

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-III • EXAMINATION – WINTER • 2014

Subject Code: 2133404

Date: 20-12-2014

Subject Name: Basic Manufacturing Processes

Time: 02.30 pm - 05.00 pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) What are the different machining operations performed on a lathe by holding work-pieces between centers or chucks? **07**
(b) Explain the principles of thread cutting in lathe machine with neat sketch. **07**
- Q.2** (a) Differentiate between a capstan, a turret and an engine lathe. **07**
(b) Find the time required for one complete cut on a piece of work 350 mm long and 50 mm in diameter. The cutting speed is 35 meters per minute and the feed is 0.5 mm per revolution. **07**
- OR**
- (b) Why chucks are used? List various types of chucks used in lathes. Describe any two in brief. **07**
- Q.3** (a) Describe twist drill nomenclature using sketches. **07**
(b) Explain the different type of drilling operations performed on drilling machine. **07**
- OR**
- Q.3** (a) State in brief the effect of relief angle of milling cutter in metal machining. **07**
(b) Discuss how cutting force changes with variation of speed and rake angle of milling cutter. **07**
- Q.4** (a) Describe elements of plain milling cutter with a neat sketch. **07**
(b) Compare between plain and universal milling machine. **07**
- OR**
- Q.4** (a) What is meant by a 'universal' grinder? How does it differ from a plain grinder? **07**
(b) Briefly describe the main features of cylindrical centre-type grinders. **07**
- Q.5** (a) What is centreless grinding? Describe centreless grinding operations. **07**
(b) Describe grit, grade and structure of a grinding wheel. **07**
- OR**
- Q.5** (a) What types of operations can be performed in a shaper efficiently. Describe them in brief. **07**
(b) Differentiate between Planer and shaper. **07**
