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 Cutter. 07

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

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