Roll No. ....

BCA–401(N)

B. C. A. (Fourth Semester)
EXAMINATION, May, 2013

(New Course)

Paper First

COMPUTER GRAPHICS AND MULTIMEDIA
APPLICATION

Time : Three Hours]   [*Maximum Marks : 75*

Note : Section A is compulsory. Attempt any *seven* questions
from Section B and any *one* question from Section C.

Section—A

1. Multiple Choice Questions :   1 each

    (i)   Which of the following is not a clipping algorithm ?

        (a)   Sutherland-Cohen algorithm

        (b)   Cyrus-beck algorithm

        (c)   Mid-point subdivision algorithm

        (d)   DDA algorithm

    (ii)   The light pen is a :

        (a)   Graphics input device

        (b)   Graphics output device

        (c)   Both (a) and (b)

        (d)   None of these

P. T. O.

(iii) Special system designed for same training application are known as :

(a) GUI

(b) Simulators

(c) Video display device

(d) None of these

(iv) The anti-aliasing technique which allow shift of 1/4, 1/2 and 3/4 of a pixel diameter enabling a closer path of a line is :

(a) Pixed passing

(b) Filtering

(c) Intensity compensation

(d) Sampling technique

(v) If the eccentricity is less than one, then the conic is :

(a) Circle

(b) Parabola

(c) Ellipse

(d) Hyperbola

2. Fill in the blanks :   2 each

(i) The .... simply reads each successive byte of data from the frame buffer.

(ii) Depth method is related to ....

(iii) Multimedia highway is ....

(iv) The ISO standard for computer graphics is ....

(v) Graphic and image processing techniques used to produce transformation of one object into another is called ....

3. (a) True/False :   1 each

   (i) An output device is a tool you use to store information for use at later time.

   (ii) A desktop computer fully functional computer design to carry around and sun on battery power.

   (iii) Resolution of a printer is the number of dots per inch it produces.

   (b) Differentiate vector scan display and raster scan display.
                                                          2

Section – B   6 each

4. What is Computer Graphics ? Explain various application areas of Computer Graphics.

5. Show how shear transformation may be expressed in terms of rotation and scaling.

6. Write down the steps of midpoint ellipse drawing algorithm.

7. Explain the conceptual framework of computer graphics.

8. What is CRT ? Explain different components of CRT (Cathode Ray Tube).

9. Explain the Sutherland and Cohen subdivision algorithm for line clipping.

10. Find the normalization transformation window to viewpoint, with window, lower left corner at (1, 1) and upper right corner at (3, 5) onto a viewpoint with lower left corner at (0, 0) and upper right corner at (Y_1, Y_2).

11. Write a note on B-spline curve.

12. Differentiate multimedia skills and motivation for multimedia usage.

13. Define multimedia. Explain different computer animation functions.

Section — C

14. (a) Explain depth buffer method for hidden surface detection.   4

    (b) What are the basic disadvantages of Z-buffer method ?   4

    (c) What is the difference between Bezier and Hermit curve ? Explain in brief.   5

15. Find a transformation of triangle A (1, 0), B (0, 1), C (1, 1) by : $6\frac{1}{2}$ each

    (a) Rotating 450 about the origin and then translating one unit in x and y-direction.

    (b) Translating one unit in x and y direction and then rotating 45° around the origin.