

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III • EXAMINATION – SUMMER 2013****Subject Code: 131903****Date: 23-05-2013****Subject Name: Manufacturing Processes - 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) Draw neat sketch of hydraulic shaper mechanism and explain its working. **07**
(b) Why different spindle speeds are provided on an engine Lathe? Explain. **07**

- Q.2** (a) Enlist types of taper turning methods used on a lathe machine. Explain with neat sketch tailstock set over method for taper turning. **07**
(b) Define a Basic Machine Tool. Classify them. What are the general requirements of machine tools? **07**

OR

- (b) Explain with neat sketches different kind of (i) Slides and slide ways (ii) general bed Structure of Base Machine Tools. **07**
- Q.3** (a) How stroke length and stroke position can be set on a shaper having crank and slotted link mechanism? **07**
(b) Enlist different types of milling cutters. Explain T- Slot milling with neat sketch. **07**

OR

- Q.3** (a) Differentiate between Capstan and Turret lathe. **07**
(b) Classify surface grinders. Explain with neat sketch the relative work, grinding wheel and table movements on reciprocating table type surface grinder. **07**
- Q.4** (a) (i) What are the essential differences between steady rest and follow rest? **04**
(ii) Write a short note on Rotating Dead Centre. **03**
(b) Draw a neat sketch of a radial drilling machine and name the important parts. **07**
What are advantages of radial drilling machine.

OR

- Q.4** (a) Discuss with sketch characteristics of conventional Up and Climb milling. **07**
(b) Enlist common methods of indexing using dividing head. Explain any two with suitable examples. **07**
- Q.5** (a) What could be the possible causes for the following drilling problems? **07**
(i) Breaking of drill (ii) Hole too large (iii) production of rough hole and
(iv) Breaking down of outer corner of cutting edges.
(b) Grinding wheel characteristics or performance of a grinding wheel depends on types of abrasive, grain size, structure and bonding material. Discuss the effect of each. **07**

OR

- Q.5** (a) Explain with neat sketch Horizontal pull type broaching machine **07**
(b) What are the common geometrical tests are performed on an engine lathe? For what purpose they are performed? Explain any three alignment test with neat sketch. **07**