

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE- SEMESTER-VI (NEW) EXAMINATION – WINTER 2020**

**Subject Code:2162507**

**Date:29/01/2021**

**Subject Name:Allied Manufacturing Technique**

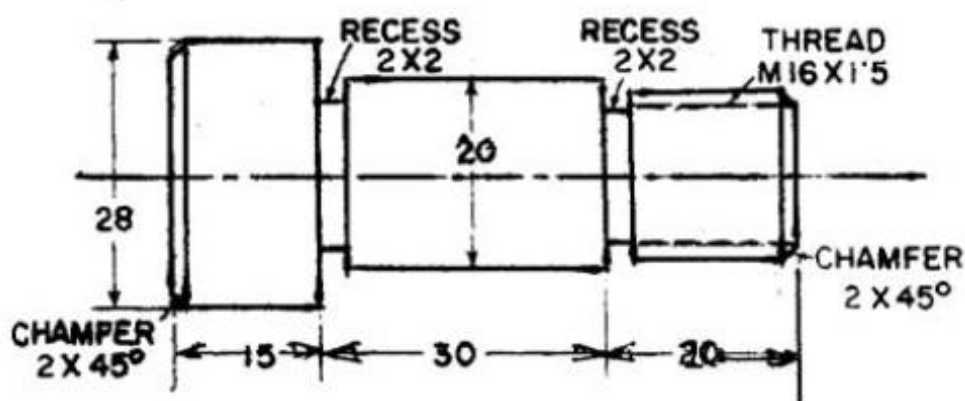
**Time:02:00 PM TO 04:00 PM**

**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) Describe THREE fundamental differences between conventional and unconventional machining process.                              | 03    |
|     | (b) Define the functions of transducers in ultrasonic machining. Enlist the major four elements of ultrasonic machining equipment? | 04    |
|     | (c) What is a dielectric? Explain the process in which it is used.   | 07    |
| Q.2 | (a) What are essential characteristics of an electrolyte used in ECM process?  | 03    |
|     | (b) Explain what is meant by non-transferred and transferred mode of plasma arc.   | 04    |
|     | (c) In which unconventional process Ruby Rod is used? Explain the process in Detail with neat sketch.                              | 07    |
| Q.3 | (a) Distinguish between Semi-automates and Centre Lathe.   | 03    |
|     | (b) What is the difference between 'Saddle type turret lathe' and 'Ram type turret lathe'.   | 04    |
|     | (c) What do you mean by tool layout? Draw the tool layout for semi-automatic lathe of following component shown in figure.         | 07    |



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|-----|---|----|
| Q.4 | (a) For which type of product "Automatic Cutting off Lathe" is used? Enlist operations that can be performed on this machine. | 03 |
|     | (b) Elaborate TWO specific characteristic and application of " Swiss type automatic lathe"                                    | 04 |
|     | (c) Give a brief classification of automatic lathe machine.   | 07 |

- Q.5** (a) What is Screw thread Rolling? **03**  
(b) With the neat sketch of thread terminology define (i) Pitch (ii) Crest (iii) Helix Angle (iv) Nominal Diameter. **04**  
(c) How screw thread micrometer differs from ordinary micrometer? Explain screw thread inspection with neat sketch. **07**
- Q.6** (a) Explain function of Thread Chasing Dial while cutting screw thread on lathe machine. **03**  
(b) How “Collapsible Tap” and “Self-Opening Die Head” improves productivity? **04**  
(c) Describe SEVEN general application of screw thread with example **07**
- Q.7** (a) What are different casting processes through which Gears can be manufactured? **03**  
(b) Describe any ONE Gear Finishing operation. **04**  
(c) Explain Gear Shaping operation on Gear Shaper Machine with neat sketch. **07**
- Q.8** (a) How gear teeth are manufactured with the help of rolling. **03**  
(b) Describe any one process of preforming of gears considering Gear Forming. **04**  
(c) With the diagram of “Cutting action of hobber” explain Gear hobbing and its merits as well as limitations **07**

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