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

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**End Semester Examination – Nov/Dec – 2018**

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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. | List out the CAD and CAM tools required to support the design and manufacturing process. | CO1 | 10 |
| b. | How CAD / CAM is overlaid by product cycle? Explain with necessary sketch. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Explain the design process with a neat flow chart and its importance in considering its economics in the industry. | CO1 | 10 |
| b. | What are the various sections in IGES? Explain with suitable example. | CO1 | 10 |
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| 3. | a. | With a neat flowchart depict the complete process for implementing the DDA algorithm. | CO1 | 10 |
| b. | Explain about concatenated transformations with suitable example. | CO1 | 5 |
| c. | With a suitable diagram discuss about the scaling and rotation of a model. | CO1 | 5 |
| (OR) | | | | |
| 4. | a. | Perform 90° rotation of a point P(5, 1) about a pivot point (2, 2). Find P’. | CO1 | 5 |
| b. | Find the matrix that represents scaling of an object with respect to any fixed point? Given P(6, 8), Sx = 2, Sy = 3 and fixed point (2, 2). Use that matrix to find P’? | CO1 | 15 |
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| 5. | a. | Write the technique involved in Cohen Sutherland and Sutherland Hodgman Polygon Algorithm used in clipping the lines. | CO1 | 10 |
| b. | Compare Synthetic curves with analytic curves and explain the applications of B-spline curves. | CO1 | 10 |
| (OR) | | | | |
| 6. | a. | Sketch neatly and explain the Boolean operators in constructive solid geometry. | CO2 | 10 |
| b. | Write short notes on geometric entities and topological entities used in boundary representation technique with neat sketches. | CO2 | 10 |
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| 7. | a. | List the various types of feedback sensors used in CNC machine and mention the industry application of encoders. | CO2 | 10 |
| b. | How the automatic tool changers are used in the milling centres. Explain its advantages. | 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 |
|  | | **Compulsory**: |  |  |
| 9. |  | Write the part program for the component shown in figure  Related image | CO3 | 20 |