(6 pages)

Reg. No. : .....

Code No. : 10244 E **Sub. Code : SMCA 63/ AMCA 63**

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2023.

Sixth Semester

Computer Applications – Core

COMPUTER GRAPHICS

(For those who joined in July 2017-2020)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which one of the following is the primarily used output device?
   (a) Video monitor
   (b) Scanner
   (c) Speaker
   (d) Printer

2. _____ acts as anode in CRT.
   (a) The phosphorous coating
   (b) The glass panel
   (c) The deflectors
   (d) None of these

3. Which of the algorithm is used to color a pixel if it is not colored and leaves it if it is already filled?
   (a) Boundary fill algorithm
   (b) Scan line polygon fill algorithm
   (c) Flood fill algorithm
   (d) All of the above

4. Bresanham circle algorithm uses the approach of
   (a) Point
   (b) Line
   (c) Square
   (d) Midpoint

5. Which one is the rigid body transformation that moves object without deformation?
   (a) Translation
   (b) Scaling
   (c) Rotation
   (d) Shearing

6. Which of the following transformation is used for altering the objects size?
   (a) Translation
   (b) Scaling
   (c) Rotation
   (d) None of the above

7. Clipping algorithm are
   (a) Two or three dimensional
   (b) Two dimensional
   (c) Three dimensional
   (d) None of these

8. Sutherland Hodgemon algorithm is used for:
   (a) Line clipping
   (b) Point clipping
   (c) Polygon dipping
   (d) Hybrid clipping

9. Z-buffer algorithm is used for:
   (a) Frame buffer removal
   (b) Hidden line removal
   (c) Rendering
   (d) Animation

10. Which surface algorithm is based on perspective depth?
    (a) Depth comparison
    (b) Z-buffer algorithm
    (c) Subdivision method
    (d) Back-face removal

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Explain Working principle of Plasma Panel Display.

    Or

    (b) Explain Graphical User Interface.

12. (a) Explain odd-even rules with example.

    Or

    (b) Briefly explain about winding number method.

13. (a) Explain reflection in 2D.

    Or

    (b) Explain transformation in homogenous co-ordinate system.

14. (a) Write short notes on viewing and clipping.

Or

(b) Explain the concepts of Parametric Clipping.

15. (a) What is the difference between object space and image space methods?

Or

(b) Discuss the limitations of Depth Buffer.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Explain with a neat diagram the working principle of CRT and color Monitors.

Or

(b) Discuss the Raster Scan and Random Scan Display devices.

17. (a) Discuss in detail Bresenham's Circle-Drawing Algorithm.

Or

(b) How to perform flood fill using the algorithm? Explain.

18. (a) Discuss about two dimensional rotation and scaling.

Or

(b) Explain the 3-D Rotation transformation in detail.

19. (a) Explain midpoint Subdivision algorithm.

Or

(b) List different polygon clipping algorithms and explain any one of them.

20. (a) Explain briefly about Back Face Removal Algorithm.

Or

(b) Explain in detail about types of hidden surface algorithms.

———————