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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)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **M. C. A. (Sem. 3) (ATKT)**

Name of the Subject :

☛ **Paper - 305 : Interactive Computer Graphics**

☛ Subject Code No. : **4 8 1 5** ☛ Section No. (1, 2,.....) : **Nil**

Seat No. :

Student's Signature

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.
