

COURSE CODE(CREDITS): 18B11CI515 (3)

MAX. MARKS: 15

COURSE NAME: Computer Graphics

COURSE INSTRUCTORS: DR. ANITA, Mr. PRATEEK, Ms. SEEMA

MAX. TIME: 1 Hour

Note: (a) All questions are compulsory. Calculator is allowed

(b) Marks are indicated against each question in square brackets.

(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

- Q1. The operation of most video monitors was based historically on the standard cathode-ray tube (CRT) design. Figure 1 below illustrates the basic operation of a CRT monitor.
- (a) Label all the missing components of CRT design shown below.
- (b) Discuss the role of control grid that acts as a primary component of an electron gun in a CRT. (CO1) [1+2 = 3 Marks]

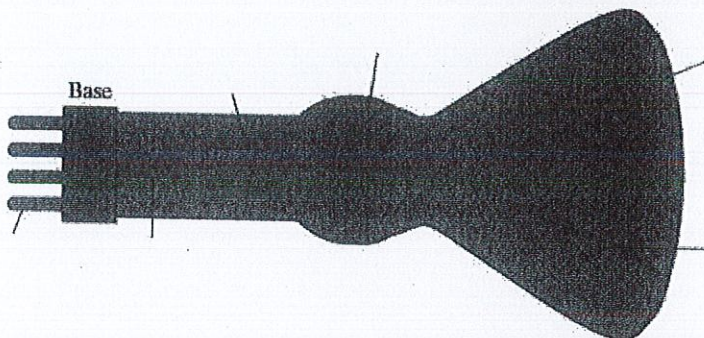


Fig. 1 Basic design of a CRT

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- Q2. Compare and contrast the working of light-emitting diode (LEDs) with liquid-crystal displays (LCDs). (CO1) [2 Marks]
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- Q3. Plot the 1st octant of a circle (having 8 octants) centered at origin using midpoint circle drawing algorithm, having the radius 10 units. (CO2) [2 Marks]

Q4. How slope of an ellipse is related with ellipse drawing algorithm. Highlight important steps of the algorithm based on comparison of dx with dy by including equations of $x(k+1)$, $y(k+1)$, dx, dy, and $p(k+1)$. (CO2) [3 Marks]

Q5. Illustrate the Bresenham Line Drawing algorithm. Digitize the line with endpoints (5, 5) to (13, 9) using Bresenham's algorithm. Determine the number of iterations necessary to complete the line drawing. (CO2) [5 Marks]

ALL THE BEST
