

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE SEM-III Examination-Dec.-2011

Subject code: 131903

Date: 13/12/2011

Subject Name: Manufacturing-Process-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) With the help of figure explain “Taper turning by setting over the tail stock method..” 03
(b) Explain in brief different types of Lathe-centres used on tailstock side of a lathe machine. 04
(c) Describe various types of chucks used on lathe machine 07
- Q:2 (a) With the help of front-view, top view and side –view draw single point cutting Tool geometry 03
(b) By drawing neat sketches explain following operations which are performed On drilling machine : (1) Counter boring (2) Counter sinking (3) Spot-facing (4) Trepanning 04
(c) With the help of figure explain ‘Hydraulic shaper mechanism’ 07
: OR :
(c) With the help of figure explain ‘Crank and slotted link quick return Mechanism’ 07
- Q:3 (a) Explain in brief various alignment tests carried out on Lathe-Machine to Check accuracy level specified by the supplier. 07
(b) With the help of neat sketch explain the “Jig Boring Machine” 07
: OR :
Q:3 (a) Explain in brief the various ‘Indexing – Methods ‘ used on milling machine. 07
(b) State the salient features of “Universal-Milling Machine Draw the ‘geometry profile generated in the work piece body while taking cuts by following cutters
: (1) Cylindrical cutter (2) Side and Face cutter (3) Double angle cutter (4) Tee-slot 07
Cutter.
- Q:4 (a) Explain the difference between ‘Capstan ‘ & ‘Turret ‘ lathe. 07
(b) Explain the standard marking system by using six symbols as per IS system 07
: OR :
Q:4 (a) Write advantages, limitations and applications of “Broaching-Machines “. 07
(b) With the help of neat sketches explain the “Setting of band saw teeth “. With The help of neat sketch explain the principle of operation of a horizontal band Saw machine. 07

- Q:5 (a) Explain the difference between : (1) 'Socket' & 'Sleeve' (2) "Up-milling & Down-Milling" (3) "Multispindle drilling machine" & "Gang drilling Machine" (4) Gang-Milling & Straddle-Milling (5) "Shaper-M/c & Planer M/c. 10
- (b) With the help of sketch only indicate "drive-motion" & "feed motion" for following machines: (1) Lathe-M/c. (2) Drill-M/c (3) Shaper-M/c (4) Planer-M/c. 04

:OR:

- Q:5 (a) Determine the tail-stock off-set to turn a taper of : (1) 5 degree on a bar of Length 300 mm (2) 20 mm to 30 mm on a job 200 mm long over its entire Length (3) 20 mm to 30 mm over a length of 200 mm from one end on a job 400 mm long. 05
- (b) Make 83 divisions using differential-indexing. 05
- (c) The pitch of a lead screw is 6 mm and pitch of the thread to be cut is 1.25 mm. Find the change gear train and draw it indicating no. of teeth on each spur-gear. Lathe-M/c is equipped with a set of spur gears ranging from 20 to 120 in steps of 5. 04
