

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III • EXAMINATION – WINTER • 2014****Subject Code: 131903****Date: 18-12-2014****Subject Name: Manufacturing Process - I****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) Explain functions of basic parts of Lathe machine with neat sketch. **07**
(b) Classify Milling machine. Explain principal parts of Column and Knee type Horizontal Milling machine with neat sketch. **07**
- Q.2** (a) Draw a neat sketch of a Radial Drilling machine and discuss the important parts briefly. Also describe advantages, limitations and applications of Radial Drilling machine. **07**
(b) Explain various operations carried out on Boring machine with neat sketch. **07**
- OR**
- (b) Classify machine tools in detail. Explain types of motions in machine tools with example. **07**
- Q.3** (a) Enlist different types of milling cutters. Explain any three with neat sketch. **07**
(b) Discuss various lathe operations with neat sketch. **07**
- OR**
- Q.3** (a) Discuss and differentiate Up milling and Down milling process. **07**
(b) Enlist various alignment tests carried out on Lathe machine to check accuracy level. Describe any two with neat sketch. **07**
- Q.4** (a) Explain principal parts of standard Planner with neat sketch. Also describe various differences between Planner and Shaper. **07**
(b) Explain with neat sketch quick return mechanism of a Shaper machine. **07**
- OR**
- Q.4** (a) Discuss Slotted disc mechanism in Slotting Machine **07**
(b) Derive equation for calculating the taper angle by compound slide method on Lathe operation. **07**
- Q.5** (a) Explain following terminology of grinding wheel with suitable examples. **07**
i. Grit material
ii. Grit Size
iii. Bond grade
iv. Structure of the wheel
v. Bond material
(b) Classify Sawing machine. Explain Vertical Band Saw machine. Also discuss various application of Sawing machine. **07**
- OR**
- Q.5** (a) Describe Centre Less Grinding process with standard work feeding methods. **07**
(b) Classify Broaching machine. Explain Horizontal Pull Type Broaching machine. **07**
