POKHARA UNIVERSITY

Level: Bachelor | Semester: Fall | Year : 2021
Programme: BE | Full Marks: 100
Course: Computer Graphics | Pass Marks: 45
Time : 3hrs.

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Attempt all the questions.

1. a) Define computer graphics. List the application of computer graphics in different fields. 7
   b) In a true color system having resolution of 1024*768 having the refresh rate of 60fps calculate the following 8
      i. Size of frame buffer
      ii. Access time of one frame
      iii. Access time for one pixel
      iv. Access time for one row

   Note: convert your memory into Mega Byte.
2. a) Differentiate between raster and Vector scan display system along with their architecture. 8
   b) Digitize the first octant of a circle having radius r=8 and centered at (3,4) 7
3. a) Prove that successive translation and rotation is additive. 8
   b) Explain the role of composite transformation in 2D/3D geometric transformation. Explain viewing pipelining in 2D. 7
4. a) What is 3D transformation? Rotate the triangle A(0,0), B(2,2), C(4,2) about the origin by an angle of 45°. 8
   b) How you represent different objects in 3D. Differentiate between parallel and perspective projection with example? 7
5. a) What is Mach band effect? Differentiate between Gouraud and Phong shading. 8
   b) Define color model in computer graphics. Differentiate between additive color and subtractive color. 7

6. a) Explain the importance of hidden surface removal in computer graphics. What are the drawbacks of z-buffer method and how it is corrected in A-buffer? 7
   b) Explain how machine independent graphical language are more preferable to develop graphical project. 8
7. Write short notes on: (**Any two**) 2×5
   a) Open GL
   b) Beizer curve
   c) Polygon Table