

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-VII (NEW) EXAMINATION – WINTER 2020****Subject Code:2173408****Date:21/01/2021****Subject Name:Design of Machine Tools****Time:10:30 AM TO 12:30 PM****Total Marks: 56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

| | | MARKS |
|-----|--|-------|
| Q.1 | (a) Explain in brief, general engineering design process to machine tools | 03 |
| | (b) Write lathe machine tools parts and their functions. | 04 |
| | (c) Draw & explain a neat sketch any one mechanical transmission system | 07 |
| Q.2 | (a) Write advantages of machine tool design? | 03 |
| | (b) Briefly describe the hydraulic transmission | 04 |
| | (c) Write a short note on speed box design procedure. | 07 |
| Q.3 | (a) Briefly write aims of speed regulations | 03 |
| | (b) Write a classification of speed? | 04 |
| | (c) Describe function of speed box. | 07 |
| Q.4 | (a) Write a classification of feed boxes? | 03 |
| | (b) Briefly write machine tool structures and their requirements? | 04 |
| | (c) Design procedure for materials for machine tool structure for static stiffness. | 07 |
| Q.5 | (a) Write an application and advantages of slid ways. | 03 |
| | (b) Classify the types of bearings? | 04 |
| | (c) Explain different types of shapes of slid ways. | 07 |
| Q.6 | (a) What is the mean by antifriction bearing? | 03 |
| | (b) Write the bearing materials. | 04 |
| | (c) Write design procedure for materials for machine tool structure for dynamic stiffness. | 07 |
| Q.7 | (a) Write an application of spindle. | 03 |
| | (b) Write a design procedure of power screw? | 04 |
| | (c) Explain the shaft materials? | 07 |
| Q.8 | (a) Write the hoist components and work? | 03 |
| | (b) Describe the types of hoist materials | 04 |
| | (c) A comparison between Sliding bearing and antifriction bearing? | 07 |
