

TCS-702

**B. TECH. (CSE)
(SEVENTH SEMESTER)
MID SEMESTER EXAMINATION, 2018
COMPUTER GRAPHICS**

Time : 1:30 Hours

Maximum Marks : 50

Note : (i) This question paper contains two Sections.

(ii) Both Sections are compulsory.

Section—A

1. Fill in the blanks : (1×5=5 Marks)

(a) The resolution of 2 × 2 inch image that has 512 × 512 pixels is

(b) Width of an image having height of 5 inches and an aspect ratio 1.5 is

(c) An alphanumeric on a graphics system is used primarily as a device for entering text strings.

(d) LCD stands for

(2)

TCS-702

- (e) A is a ball device that can be rotated with the fingers or palm of the hand.
2. Attempt any *five* parts : (3×5=15 Marks)
- (a) Find the size of 800 × 600 image at 240 pixels per inch.
- (b) Find the refresh rate of a 512 × 512 frame buffer, if the access time for each pixel is 200 nanoseconds (ns).
- (c) Define the term Joystick.
- (d) Define the term Light Pen.
- (e) What is a vector ? Explain with example.
- (f) What are the various operations related to matrices ?

Section—B

3. Attempt any *two* parts of choice from (a), (b) and (c). (5×2=10 Marks)
- (a) Explain the construction and working of CRT.
- (b) What are input devices ? Explain any *three* of them with diagram.
- (c) Consider two matrices of order 3 × 3, A and B. Show that matrix multiplication is not commutative.

F. No. : b-45

(3)

4. Attempt any *two* parts of choice from (a), (b) and (c). (5×2=10 Marks)
- (a) Perform a 60° rotation for a triangle A (0, 0), B (1, 1) and C (-1, -1) about the origin.
- (b) Prove that two 2-D rotations about the origin, commute i. e. $R_1R_2 = R_2R_1$.
- (c) Reflect the diamond-shaped polygon whose vertices are A (-1, 0), B (0, -2), C (0, 1) and D (0, 2) about the (i) line $y = 2$ and (ii) $x = 2$.
5. Attempt any *two* parts of choice from (a), (b) and (c). (5×2=10 Marks)
- (a) Use Cohen-Sutherland line clipping algorithm to find the visible portion of the line P (40, 80), Q (120, 30) inside the window, the window is defined as ABCD : A (20, 20), B (60, 20), C (60, 40) and D (20, 40).
- (b) What are printers ? Explain different types of printers.
- (c) Derive an equation for the rotation about z-axis in 3-D.

TCS-702

340

F. No. : b-45