

(6 Pages)

Reg. No. :

Code No. : 20694 E Sub. Code : SMCA 63

B.C.A. (CBCS) DEGREE EXAMINATION, APRIL 2021.

Sixth Semester

Computer Application – Core

COMPUTER GRAPHICS

(For those who joined in July 2017 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Smallest size object that can be displayed on a monitor is called _____
(a) Picture element (b) Twips
(c) Dot Pitch (d) Aspect ratio
2. The maximum number of points that can be displayed without overlap on a CRT
(a) Aspect Ratio (b) Resolution
(c) Brightness (d) Pixel

3. A technique by which the vertical and / or horizontal scan frequency of video signal can be changed for different purpose and applications is called
- (a) Scan conversion
 - (b) Polygon filling
 - (c) Two dimensional graphic
 - (d) Antialiasing
4. If any line joining two interior points of a polygon lies completely inside the polygon, the polygon is
- (a) concave
 - (b) line
 - (c) circle
 - (d) convex
5. Rotations are performed about some fixed point called
- (a) Centre
 - (b) End
 - (c) Pivot
 - (d) Start
6. _____ is a kind of transformations which produces distortion in the shape of an object.
- (a) Rotation
 - (b) Translation
 - (c) Shearing
 - (d) Scaling

7. The transformation which maps the viewing co-ordinates to normalized device co-ordinate is called _____
- (a) Viewing transformation
 - (b) Translation
 - (c) Homogeneous transformation
 - (d) Normalization transformation
8. A regular rectangular area specified in world coordinates is called a
- (a) View
 - (b) Region
 - (c) Window
 - (d) Segments
9. Which surface algorithm is based on perspective depth?
- (a) Depth comparison
 - (b) Z-buffer algorithm
 - (c) Subdivision method
 - (d) Back-face removal
10. Z-buffer algorithm are
- (a) Simplest algorithm
 - (b) Complex algorithm
 - (c) Largest algorithm
 - (d) Midpoint algorithm

PART B — ($5 \times 5 = 25$ marks)

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

Each answer should not exceed 250 words.

11. (a) Comment on GUI.

Or

- (b) Describe the advantages and disadvantages of LCD panels.

12. (a) What are the problems in Scan conversion technique?

Or

- (b) Illustrate the Boundary fill algorithm.

13. (a) How do you perform 2D Rotation Transformation?

Or

- (b) Explain the 3-D Shearing Transformation.

14. (a) Discuss the Midpoint subdivision method.

Or

- (b) What is the difference between widow and viewport?

15. (a) Write note on Neuwell's approach.

Or

- (b) Differentiate between object space and image space method.

PART C — ($5 \times 8 = 40$ marks)

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

Each answer should not exceed 600 words.

16. (a) Discuss the Raster Scan and Random Scan Display devices.

Or

- (b) Write note on Memory tube displays and Plotters.

17. (a) Illustrate Flood fill algorithm and Scan Line fill algorithm.

Or

- (b) Describe the steps involved in Bresenham's Line drawing Algorithm.

18. (a) How to perform 2-D Translation and Scaling Transformation? Explain.

Or

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

19. (a) How to perform 2-D clipping of straight line segments? Explain.

Or

- (b) Explain the working of Polygon Clipping methods.

20. (a) Discuss the Depth-Buffer method.

Or

- (b) Illustrate the working of Painter's Algorithm.
-