

Code No: 127BX

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, November/December -2018

COMPUTER GRAPHICS

(Common to CSE, IT)

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit.

Each question carries 10 marks and may have a, b, c as sub questions.

PART- A**(25 Marks)**

- 1.a) Define Pixel Addressing. [2]
- b) List out different Input and Output Devices. [3]
- c) Differentiate between window and view port. [2]
- d) Describe Reflection. [3]
- e) Define Parallel Projection. [2]
- f) Differentiate 2D and 3D Transformations. [3]
- g) What are the polygon rendering methods? [2]
- h) Explain the steps involved in phong shading algorithm. [3]
- i) What is meant by scripting system? [2]
- j) What are features of Morphing? [3]

PART-B**(50 Marks)**

2. Explain DDA Line generation algorithm with an example. [10]
- OR**
- 3.a) Differentiate between Raster Scan and Random Scan Display Units. [5+5]
 - b) Explain about the beam penetration method. [5+5]
4. What are composite transformations? Describe the rotation and Reflections with suitable illustrations. [10]
- OR**
5. Describe about Cohen Sutherland Line Clipping Algorithm with example. [10]
6. Explain the following
 - a) Quadric Surfaces
 - b) 3D clipping. [5+5]
- OR**
7. Describe different Design Techniques using Bezier Curves. [10]
 8. Explain different Visible-Surface Detection Algorithms. [10]
- OR**
9. Discuss different Illumination Models to calculate Light Intensities. [10]
 10. Explain step by step design features to implement Animation. [10]
- OR**
11. Write a program to implement motion of a bouncing ball using a downward gravitational force and ground plane friction force. Initially, the ball is to be projected into space with a given Velocity vector. [10]