VI Semester B.C.A. Examination, May 2016
(Y2K8 Scheme) (F + R)
COMPUTER SCIENCE
BCA – 603 : Computer Graphics
(100 Marks 2013-14 and Onwards/90 Marks Prior to 2013-14)

Time : 3 Hours
Max. Marks : 100/90

Instructions: 1) Answer all Sections.
2) Section D is applicable to students of 2013-14 and Onwards.

SECTION – A

Answer any ten questions. Each question carries two marks. (10x2=20)

1. Define persistence and resolution.
2. Define frame buffer.
3. What are the different fill styles to fill a polygon?
4. What are the disadvantages of DDA line drawing algorithm?
5. Define reflection in 2D transformation.
6. What are the methods used for smoothly joining two line segments?
7. Give a 3 x 3 transformation matrix to reduce an object to half its original size.
8. What is exterior clipping?
9. What is an octree?
10. What are the different basic functions of segment?
11. What is rubber band method to create an object?
12. What are the two types of graphical interaction devices?
SECTION – B

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

13. Explain any five applications of computer graphics.


15. Explain general fixed point scaling.

16. Explain window-to-viewport co-ordinate transformation.

17. Explain parallel and perspective projection in 3D transformation.

18. What is the use of segments and explain segment attributes?

19. Explain positioning techniques and constrains in interactive graphics.

20. Explain the different actions performed by a mouse in graphical input device.

SECTION – C

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

21. a) Explain the working of CRT with a neat diagram.
   b) Differentiate between raster scan and random scan display.

22. a) Explain in detailed Bresenhams line drawing algorithm with a suitable example.
   b) Explain different character attributes in detail.

23. a) Explain 2D basic transformation with suitable illustrations.
   b) Consider a polygon with 4 coordinate points (60, 40), (20, 0), (60, 0), (40, 100)
      with scaling factor $S_x = 2$ and $S_y = 2$. Plot the new coordinate point for the polygon.

24. a) Explain Cohen-Sutherland line clipping algorithm with an example.
   b) Explain polygon surfaces.
25. Write a short notes on:
   a) Gravity field  
   b) Dragging  
   c) Selection.  

   **SECTION – D**

   Answer **any one** question. **Each** question carries **ten** marks.  

   26. a) Explain the different attribute for line.  
   b) Explain two types of shear transformation.  

   27. a) Explain 3D rotation in detail.  
   b) Write short notes on Bezier curves.