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Question Paper Code : 50884

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2023.

Sixth/Seventh Semester

Mechanical Engineering

ME 8691 — COMPUTER AIDED DESIGN AND MANUFACTURING

(Common to Mechatronics Engineering)

(Regulations 2017)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Mention any few applications of computer aided design in manufacturing.
2. What are the types of clipping?
3. What is B-spline surface?
4. What is Coons patch?
5. What is Graphical Kernel System(GKS)?
6. What is Initial Graphics Exchange Specification (IGES)?
7. Write any four applications of NC system?
8. What are the various types of motion control system?
9. Distinguish between dedicated FMS and random order FMS.
10. List the general methods used for grouping parts into part families.

PART B — (5 × 13 = 65 marks)

11. (a) Explain the conventional process of the product cycle in the conventional manufacturing environment.

Or

- (b) Explain the Cohen- Sutherland line-clipping approach with proper Sketches.

12. (a) Explain CSG of solid modeling techniques. (13)
- Or
- (b) Write a short notes on the following: (7 + 6)
- (i) Properties of Bezier Curves
- (ii) Properties of B-spline Curve.
13. (a) Explain the initial graphics exchange specification methodology in detail. (13)
- Or
- (b) Explain in detail about the Graphics Kernel system (GKS). (13)
14. (a) (i) Write short notes on Contouring motions. (8)
- (ii) Write down the application of Numerical control systems. (5)
- Or
- (b) What are the steps involved in NC procedure? Explain in detail.
15. (a) List and explain the various components of FMS.
- Or
- (b) Explain the steps involved in Retrieval type CAPP and Generative type CAPP system?

PART C — (1 × 15 = 15 marks)

16. (a) Write short notes on (8 + 7)
- (i) Open GL
- (ii) CAD standards
- Or
- (b) (i) Differentiate between analytical curves, interpolated curves and approximated curves. (4)
- (ii) What are the limitations of Hermite curve? (3)
- (iii) What are the advantages and disadvantages of wire frame modeling? (4)
- (iv) Why B-rep modeling approach are widely followed than CSG approach? (4)