# E-212

## B.C.A. EXAMINATION, Dec. 2017

(Fifth  Semester)

(B.  Scheme)  (Main  &  Re-appear)

(BCA)

BCA-303-B

COMPUTER  GRAPHICS

*Time :* 3 *Hours*]          [*Maximum Marks :* 100

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

**Note** : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

## Unit I

**1.** (a) What is computer graphics ? Specify its applications. **10**

(b) Explain the following terms in detail : **10**

(i) Pixel

(ii) CRT

(iii) Aspect ratio

(iv) Refresh Rate.

**2.** (a) What are Raster Scan and Random Scan Disply ? Explain which of the uses concept of lookup table. **8**

(b) Distinguish between Graphics Input Device and Hard Copy Devices. **12**

## Unit II

**3.** (a) Explain DDA Algorithm in detail with suitable examples. **10**

(b) Derive and explain Bresenham's circle drawing algorithm. **10**

**4.** Explain in detail Ellipse-Generating Algorithms. **20**

## Unit III

**5.** (a) Explain 2D Scaling, Rotation, Shearing and Reflection with examples. **15**

(b) What is Concatenation ? How does it works in Transformations ? **5**

**6.** (a) What is window to view port coordinate transformation ? Explain. **10**

(b) Explain Cohen-Sutherland line clipping algorithm with suitable examples. **10**

## Unit IV

**7.** What are Homogenous Coordinates in 3D Transformations ? Derive 3D transformation matrices for reflection about the three reference plan. **20**

**8.** Explain Quadtree and Octree data structure. **20**