C 60101

Name.....................................

Reg. No..................................

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH 2019

(CUCBCSS)

B.C.A.

BCA 6B 18 (E1)—COMPUTER GRAPHICS

Time : Three Hours

Maximum : 80 Marks

Part A

*Answer **all** questions.*

Each question carries 1 mark.

1. The maximum number of points that can be displayed without overlap on a CRT is referred as ——————.

2. The frame buffer of a colour system with multiple bits per pixel is called as ——————.

3. GKS stands for ——————.

4. —————— is the time taken by the pixel to emit light after the CRT beam is removed.

5. A shadow-mask CRT has —————— number of phosphor dots at each pixel position.

6. Digitizing a picture definition given in an application program into a set of pixel-intensity values for storage is called ——————.

7. The initial value of the decision parameter in Midpoint circle algorithm is ——————.

8. State True *or* False. Successive scaling operations are additive.

9. The —————— transformation about the line $y = 0$ keeps x values same, but flips the y values of co-ordinate position.

10. Mapping of a part of a world-coordinate scene to device co-ordinates is known as ——————.

$(10 \times 1 = 10 \text{ marks})$

Part B

*Answer **all** questions.*

Each question carries 2 marks.

11. What is meant by **refreshing** ?

12. What are flat panel displays ?

13. What are affine transformations ?

Turn over

14. What do you mean by perspective projection ?

15. What is z-buffer method ?

(5 × 2 = 10 marks)

Part C

Answer any **five** *questions.*
Each question carries 4 marks.

16. Explain the working of CRT ?

17. How colour lookup tables are used to reduce frame buffer storage requirement ?

18. Explain Raster scan display processor.

19. Discuss about any *two* hard copy devices.

20. Discuss about properties of circle.

21. Discuss about various coordinate representations.

22. Explain two dimensional fixed point scaling transformation.

23. How region codes are assigned to line endpoints in Cohen Sutherland line clipping algorithm ?

(5 × 4 = 20 marks)

Part D

Answer any **five** *questions.*
Each question carries 8 marks.

24. Discuss in detail about applications of computer graphics.

25. Briefly explain popular graphics input devices.

26. Explain Bresenham's line drawing algorithm.

27. Demonstrate how reflection and shear transformations can be applied ?

28. Explain three-dimensional Rotation transformation.

29. Explain Basic positioning method and Rubber band method.

30. Explain Sutherland-Hodgeman polygon clipping algorithm.

31. Write short notes on a) DVST b) Grayscale c) Point clipping d) Dragging.

(5 × 8 = 40 marks)