



Seat No. : \_\_\_\_\_

**XW-119**

**April-2013**

**Five Years M.Sc. (CA & IT) Integrated (K.S.)**

**T.Y. M.Sc.**

**302 Computer Graphics**

**Time : 3 Hours]**

**[Max. Marks : 100**

- Instructions :**
- (1) Attempt **all** questions.
  - (2) Make suitable assumptions wherever necessary.
  - (3) Figures to the right indicate full marks.

1. Explain the following terms : (any **ten**) **20**

- (1) Aspect Ratio.
- (2) Resolution.
- (3) Geometric Primitives.
- (4) View port.
- (5) Vanishing Point.
- (6) Exploded and Cutway views.
- (7) Data Visualization.
- (8) Frame Buffer.
- (9) Normalize Device Coordinate.
- (10) Composite Transformation.
- (11) Stereoscopic views.
- (12) Perspective Projection.

2. Answer the following : (any **four**) **20**

- (1) Write note on application of Computer Graphics.
- (2) Explain basic design and operation of Cathode Ray Tube.
- (3) Explain about Flat Panel display. Describe its categories.
- (4) Write Bresenham's line drawing algorithm. List advantages and disadvantages of Bresenham's line drawing algorithm.
- (5) Explain attributes of Point, Line and Fill area.

3. Answer the following : (any **five**) **20**
- (1) Difference between Random Scan and Raster Scan display.
  - (2) Explain Polygon types and use of Polygon table.
  - (3) Explain two dimensional viewing transformation pipeline.
  - (4) What is homogeneous coordinates ? Explain its importance in Graphics.
  - (5) Digitize the Bresenham's line drawing algorithm for given end points (20, 10) and (30, 18).
  - (6) Explain about Depth cueing and surface rendering.
4. Answer the following : (any **four**) **20**
- (1) Explain Boundaryfill algorithm. How it differs from Floodfill algorithm ?
  - (2) Explain about Window to viewport Transformation.
  - (3) Explain about inside-outside test.
  - (4) What is projection ? Explain Parallel projection in details.
  - (5) Explain Liang Barsky line clipping algorithm.
5. Answer the following : (any **four**) **20**
- (1) What is reflection ? Explain reflection about X axis, Y axis and Y=X axis.
  - (2) Find the transformation matrix for given square ABCD to half its size with respect to fixed point (2, 2) for the coordinates A(1, 1), B(3, 1) C(3, 3) and D(1, 3). Also get the resultant coordinates of the square ABCD.
  - (3) Explain General pivot point rotation.
  - (4) Explain Sutherland Hodgeman Polygon clipping algorithm with example.
  - (5) Explain the classification of visible surface detection algorithm. Explain back face detection.
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