

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE – SEMESTER III- • EXAMINATION – SUMMER • 2014****Subject Code:131903****Date: 23-05-2014****Subject Name: Manufacturing Process - I****Time: 02:30 to 05:00****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 the construction and operation of Upright drilling machine. **07**  
 (b) Explain the differences between the following : **07**  
 (i) Up milling and Down milling (ii) Steady rest and follower rest.

**Q.2** (a) Explain tumbler gear mechanism used in a lathe with neat sketch. **07**  
 (b) Explain with neat sketch the quick return mechanism of a shaper. **07**

**OR**

(b) Explain the different milling operations. **07**

**Q.3** (a) List the various lathe operations and explain any four lathe operations. **07**  
 (b) What are the lathe accessories and attachments ? List the various lathe accessories and attachments and explain the use of Mandrels on lathe. **07**

**OR**

**Q.3** (a) Distinguish simple indexing and compound indexing of a milling machine. **07**  
 (b) Explain various drilling operations with neat sketch. **07**

**Q.4** (a) Describe the coding of grinding wheel as per ISI. **07**  
 (b) List the various types of grinding machines and explain any one grinding machine. **07**

**OR**

**Q.4** (a) Differentiate between Capstan and Turret lathe. **07**  
 (b) Explain Broaching. Write advantages, limitations and applications of broaching. **07**

**Q.5** (a) Explain Jig-Boring machine. **07**  
 (b) List the types of metal cutting saws. Describe the working of reciprocating and circular sawing machines. **07**

**OR**

**Q.5** (a) Describe the alignment tests to check geometric accuracy of a lathe. Name instruments and equipments needed for these tests. **07**  
 (b) With the help of neat sketch explain Column & Knee type milling machine. **07**

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