Total No. of Printed Pages:2

SUBJECT CODE NO:- H-279
FACULTY OF SCIENCE AND TECHNOLOGY
S.E. (CSE/IT) (Sem-II)
Computer Graphics
[Revised]

[Time: Three Hours] **[Max. Marks:80]**

Please check whether you have got the right question paper.

N.B (i) Q.1 from section A and Q.6 from section B are compulsory.
(ii) From the remaining solve any two questions from each section.

Section A

Q.1 **Solve any five questions** 10

a) Define Following Terms:
   1. Frame Buffer 2. Persistence
b) What is display controller?
c) What are the primary components of an electron gun in a CRT?
d) Explain with neat diagram convex and concave polygon.
e) Discuss the concept of color look up table.
f) What do you mean by physical and logical devices?
g) Write working of pen-plotter model.
h) Draw neat diagram of CMYK color model.

Q.2 a) Consider a line from (0,0) to (-8, -4). Use the simple DDA to rasterize this line. 07

b) Write short notes on 08
   1. OpenGL libraries
   2. OpenGL Primitives

Q.3 a) Explain in detail two techniques used for producing color display with a CRT monitor. 07
b) Write an OpenGL program to draw a triangle. 08

Q.4 a) Explain logical classification of input devices. 07
b) Use Bresenhams line drawing algorithm to rasterize the line with endpoints (20,10) and (30,18). 08

Q.5 Write short notes on (any three) 15
1. LCD
2. Touch Panel
3. Display Lists in OpenGL
4. RGB color model.

Section B

Q.6 **Solve any five questions** 10

a) What is vanishing point?
b) What do you mean by exterior clipping?
c) Give the 2D transformation matrix for Rotation about origin in
   1. Clockwise Direction
   2. Anticlockwise Direction
d) Distinguish between Window port & View port?
e) Define Translation and translation vector.
f) Enlist types of projection with neat diagram.
g) Define pivot point for rotation.
h) What is the use of polar coordinate system?

Q.7 a) Perform a 45° rotation of triangle A(0,0), B(1,1) and C(5,2) about the origin. 07
b) Explain why homogenous coordinates are used for handling geometric transformations. 08

Q.8 a) Explain the Painter's algorithm for hidden surface removal. Why Painters algorithm is a priority algorithm? 07
b) Differentiate between parallel and perspective projection. 08

Q.9 a) Describe in brief viewing transformation? 07
b) What is line clipping? Explain Cohen-Sutherland line clipping algorithm. 08

Q.10 a) Write short note on 15
1. Midpoint Subdivision algorithm
2. Polygon clipping
3. Classical and computer viewing