Exam.Code:0923
Sub. Code: 6847

1078
B.E. (Information Technology)
Fifth Semester
ITE-542/532: Computer Graphics
(2015-16)

Time allowed: 3 Hours Max. Marks: 50

NOTE: *Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.*

x-x-x

I. Attempt the following:-

a) Differentiate between Raster scan and Random scan?

b) Discuss the working principle of Light pen.

c) What are the advantages of using segments?

d) What is the difference between window and viewport?

e) What is a composite matrix? (5x2)

UNIT – I

II. a) What are the various video display devices? Discuss the working of any two devices.

b) Illustrate the working of DDA line generation algorithm using suitable example. (5,5)

III. a) What is aliasing? Discuss one software and one hardware based anti-aliasing technique.

b) Explain the data structures used for segments? Also discuss how creation and deletion of segments is facilitated using these data structure? (5,5)

IV. a) What are: homogenous *transformation matrix, inverse transformation*

b) What is uniform and non-uniform scaling? Illustrate the operation on a line AB from A (2,5) to B (2,20). (5,5)

UNIT – II

V. a) Discuss the application of clipping in computer graphics.

b) Discuss the role of normalized coordinates in window to viewport mapping.

c) Explain the algorithm for polygon clipping with example and illustration. (10)

P.T.O.

VI. a) Explain rotation in 3D coordinates system. How are the rotation transformation matrix obtained?

b) How is parallel projection different from perspective projection? Discuss their types. (5,5)

VII. What is visible surface detection? Explain the Back face detection method and Z-buffer algorithm? Also discuss the data structure to store depth and other image information. (10)

x-x-x