

Roll No. ....

## **BCA–17**

### **Interactive Computer Graphics**

Bachelor of Computer Application

(BCA–16/BCA–11)

Fifth Semester, Examination, 2017

**Time : 3 Hours**

**Max. Marks : 60**

**Note :** This paper is of **sixty (60)** marks containing **three (03)** sections A, B and C. Attempt the questions contained in these sections according to the detailed instructions given therein.

#### **Section–A**

##### **(Long Answer Type Questions)**

**Note :** Section ‘A’ contains four (04) long answer type questions of fifteen (15) marks each. Learners are required to answer *two* (02) questions only.

1. What do you mean by the term Computer Graphics ?  
Give the difference between Bean penetration method and Shadow mask method.
2. How many types of polygons are there ? Explain the scan line fill algorithm and floor fill algorithm briefly.
3. Write and compare the DDA algorithm and Bresenham’s line drawing algorithm.
4. Draw the architecture of simple raster graphics system.

**Section-B****(Short Answer Type Questions)**

**Note :** Section 'B' contains eight (08) short answer type questions of five (5) marks each. Learners are required to answer *four* (04) questions only.

1. What is GUI ?
2. Write short notes on Graphics Software GKS and PHIGS.
3. Derivate the Bresenham's circle genesation algorithm.
4. Explain the Reflection about :
  - (i) X-axis
  - (ii) Y-axis
  - (iii) Origin
  - (iv) Line  $Y = X$
  - (v) Line  $Y = -X$
5. What is Display adapter ? Explain VGA and SVGA in detail.
6. Explain vector and Raster devcies with suitable example.
7. Derivate the matrices for basic 3D transformation.
8. What is the use of Animation in Computer Graphics ?

**Section-C****(Objective Type Questions)**

**Note :** Section 'C' contains ten (10) objective type questions of one (01) mark each. All the questions of this section are compulsory.

Choose the correct answer :

1. The ISO standard for computer graphics is :
  - (a) Graphics kernel system

- (b) Computer Graphics standard
  - (c) Graphics standard system
  - (d) None of these
2. Computer graphics model are now commonly used for making :
- (a) Music videos
  - (b) Television shows
  - (c) Motion pictures
  - (d) All of these
3. (3, 6) is a point on a circle that has center at the origin. Which of the following points are also on circle ?
- (a) (3, - 6)
  - (b) (-3, 6)
  - (c) (-3, -6)
  - (d) All of these
4. Which one of the following defines the 2-Dimensional translation ?
- (a)  $P' = P + T$
  - (b)  $P' = P - T$
  - (c)  $P' = P * T$
  - (d) None of these
5. RGB model is used for :
- (a) Computer Display
  - (b) Painting
  - (c) Printing
  - (d) None of these

6. Raster graphics are composed of :
  - (a) Paths
  - (b) Line and Curve
  - (c) Pixels
  - (d) Pallatte
7. Bresenham's Algorithm can be used :
  - (a) To scan a line
  - (b) To fill the color in a polygon
  - (c) To clipping of a line
  - (d) None of these
8. A line with end points 4-bit region code as 0000 and 0100 is :
  - (a) Completely Invisible
  - (b) Partially visible
  - (c) Completely visible
  - (d) Trivially invisible
9. The maximum number of points that can be displayed without overlapping is :
  - (a) Persistance
  - (b) Frame buffer
  - (c) Resolution
  - (d) Aspect Ratio
10. The standard aspect Ratio for PC is :
  - (a) 6 : 5
  - (b) 4 : 3
  - (c) 3 : 2
  - (d) 5 : 3