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RAN-3590

T.Y.B.C.A. (Sem - VI) Examination

February - 2019

Computer Graphics

સૂચના : / Instructions

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

Name of the Examination:

☛ **T.Y.B.C.A. (Sem-VI)**

Name of the Subject :

☛ **601- Computer Graphics**

Subject Code No.: **3** **5** **9** **0**

Seat No.:

Student's Signature

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

a) What is Raster Graphics? Explain with example.

b) Define Ellipse. What is major and minor axis of ellipse?

c) Define Refresh buffer. What is the use of refresh buffer?

d) What is transformation? List out various types of transformations.

e) State the limitations of even-odd method to perform inside test on polygon.

f) Define intercept of line. How to find the intercept of line?

g) Write any one advantage and disadvantage of boundary fill algorithm.

h) Explain convex and concave polygon in short.

i) List advantages and disadvantages of LCD.

Q-2. Answer the following questions in detail.

a) Write a note on CRT display systems. **8**

b) Explain various Graphics standards in detail. **6**

OR

Q-2. a) List the application areas of computer graphics. Explain any two in detail. **8**

b) Explain shadow mask method in detail. Give its advantages over beam penetration method. **6**

Q-3. Answer the following in detail.

a) Write and explain Bresenham's line drawing algorithm. **8**

OR

a) Explain VEGGEN algorithm in detail and discuss the limitations of the algorithm. **8**

b) Write a note on geometry of line. **6**

Q-4. Do as directed: (any two) **14**

a) List the methods available to check whether the given point is inside the polygon or not. Explain any one method in detail.

b) Explain boundary fill method to fill polygon.

c) Compare scan line and flood fill algorithms for polygon.

Q-5. Do as directed:

a) What is rotation of an object? Derive clock wise and anti clock wise rotation matrix about the origin. **6**

OR

a) Write a note on shearing and reflection. **6**

b) Attempt the following : (any two) **8**

1. Derive a matrix for moving object 6 units down and 7 units left.
2. Derive a matrix to rotate an object clock wise 90° about origin. (cos 90° = 0 and sin 90° = 1)
3. Derive a matrix for scaling an object by the scale factor of 2 for x axis and 4 for y axis.

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