

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V • EXAMINATION – SUMMER • 2014****Subject Code: 152002****Date: 13-06-2014****Subject Name: Manufacturing Technology-I****Time: 10:30 pm to 01:00 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 (i) cutting speed (ii) feed (iii) depth of cut for a lathe machine. Also discuss effects of them on the work piece. **07**
- (b) Find the time required on shaper machine for taking a complete cut on a plate 600 x 900 mm, if the cutting speed is 9 m/min. The return time to cutting time ratio is 1:4 and feed is 3 mm. The clearance at each end is 75 mm. **07**
- Q.2** (a) Differentiate between a planar and a shaper. **07**
- (b) What alignment tests are used for a drilling machine? **07**
Explain any two of them with neat sketch.
- OR**
- (b) How a grinding wheel is marked? **07**
Explain the system of marking.
- Q.3** (a) Briefly discuss the types of chips with neat sketches. **07**
- (b) Briefly explain the functions of the cutting fluid. **07**
- OR**
- Q.3** (a) With neat sketches explain how a lathe is specified. **07**
- (b) Differentiate between a capstan and a turret lathe. **07**
- Q.4** (a) Write a short note on 'Working of back geared head stock' with neat sketch **07**
- (b) Explain taper turning by setting over the tail stock center with neat sketch. **07**
- OR**
- Q.4** (a) (i) Enlist milling machine operations and explain any two with neat sketch. **04**
- (ii) Index 83 divisions. **03**
- (b) Explain (i) feed (ii) depth of cut (iii) machining time for drilling with neat sketch. **07**
Also state the equations used.
- Q.5** (a) With neat sketches explain vertical boring machine operations. **07**
- (b) Classify the broaches and explain in brief. **07**
- OR**
- Q.5** (a) Why alignment tests are required to be carried out for the machine tools? **07**
With neat sketches, explain any two alignment tests of shaper machine.
- (b) Write a short note on shaft and hole basis system. **07**
