Code No. : 10334 E   Sub. Code : AMCS 63

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL. 2023

Sixth Semester

Computer Science — Core

COMPUTER GRAPHICS AND VISUALIZATION

(For those who joined in July 2020 only)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Each screen point is referred to as a —————— .
   (a) Pivot   (b) Pixel
   (c) Dot   (d) Indent

2. Color CRTs in graphics systems are designed as —————— monitors.
   (a) RGB   (b) CMYK
   (c) HLS   (d) None

3. There are —————— types of translation in computer graphics.
   (a) Five   (b) Three
   (c) Four   (d) Two

4. Bitmap is a collection of —————— that describes an image.
   (a) Pixels   (b) Algorithms
   (c) Bits   (d) Colors

5. Which of the following is a primary output device of a graphics system?
   (a) Printer   (b) Mouse
   (c) Video Monitor (d) Keyboard

6. Which of the following is defined as the process of elimination of parts of a scene outside a window or a viewpoint.
   (a) Cutting   (b) Rotating
   (c) Clipping   (d) Editing

7. —————— is the process of changing or modifying the size of objects.
   (a) Scaling   (b) Shearing
   (c) Rotation   (d) Translation

8. The fastest method for calculating pixel position is ——————
   (a) DDA Line algorithm
   (b) Mid–point Algorithm
   (c) Parallel Line Algorithm
   (d) None

9. Cohen–Sutherland algorithm divides the region into —————— spaces.
   (a) 9   (b) 8
   (c) 7   (d) 6

10. The higher number of pixels gives a —————— image.
    (a) Better   (b) Worst
    (c) Smaller   (d) None

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain flat panel displays with neat diagrams.

    Or

    (b) Explain DDA line drawing algorithm.

12. (a) Discuss the different text attributes.

    Or

    (b) Explain matrix representation and homogenous coordinates for graphical representation.

13. (a) Describe the viewing pipeline with neat diagram.

    Or

    (b) Explain how will you transform window-to-viewpoint coordinate.

14. (a) Discuss 3–D coordinate–Axes rotation with example.

    Or

    (b) How reflections and sheers are useful in three–dimensional graphical application? Explain.

15. (a) Explain Depth–Buffer method to defect visible surfaces.

    Or

    (b) Describe RGB color model in detail.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain the classifications for graphics software.

Or

(b) Describe input devices for graphical applications in detail.

17. (a) Explain the basic two dimensional geometric transformations in detail.

Or

(b) Explain line attributes of output primitives.

18. (a) Describe Cohen–Sutherland Line Clipping algorithm in detail.

Or

(b) Explain Clipping operations in detail.

19. (a) Discuss the logical classification of input devices.

Or

(b) Explain three dimensional display methods in detail.

20. (a) Describe projection in detail.

Or

(b) Explain HSV color model in detail.

————————