
1. This question paper contains 3 pages.
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the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

Question No. 1 Attempt following Question

- 1 Compare Bresenham and DDA line drawing algorithm. (6) CO1
Draw a line from P1(1,1) to P2(5,9) using DDA

Question No. 2 Attempt following Question

- 2 Using Weiler Atherton Polygon Clipping algorithm, clip the above polygon. (6) CO2



Question No. 3 Attempt following Question

- 3.a) Explain the basic transformation techniques in 2D and 3D Graphics. (6) CO3
i) Scaling ii) Rotation

3.b) A homogenous coordinate point $p(3,2,1)$ translated in x, y, z by $-2, -2, -2$ units respectively, followed by rotation 60 degree about x axis. Find final position of point (6) CO3

3.c) Translate an object ABC, where A $(0,3,6)$, B $(4,5,9)$, C $(3,4,8)$. $T_x=3$, $T_y=2$, $T_z=4$ (5) CO3

OR

3.d) 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. (5) CO3

3.e) What is parallel and perspective projection? Explain with diagram (5) CO3

OR

3.f) Explain the terms i) Axonometric Projection ii) View- Plane iii) Projector iv) Triometric Projection v) Center of Projection (5) CO3

Question No. 4 Attempt following Question

4.a) Explain the differences between Object Space Method and Image Space Method. Give an example (6) CO4

OR

4.b) Define Color Gamut. Explain CIE Chromaticity diagram. (6) CO4

4.c) Explain RGB and CMY color models with figures? (5) CO4

OR

4.d) Explain the terms i) Luminance ii) Chrominance iii) Saturation iv) Dominant Wavelength v) Hue (5) CO4

4.e) Explain Painters Algorithm with examples (5) CO4

OR

4.f) Explain Depth Buffer Algorithms with examples (5) CO4

Question No. 5 Attempt following Question

5.a) What are the steps involved in construction of a snowflake? Explain with an example (6) CO5

OR

5.b) What are fractals? What are its applications? (6) CO5

5.c) Explain blending function for B-spline curve. (5) CO5

OR

5.d) What are the differences between Bezier Curve and B-Spline Curve? (5) CO5

5.e) Explain Hilbert's curve with an example (5) CO5

OR

5.f) What are 3-point Bezier curve and 4-point Bezier curve?

(5) CO5

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