**Karunya University**

**(Karunya Institute of Technology and Sciences)**

(Declared as Deemed to be University under Sec.3 of the UGC Act, 1956)

**Supplementary Examinations – June 2016**

**Subject Title: GRAPHICS AND ANIMATION Time : 3 hours**

**Subject Code: 14MT2005 Maximum Marks: 100**

**Answer ALL questions (5 x 20 = 100 Marks)**

1. **Compulsory:**

With necessary illustrations demonstrate the following geometrical transformations in Java 2D

a. Scaling

b. Rotation

c. Translation

d. Shearing

2. Explain how the following are constructed in Java 2D with necessary syntax, codes and illustrations

a. Rectangle 2D

b. Square 2D

c. Ellipse 2D

d. Circle 2D

e. Arcs 2D & its types

**(OR)**

3. Explain how the following are drawn with the help of a naïve drawing algorithm

a. Line (10)

b. Curve (10)

4. Explain how lighting is important in animation and what the different types of light sources commonly used are.

**(OR)**

5. Explain the following modeling techniques

a. Voxels (7)

b. Octrees (7)

c. Quadtrees (6)

6. Explain how the priority algorithms play an important role in displaying image on the plane.

**(OR)**

7. With special reference to gaming how does collision detection play an inevitable role – Justify.

8. Compare and contrast the different types of fogs that can be emulated in a graphic application. How can the same be implemented in Java?

**(OR)**

9. Describe the transformation of objects in the display pipeline.