(i) Printed Pages: 3

(ii) Questions : 9

Roll No. .....

Sub. Code : 3620

Exam. Code : 0461

M.Sc. (Information Technology) 3rd Semester

(1129)

COMPUTER GRAPHICS

Paper—MS : 39

Time Allowed : Three Hours] **[Maximum Marks : 80**

Note :— Candidate is required to attempt **five** questions in all including question no.**1** (which is compulsory) and attempt remaining **four** questions by selecting **one** question from each Unit.

I. (a) What is scan conversion ? 2

(b) What is Output Primitive ? 2

(c) What are the disadvantages of DDA algorithm ? 2

(d) What are the various types of clipping ? Name them. 2

(e) What is frame buffer ? 2

(f) What are the various ways of producing colour displays with a CRT ? 2

(g) What is viewing transformation ? 2

(h) Define shading. 2

UNIT—I

II. (a) What is interactive graphical system ? Also discuss its usage. 8

(b) Discuss the DDA line drawing algorithm with example. 8

III. Explain the mid-point circle generation algorithm with example. 16

UNIT—II

IV. (a) Derive the transformation matrix to magnify the triangle with vertices A(0, 0), B(1, 2), C(3, 2) to twice its size so that the point C(3, 2) remains fixed. 8

(b) Discuss the transformation of points and unit square. 8

V. (a) Explain with an example the Liang-Barsky algorithm for line clipping. 8

(b) Discuss window-to-viewport transformation. 8

UNIT—III

VI. (a) Explain animated algorithm for merge sort. 8

(b) What is Open GL ? List and explain the use of various graphics primitives and functions available in Open GL related to color, light and animation. 8

VII. (a) Discuss mouse programming in C/C++ with suitable example. 8

(b) Explain animated algorithm for Towers of Hanoi. 8

UNIT—IV

VIII. (a) Discuss the parametric cubic curves. 8

(b) What is Bezier curve ? Define properties of Bezier curve. Explain the condition for smoothly joining two Bezier curve segments, 8

IX. (a) Discuss Z-buffer algorithm with example. 8

(b) How 3-D transformation is different from 2-D transformation ? Discuss. 8