D-3793

Third Year B. C. A. (Sem. VI) (CBCS) Examination
February – 2016
Computer Graphics : Paper - 601

Time : 3 Hours] [Total Marks : 70

Instruction :

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

Name of the Examination :
→ THIRD YEAR B. C. A. (SEM. 6) (CBCS)

Name of the Subject :
→ COMPUTER GRAPHICS : PAPER - 601

→ Subject Code No. : 3 7 9 3 → Section No. (1, 2,.....) : Nil

Seat No. :

Student's Signature

1 Answer the following in short : (any seven) **14**

   (1) Write concept of Frame Buffer.

   (2) What is an ellipse?

   (3) How graphics used in Education?

   (4) What is aliasing? How will you remove it?

   (5) How will you represent polygon?

   (6) Discuss the case where even-odd and winding number method yield different result.

   (7) Explain Random scan display.

   (8) What is transformation? Write shearing transformation matrix.

   (9) Write advantage and disadvantage of LCD.

2 Answer following questions in detail : **14**

   (a) How graphics systems are applied in the area of Presentation graphics and Entertainment? **08**

   (b) Write note on Color CRT. **06**

<p align="center">OR</p>

   (b) Write note on DVST. **6**

D-3793] 1 [Contd...

3   (a)   Explain Line drawing algorithm using Breshenham's method.   **8**

<div align="center">OR</div>

(a)   Discuss Geometry of line.   **8**

(b)   Write note on Thick line and Line caps.   **6**

4   Answer following questions in detail : (any two)   **14**

(a)   Explain any one method to check whether a point is inside polygon or not.

(b)   Discuss 'scan line' method to fill polygon.

(c)   Explain Boundary fill method with an example.

5   Do as directed :   **14**

(a)   Explain Rotation about origin.   **6**

<div align="center">OR</div>

(a)   Write note on Scaling transformation.   **6**

(b)   Attempt the following with example : (any two)   **08**

   (i)   Give 2×2 transformation matrix for :

       Shift the image to the right 3 units and up 2 units.

   (ii)   Give a single 3×3 homogeneous coordinate transformation matrix which translate down $\frac{1}{4}$ unit, right $\frac{1}{4}$ unit and then rotate counter-clockwise by $\pi/4$.

   (iii)   Derive single 3×3 homogeneous-coordinate transformation matrix for the following translation:

       (a)   Move object down 1/2 unit and right 1 unit.

       (b)   Scale y-coordinate to make twice as tall, rotate clockwise by $\pi/6$.