

**M.Sc (Informatics) II Semester-2016**  
**Paper-IT-25- Computer Graphics and Multimedia**

Time: 3hrs

Maximum Marks: 75

(Write your Roll No. on the top immediately on receipt of this question paper)

(Attempt any five questions . All questions carry equal marks)

**Q No 1.**

Briefly define the following terms

- (a) Frame Buffer.
- (b) Aliasing
- (c) Interlacing
- (d) Characteristics and components of computer graphics.
- (e) Classification and components of Graphics display devices

**Q No 2.**

(a) Write a program in C/C++ to implement Brashenham's line algorithm. (7)

(b) Plot a circle using mid point algorithm whose radius = 3 and center is at (0,0) (8)

$$(x \leq y) \quad d = d + 2x + 3$$

**Q No 3.**

(a) Write a recursive program to flood fill a polygon. (7)

(b) Perform a 45 degree rotation of a triangle with vertices A(0,0) , B(1,1) and C(5,2)  
(i) about origin (ii) about point P(-1,-1) (8)

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**Q No 4.**

- (a) Clip the line  $P1(-15,-30)$  to  $P2(30,60)$  against the window having diagonally opposite corners as  $(0,0)$  and  $(15,15)$ . (7)
- (b) Find the normalization transformation  $N$ , which uses the rectangle  $A(1,1)$ ,  $B(5,3)$ ,  $C(4,5)$  and  $D(0,3)$  as a window on to a normalized device screen as a view port where  $X$ -extent is from 0 to 1 and  $Y$ -extent is from 0 to 1. (8)

**Q No 5.**

- (a) A rectangular parallelepiped is given. Its length on  $X$ -axis,  $Y$ -axis and  $Z$ -axis is 3, 2 and 1 respectively. Perform a rotation by an angle  $-90$  degree about  $X$ -axis and an angle  $90$  degree about  $Y$ -axis. (6)
- (b) What do you understand by the term Rendering. Describe two methods of polygon rendering. (1+4+4)

**Q No 6.**

- (a) Discuss some desirable multimedia features
- (b) What are different types of authoring tools in multimedia? Discuss in brief.
- (c) What is a clip art? How does it help in creation of multimedia applications.
- (d) Differentiate between additive and subtractive color models. Give an example of each
- (e) Describe principles and types of animation. (3x5=15)