# U-3779

## Third Year B. C. A. (Sem. VI) Examination

**February/March – 2012**

## 601 : Computer Graphics

*(Old)*

Time : Hours] [Total Marks : **70**

**Instructions :**

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

Name of the Examination :

☛ **T. Y. B. C. A. (Sem. 6)**

Name of the Subject :

☛ **601 : Computer Graphics (Old)**

☛ Subject Code No. : **3 7 7 9** ☛ Section No. (1, 2,.....) : **NIL**

Seat No. :

Student's Signature

**1** Answer the following in short : **14**

(1) Define aspect ratio.

(2) Explain the types of slope of a line segment.

(3) What is Antialiasing ?

(4) State advantages of winding number method over even-odd method.

(5) Explain shearing with an example ?

(6) List out various graphics standards.

(7) Write a matrix to make an object twice as its original size.

**2** (a) Write and explain Bresenham's line drawing algorithm. Also state its advantages over VECGEN. **7**

**OR**

(a) How will you draw a dashed line using VECGEN algorithm ? **7**

(b) Explain character generation methods. **4**

**OR**

(b) Explain animation in detail. **4**

(c) Give a transformation matrix to rotate an object by 45 in anticlockwise direction and then to scale it in the horizontal direction by one-third of the origin. **3**

3 Answer any **two** : **14**

(a) Explain scan line fill method to fill a polygon.

(b) Explain bitmap graphics vs vector graphics.

(c) Explain winding number method to perform inside test on polygon.

4 (a) Explain scaling transformation. **7**

(b) What is Homogeneous co-ordinate ? Explain translation of polygon. **7**

**OR**

4 (a) Prove that the multiplication of matrices of both of the following sequence of operation is commutative. **7**

(i) 2 successive rotations

(ii) 2 successive translations

(b) "Undo a transformation is transformation itself" : validate this statement with proper example. **7**

5 Write detailed note on following : (any **two**) **14**

(a) Applications of computer graphics

(b) Fractals

(c) Color CRT