



MS – 540

VI Semester B.C.A. Degree Examination, May/June 2014  
(Y2K8 Scheme)

Computer Science

BCA 603 : COMPUTER GRAPHICS

F – 100 – 2013-14 and Onwards/R – 90 – Prior to 2013-14

Time : 3 Hours

Max. Marks : 90/100

- Instructions :** 1) Section **A, B** and **C** is common to **all**.  
2) Section **D** is applicable to the students who have taken admission in **2011-2012**.  
3) **100** marks for **fresh** students of **2013-2014** onwards and **90** marks for **repeater** students prior to **2013-2014**.

SECTION – A

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

- 1) Define the terms persistence and resolution.
- 2) Define a bitmap and pix map.
- 3) What is staircase effect ?
- 4) What is line cap ? List any two line caps.
- 5) What is shearing ?
- 6) Distinguish between uniform scaling and differential scaling.
- 7) What is exterior clipping ?
- 8) Explain depth cueing.
- 9) Give any two functions for segmenting.
- 10) Draw the segment format diagram.
- 11) Explain gravity field effect.
- 12) Explain any two stroke devices.

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## SECTION – B

- II. Answer **any five** questions. **Each** questions carries **5** marks. **(5×5=25)**
- 13) Explain any five applications of computer graphics.
  - 14) Give different attributes for line in detail.
  - 15) Explain general pivot point rotation for a 2-dimensional object.
  - 16) What is clipping ? Explain different forms of text clipping.
  - 17) Explain about Bezier curves.
  - 18) What is a segment file and what are its attributes ?
  - 19) Explain rubber band method and dragging.
  - 20) Bring out the differences between pointing and positioning devices.

## SECTION – C

- III. Answer **any three** questions. **Each** questions carries **15** marks. **(3×15=45)**
- 21) a) With a neat diagram explain the working of a shadow mark CRT. **8**  
b) Explain difference between Random Scan and Raster Scan Systems. **7**
  - 22) a) Write the Bresenham's circle algorithm and plot a circle of radius  $r = 10$  and center as origin for first quadrant only. **10**  
b) Explain scan line algorithm for area filling. **5**
  - 23) a) What is transformation ? Explain two dimensional translation rotation and scaling with an example. **9**  
b) Explain window to viewport transformation. **6**
  - 24) a) Explain Cohen-Sutherland method of line clipping algorithm with an example. **8**  
b) What is octrees ? How are they used to represent 3D objects ? **7**
  - 25) a) What is multiple and menu selection ? Explain with example. **7**  
b) Explain dynamic manipulation in interactive input techniques. **8**
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SECTION - D

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

**Note :** Section **D** should be answered by students of 2013-2014 onwards **only**.

- 26) a) Explain the DDA line drawing algorithm with an example. 5
- b) Explain the two dimensional transformation of reflection about the x-axis and y-axis. 5
- 27) a) Explain 2D composite transformation. 5
- b) Illustrates polygon tables with an example. 5

SECTION - A

- 1. Answer any ten questions. Each question carries two marks. (10×2=20)
- 2. Define the terms resolution and resolution.
- 3. Define a bitmap and pixel.
- 4. What is staircase effect?
- 5. What is line cap? List any two line caps.
- 6. What is dithering?
- 7. Distinguish between uniform scaling and differential scaling.
- 8. What is exterior clipping?
- 9. Explain depth coding.
- 10. Explain two functions for engineering.
- 11. Draw the segment format diagram.
- 12. Explain gravity fold effect.
- 13. Explain any two stroke devices.