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Question Paper Code	12513
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B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2023

Fourth Semester

Mechanical and Automation Engineering
20MUPC404 - COMPUTER AIDED DESIGN
(Regulations 2020)

Duration: 3 Hours

Max. Marks: 100

PART-A (10 × 2 = 20 Marks)

Answer ALL Questions

- | | Marks,
K-Level, CO |
|---|-------------------------------|
| 1. Define design process. | <i>2,K1,CO1</i> |
| 2. What are the benefits of concurrent engineering? | <i>2,K1,CO1</i> |
| 3. Define translation and write matrix for translation. | <i>2,K1,CO2</i> |
| 4. Enumerate any two advantages and disadvantages of wireframe modeling. | <i>2,K1,CO2</i> |
| 5. Define Key framing. | <i>2,K2,CO3</i> |
| 6. List out various visualization approaches. | <i>2,K2,CO3</i> |
| 7. Define the following terms (a) Interference fit (b) Running fit and sliding fit. | <i>2,K2,CO4</i> |
| 8. Define tolerance stack-up. | <i>2,K3,CO4</i> |
| 9. Find the importance of CAD data exchange. | <i>2,K2,CO5</i> |
| 10. Write the objective of GKS-3D standard. | <i>2,K1,CO5</i> |

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

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| 11. a) Explain the different types of 2D transformation with examples. | <i>13,K1,CO1</i> |
| OR | |
| b) Determine (i) DDA algorithm (ii) Bresenham's line algorithm. | <i>13,K1,CO1</i> |
| 12. a) Derive the transformation matrix for a (i) Hermite curve (ii) B-Spline curve. | <i>13,K2,CO2</i> |
| OR | |
| b) State the important properties of Bezier curves. | <i>13,K1,CO2</i> |
| 13. a) List any two hidden surface removal algorithms with suitable examples. | <i>13,K2,CO3</i> |

OR

b) Sketch and explain the test used in visibility technique. *13,K2,CO3*

14. a) Explain assembly modeling in CAD and its types with suitable examples. *13,K2,CO4*

OR

b) Explain CAD interference checking capabilities and Write short notes on mechanism simulation. *13,K2,CO4*

15. a) Describe the IGES structure and methodology with suitable examples. *13,K2,CO5*

OR

b) Write short note on Drawing Exchange Format (DFX) Standard. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Explain the concept of product data exchange using STEP in detail. *15,K1,CO6*

OR

b) Explain in detail about CALS. *15,K1,CO6*