

Roll No. ....

**22604**

**M. Tech. 1st Semester (ME) CBCS Scheme  
Examination – January, 2023**

**MACHINE TOOL DESIGN**

Paper : MTME21C4

*Time : Three Hours ]*

*[ Maximum Marks : 100*

*Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.*

*Note : Attempt five questions in all, selecting one question from each Unit. Question No. 1 is compulsory. All questions carry equal marks.*

1. Write short notes on the following : 4 × 5 = 20
- (i) Layout of Machine Tools
  - (ii) Static and Dynamic Stiffness
  - (iii) Design of Spindles
  - (iv) Regulation of Speed

**UNIT – I**

2. Explain the principles of machine tool design. 20

3. Discuss machine tool drives mechanism. 20

**UNIT – II**

4. Explain the basic design procedure for the design of beds. 20

5. Discuss model techniques used in design. 20

**UNIT – III**

6. Explain design of power screws. 20

7. Explain design of slide ways. 20

**UNIT – IV**

8. Discuss criteria and economic selection of machine tools. 20

9. Differentiate b/w feed and auxiliary motions. 20

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