**Reg. No. \_\_\_\_\_\_\_\_**

**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: COMPUTER AIDED DESIGN AND MANUFACTURING Time : 3 hours**

**Subject Code: 14ME2025 Maximum Marks: 100**

1. a. Briefly discuss the history of CAD/CAM development. (10)

b. List out the CAD and CAM tools required to support the design and manufacturing process. (10)

**(OR)**

2. a. Sketch neatly and discuss the working principle of Stereolithography and give its applications. (10)

b. Explain the working principle of 3D-printing with a neat sketch. List its advantages and disadvantages. (10)

3. a. Draw the schematic diagram of a cathode ray tube (CRT) and explain its operation in detail. Give some application. (10)

b. Explain the technology adapted in Raster Displays and list out its advantages over conventional display systems. (10)

**(OR)**

4. a. Derive the equation for Bresenham’s algorithm and write its advantages and limitations. (10)

b. Draw a neat flowchart showing the complete process for implementing the DDA algorithm. (10)

5. a. Write the technique involved in Cohen Sutherland Algorithm for clipping the lines. (10)

b. Explain minimax tests for polygons and edges for hidden line removal of overlapping boundaries. (10)

**(OR)**

6. a. Derive a simple equation for representation of curve geometry for a circle. (10)

b. Discuss in detail the nomenclature of Bezier curves and its various control points. (10)

7. a. Explain the following geometric modelling functions.

i. Design Analysis ii. Drafting iii. Manufacturing

iv. Production Engineering (10)

b. Discuss in detail about the solid modelling or 3D modelling and its applications over 2D. List out few softwares used for solid modelling. (10)

**(OR)**

8. a. Draw a neat flow chart and explain the steps involved in the development of a proven part program in NC machining. (10)

b. Sketch neatly and explain cutter radius compensation. (10)

**Compulsory:**

9.a.Explain the general motion commands Rapid positioning *(G00)* and Linear Interpolation *(G01)* with relevant sketches. (10)

b. Differentiate between the Computer Aided Part Programming and Manual Part Programming. (10)