



**RF-4815**

**M. C. A. (Sem. III) (ATKT) Examination**

**April / May – 2010**

**Paper - 305 : Interactive Computer Graphics**

Time : 3 Hours]

[Total Marks : 70

**Instructions :**

(1)

नीचे दृष्टावेक निशानीवाणी विगतो उत्तरवडी पर अवश्य लपवी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="text" value="M. C. A. (Sem. 3) (ATKT)"/>	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="text" value="Paper - 305 : Interactive Computer Graphics"/>	<input type="text"/>
Subject Code No. : <input type="text" value="4"/> <input type="text" value="8"/> <input type="text" value="1"/> <input type="text" value="5"/>	<input type="text"/>
Section No. (1, 2,.....): <input type="text" value="Nil"/>	<input type="text"/>
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1 Do as directed:- 14

- (a) What do you mean by DDA? Explain DDA line drawing algorithm. Also discuss limitation of DDA algorithm.
- (b) What do you mean by symmetry of a circle? What is an initial decision parameter of circle according to integer algorithm?
- (c) What is inside test? Give usage of inside test.

2 Do as directed:- 14

- (a) Differentiate following (any two):-
  - (1) Bitmap and stroke method of character generation
  - (2) CRT and LCD
  - (3) Raster scan system and random scan system
- (b) Write a note on line style primitive.

**OR**

- (b) Define pixel, aspect ratio, refresh rate and random resolution.
- (c) What do you mean by scaling? What is uniform scaling and differential scaling?

**3** Do as directed:- **14**

- (a) Why do we fill polygon with colors? Explain any one filling method with its advantages and limitations.
- (b) Define transformation. Why transformation in computer graphics represented in terms of matrix? Obtain transformation matrix for enlarge or shrink and image with respect to fixed point.

**OR**

- (b) What do you mean by homogenous coordinates? Derive 2D rotation transformation with respect to arbitrary point.

**4** Do as directed:- **14**

- (a) Explain any one polygon clipping algorithm.

**OR**

- (a) Explain Liang-Barskey line clipping algorithm.
- (b) 'Line clipping algorithm can be used with polygon clipping.' Justify with proper example.
- (c) Explain any **two** character clipping methods.

**OR**

- (c) How do you achieve mirror image using transformation?

**5** Do as directed:- **14**

- (a) What is projection? Compare parallel projection and perspective projection.
- (b) Why do we need illumination model? What is diffuse illumination and specular reflection?
- (c) Define computer animation. Explain steps to create animation sequence.

**OR**

- (c) Write a note graphics standard.