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



**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

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

**End Semester Examination – April / May – 2017**

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| **Code :** | **14ME2025** | **Duration :** | **3hrs** |
| **Sub. Name :** | **COMPUTER AIDED DESIGN AND MANUFACTURING** | **Max. marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | How the CAD / CAM overlaid by product cycle? Explain with necessary sketch. | CO1 | 10 |
| b. | List out the applications of computer graphics. List out the important CAD packages used in Mechanical engineering. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | What are the various sections in IGES? Explain with suitable example. | CO1 | 10 |
| b. | How the computers are helpful in geometric modeling, engineering analysis and design evaluation in design process? | CO1 | 10 |
| 3. | a. | Describe DDA Line drawing Algorithm. Also calculate and sketch the pixels for a line drawn from (4, 4) to (12, 14). | CO1 | 10 |
|  | b. | What is transformation? How many types fo transformations ae there to change the geometry? | CO1 | 10 |
| (OR) | | | | |
| 4. | a. | Write a short notes on Hidden line removal. | CO2 | 10 |
|  | b. | Write a short notes on Hidden surface removal. | CO2 | 10 |
| 5. | a. | Difference between wire frame, solid and surface modeling and discuss the applications of CAD/CAM in any automobile industry. | CO2 | 10 |
|  | b. | Explain how B-spline curve are used in computer graphics with necessary sketches. | CO2 | 10 |
| (OR) | | | | |
| 6. | a. | Briefly discuss the following NC motion control systems with neat sketch.  i. Point -to-point  ii. Straight cut  iii. Contouring | CO2 | 10 |
|  | b. | Explain the types CNC machining centers with sketch and distinguish the features. | CO2 | 10 |
| 7. | a. | Sketch the basic elements of NC machine and explain them in detail. | CO2 | 10 |
|  | b. | Sketch neatly and distinguish the horizontal and vertical CNC machines. | CO2 | 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. | CO3 | 10 |
|  | b. | Sketch neatly and explain tool length compensation, cutter radius compensation. | CO3 | 10 |

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| **Compulsory:** | | | | |
| **9.** | a. | Enumerate the advantages of Computer Assisted Part Programming when compared to Manual Part Programming | CO3 | 10 |
|  | b. | Write the part program for the component shown in figure.  http://nptel.ac.in/courses/112103174/module7/lec4/images/d1.jpg | CO3 | 10 |