Roll No. | | | | | | | | | | | | | **Total No. of Pages : 01**

Total No. of Questions : 08

M.Tech (ME) (Sem.–1)

ADVANCED DESIGN OF MECHANICAL SYSTEMS

Subject Code : MTME-103

M.Code : 74717

Date of Examination : 18-01-2023

Time : 3 Hrs. **Max. Marks : 100**

INSTRUCTIONS TO CANDIDATES :

1. **Attempt any FIVE questions in all, out of EIGHT questions.**
2. **Each question carries TWENTY marks.**

1. (a) Discuss the design procedure for developing a new product. What is aesthetic design?

   (b) Explain the term '*Design for safety and reliability*'.

2. Discuss in detail the objectives and constraints of design approach used in product design.

3. (a) Discuss the procedure to design a milling cutter.

   (b) What are the different types of Fits & Tolerances?

4. What is the impact of computers on the industrial design processes? List the benefits of integrating engineering, design and manufacturing with each other.

5. (a) What is the effect of part, symmetry, thickness, size and weight on handling time?

   (b) What is the empirical equation used to estimate the manual insertion time for both conical and curved chamfers?

6. What is the design features used to facilitate machining? Explain with the help of example.

7. (a) Explain Setu chair, what types of environmental impacts would be in the use stage of its life cycle?

   (b) How will you design the product on the basis of energy efficiency?

8. (a) In what ways can DFE help to improve the quality of a product, in terms of its functionality, reliability, durability, and reparability?

   (b) Discuss DFE guidelines according to each life cycle stage of a product.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.