



SA – 919

VI Semester B.C.A. Degree Examination, April/May 2015

(Y2K8 Scheme)

COMPUTER SCIENCE

BCA 603 : Computer Graphics

Time : 3 Hours

Max. Marks : 90/100

**Instructions :** Answer **all** Sections.

Section – **D** is applicable to students of **2013-14** and onwards.

(**100** marks – **2013-14** and Onwards / **90** marks – **Prior to 2013-14**).

SECTION – A

Answer **any ten** questions. **Each** question carries **two** marks. (10×2=20)

1. Define Computer Graphics. Mention any one graphics software.
2. Define vector display.
3. List different Line Caps.
4. What are the different types of fill styles ?
5. Define 2D transformation.
6. Write a  $3 \times 3$  transformation matrix to rotate an object.
7. What are world Co-ordinates ?
8. Define Intensity cueing.
9. Explain the concept of segment.
10. Mention the ways in which a segment file can be stored.
11. What are the advantages of gravity field ?
12. Define Locator and Pick devices.

SECTION – B

Answers **any five** questions. **Each** question carries **5** marks. (5×5=25)

13. With neat diagram explain the working of CRT.
14. Write the DDA Line drawing algorithm.
15. Explain two Dimensional Translation.

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16. Explain different forms of Text Clipping.
17. Explain parallel and perspective projection.
18. Explain different segment attributes.
19. Explain Dragging and Rubber band Technique as applied to interactive computer graphics.
20. Explain different actions performed by a mouse.

## SECTION - C

Answer **any three** questions. **Each** question carries **15** marks. (3×15=45)

21. a) List any 5 applications of computer graphics. Explain any two applications. 10  
 b) Explain the working of shadow mask CRT. 5
22. a) Explain Bresenham's line drawing algorithm and illustrate with end points (17, 6) and (28, 14). 8  
 b) Explain attributes of line in detail. 7
23. a) Explain Composite Transformations. 9  
 b) Write a  $3 \times 3$  transformation matrix for the following composite transformations.
  - i) Translate the image to the left by 8 units and up by 12 units.
  - ii) Rotate clock wise by  $90^\circ$
  - iii) Enlarge the image to twice its size. 6
24. a) Explain Cohen-Sutherland line clipping algorithm. 10  
 b) Explain polygon tables. 5
25. Write short notes on : (5+5+5)
  - a) Sketching
  - b) Constraints
  - c) Selection by name.

## SECTION - D

Answer **any one** question. **Each** question carries **10** marks. (1×10=10)

26. a) Explain scan line algorithm for area filling. 5  
 b) Explain Raster Method for Transformation. 5
27. a) Explain polygon clipping and point clipping. 5  
 b) Write a short note on octrees. 5