

**2021**

Full Marks : 60

Time : 3 Hours

Sem-6

*Candidates are required to give their answer in their own words as far as practicable. Their figures in the margin indicate full marks.*

**Instructions:**

**Group - A** is compulsory and will contain **two** questions. Questions **1** carry **10** marks and questions **2** have **5** marks.

**Group - A**

1. Answer **all** multiple type questions :  $1 \times 10 = 10$ 
  - (i) RGB colors on internet applications are called .....
  - (a) Safecolors
  - (b) Colors space
  - (c) Web colors
  - (d) Safe web colors

(ii) The intersection of three primary RGB color produces .....

- (a) White color      (b) Black color
- (c) Magneta color    (d) Blue color

(iii) Color information can be stored in .....

- (a) Main memory
- (b) Secondary memory
- (c) Graphics card
- (d) Frame buffer

(iv) List various polygon filling algorithms :

- (a) Flood Fill Algorithm
- (b) Boundary Fill Algorithm
- (c) Scan Line Algorithm
- (d) All of the above

(v) Basic transformations techniques are :

- (a) Translation
- (b) Scaling

(c) Rotation

(d) All of the above

(vi) Explain differ types of Text clipping in brief

- (a) All or none string clipping
- (b) All or none character clipping
- (c) Text clipping
- (d) All of the above

(vii) Merits of DDA algorithms

- (a) Bresenham's algorithm is more efficient and much more accurate than DDA algorithm
- (b) Bresenham's algorithm can draw circles and curves with much more accuracy than the DDA algorithm
- (c) Bresenham's algorithm is faster than DDA algorithm
- (d) It is the simplest algorithm and it does not require special skills for implementation.

(viii) Merits of Bresenham's Algorithm

- (a) Floating point Addition is still needed.
  - (b) Bresenham's line algorithm is a highly efficient incremental method over DDA.
  - (c) It is a faster method for calculating pixel positions than the direct use of equation  $y = mx + b$ .
  - (d) It eliminates the multiplication in the equation by making use of raster characteristics, so that appropriate increments are applied in the x or y direction to find the pixel positions along the line path
- (ix) File extensions of Raster graphics are :

- (a) .pdf
- (b) .bmp, .gif
- (c) .dxf
- (d) .eps

(x) File extensions of Vector graphics are :

- (a) .jpg
- (b) .tif
- (c) .bmp
- (d) .svg, .eps.

2. Write the difference between vector and raster graphics ? 1×5=5

### Group - B

**Note :** Answer any **three**. 15×3=45

- 3. What is Computer Graphics ? Write the essential application of computer-graphics ? 15
- 4. What are the advantage and disadvantages of DDA Algorithm ? Define Clipping and Clip window. 15
- 5. Explain Bresenham's Algorithm along with its advantages and disadvantages. 15

6. Name the basic colour models in computer graphics. Explain one of them. 15

7. Explain different types of polygon filling algorithm ? 15

\*\*\*