RAN-2111000106010001

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B.CA. (OLD) (Sem.- VI) Examination February - 2026

601-1-Computer Graphics (OLD)

[Total Marks: 70

સૂચના : / Instructions

(1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the above details on your answer book

Seat No.:

Student's Signature

Q.1. Answer the following in short. (Any Seven) 14

1. Define computer graphics. Name two application areas of computer graphics.
2. What is a graphics standard? Why are graphics standards important?
3. What is circle? Define chord of a circle.
4. Define Color CRT.
5. Define line segment and write down equation of line segment. Also calculate slope of the line segment having endpoints P(2,–4) and Q(12,6).
6. What is a frame buffer? What is the purpose of a frame buffer in raster graphics?
7. What is transformation? Write down homogeneous transformation matrix for reflection of an object in x-axis.
8. What do you mean by shearing? List out types of shearing.
9. What do you mean by concave and convex polygon? Give example of it.
10. List out advantages and disadvantages of flood fill algorithms.

Q.2. Answer the following questions in detail. (Any 2) 14

1. Explain different computer graphics file formats with examples. Also differentiate between raster and vector graphics.
2. Explain the various application areas of computer graphics with examples.
3. Write a note on GKS and PHIGS.

Q.3. Answer the following questions in detail. (Any 2) 14

1. Explain Refresh CRT and Color CRT with diagram and applications.
2. What is Direct View Storage Tube? Explain its working and limitations.
3. Write a short note on Boundary Fill Algorithm.

Q.4. Do as directed. (Any 2) 14

1. Explain VECGEN line generation method.
2. Explain different line styles used in computer graphics.
3. Explain rotation transformation giving suitable example.

Q.5. (A) Derive a transformation matrix for the given operation. (Any 2) **8**

1. Consider a triangle having coordinates A(l,l), B(3,l) and C(2,4). Scale this triangle horizontally by 5 units and vertically by 3 units.
2. A square has its vertices at A(1,1), B(4,1), C(4,4) and D(1,4). Translate the square by 3 units in the x-direction and –2 units in the y-direction. Find the new coordinates of the square after translation.
3. Derive a matrix for the following operation. Rotate the point P(5,4) by 90° anticlockwise about the origin. Find the new coordinates.

Q.5. (B) Attempt any one. **6**

1. Write a short note on reflection.
2. List out methods of polygon inside test. Explain any one in detail.

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