

GUJARAT TECHNOLOGICAL UNIVERSITY**BE SEM-V Examination-Nov/Dec.-2011****Subject code: 152002****Date: 24/11/2011****Subject Name: Manufacturing Technology-I****Time: 2.30 pm -5.00 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) Describe construction and working of an Engine Lathe with neat sketch. **07**
(b) Enlist different Lathe operations and explain about any three with neat sketch. **07**

- Q.2** (a) Describe the working of the shaper and explain about quick return mechanism. **07**
(b) What are Limits and Fits? Discuss about the Indian Standard System of Limits and Fits. **07**

OR

- (b) Describe Column and Knee type milling machine with neat sketch. **07**

- Q.3** (a) Enlist different types of Drilling machines and describe construction and working of any one. **07**
(b) Enlist different Broaching operations and explain about it. **07**

OR

- Q.3** (a) Describe the elements of tool signature on straight shank, right hand single point cutting tool and enlist different tool materials. **07**
(b) Describe the following drilling operations with neat sketch. **07**
(i) Drilling (ii) Reaming (iii) Deep drilling

- Q.4** (a) (i) Calculate the time taken to turn a brass component of 60 mm diameter and 100 mm long, if the cutting speed is 45 m/min. and feed is 0.5 mm/rev., only one cut is to be considered. **07**
(ii) It is required to cut left hand threads of 5 mm pitch on 45 mm diameter bright bar with the help of 4 T.P.I. Lead screw. Find the gears and show the gearing arrangement, consider standard set of the gears available with the Lathe machine.
(b) Describe the following operations. **07**
(i) Lapping (ii) Honing (iii) Polishing and Buffing

OR

- Q.4** (a) Enlist different Milling cutters used for milling operations and explain about any three with neat sketch. **07**

- Q.4** (b) Differentiate between Cylindrical Grinding and Surface Grinding Machines. **07**

- Q.5** (a) Enlist different work holding devices of a Lathe and explain about it. **07**
(b) (i) Enlist different Milling Machines' attachments. **07**
(ii) Find the time required to take complete cut on a M.S. plate 500 x 750 mm, the cutting speed is 9 m/min, the return time to cutting time ratio is 1:4 and feed is 3 mm, consider the clearance at each end is equal to 75 mm.

OR

- Q.5** (a) Describe the Up Milling and Down Milling with neat sketch. **07**
(b) (i) Describe Alignment test of Lathe Machine. **07**
(ii) Explain the procedure of measurement of screw threads.