

(4) TBC-601/TBI-602

OR

- (b) Digitize a line segment between points A (7, 9) and B (14, 15) using Bresenham line drawing algorithm. Explain the advantages of Bresenham line drawing over DDA line drawing algorithm.

10 Marks (CO3)

TBC-601/TBI-602

480

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Roll No.

TBC-601/TBI-602

B. C. A./B. SC. (IT)

(SIXTH SEMESTER) MID SEMESTER

EXAMINATION, April/May, 2022

COMPUTER GRAPHICS AND ANIMATION

Time : 1½ Hours

Maximum Marks : 50

Note : (i) Answer all the questions by choosing any *one* of the sub-questions.

(ii) Each question carries 10 marks.

1. (a) Define computer graphics. What are the applications areas of computer graphics ?

Explain. 10 Marks (CO1)

OR

- (b) Explain the working of CRT with block diagram. How colors are formed in display devices ? Explain. 10 Marks (CO1)

P. T. O.

(2) TBC-601/TBI-602

2. (a) Write short notes on the following :

10 Marks (CO1)

- (i) Aspect ratio
- (ii) Frame buffer
- (iii) Raster scan
- (iv) Bitmap

OR

(b) Write difference between the following :

10 Marks (CO1)

- (i) Raster scan vs. random scan
- (ii) Horizontal vs. vertical retraces
- (iii) LED vs. LCD

3. (a) Consider a raster system with the resolution of 1024×768 pixels and the color palette calls for 65,536 colors. What is the minimum amount of video RAM that the computer must have to support the above-mentioned resolution and number of colors ? 10 Marks (CO2)

(3) TBC-601/TBI-602

OR

(b) How much time is spent scanning across each row of pixels during screen refresh on a raster system with resolution of 1280×1024 and a refresh rate of 60 frames per second ? 10 Marks (CO2)

4. (a) Write short notes on the following :

10 Marks (CO2)

- (i) Point representation
- (ii) RGB and CMY color model
- (iii) Scalar and Vector
- (iv) Properties of Matrices

OR

(b) Define identity and null matrix. If

$$A = \begin{bmatrix} 1 & 2 \\ 2 & 1 \end{bmatrix} \text{ and } B = \begin{bmatrix} 2 & 1 \\ 1 & 2 \end{bmatrix}, \text{ find}$$

$A(BA)$. 10 Marks (CO2)

5. (a) Explain DDA algorithm in detail. Digitize a line segment between points A (7, 9) and B (14, 15) using DDA algorithm.

10 Marks (CO3)

P. T. O.