

GUJARAT TECHNOLOGICAL UNIVERSITY**PDDC - SEMESTER-VII • EXAMINATION – SUMMER 2013****Subject Code: X 71902****Date: 14-05-2013****Subject Name: Production Technology****Time: 10.30 am - 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)** 1) Differentiate between single point cutting tool and multi-point cutting tool . **03**
 2) Tool signature of single point cutting tool as per A.S.A. **04**
(b) Explain the 3-2-1 principle of location to restrict the movement of job during machining to have accuracy . **07**
- Q.2 (a)** Explain briefly the working principle of USM process with neat sketch and state its applications and limitations. **07**
(b) What are the desirable characteristics of cutting fluids and cutting Tool materials ? **07**
- OR**
- (b)** Explain the types of tool wear and its mechanism. **07**
- Q.3 (a)** Differentiate between Jig and Fixture. Only sketch the different types of jig bushes. **07**
(b) Differentiate between cast structure and fabricated structure of the machine tool. **07**
- OR**
- Q.3 (a)** Explain Working principle of a gear shaper with Kinematic diagram .State its advantages . **07**
(b) Explain with neat sketch the concept of progressive die and compound die. **07**
- Q.4 (a)** Define: 1) Punching , 2) Blanking and 3) Lancing press operations with neat sketch. **07**
(b) State the gear finishing operations. Explain any one with neat sketch. **07**
- OR**
- Q.4 (a)** Write the steps to manufacture the thread by rolling method. State its advantages. **07**
(b) It is required to punch a hole of 10 mm diameter in a mild steel plate of 10 mm thick having shear strength of 600 N/mm^2 . Determine whether it is punched by punch material having compressive strength of 200 N/mm^2 , if not then what could be done to produce this hole ? **07**
- Q.5 (a)** Differentiate between capstan and turret lathe . **07**
(b) Explain briefly R-C circuit used in EDM process and state how metal removal takes place in this process. **07**
- OR**
- Q.5 (a)** Deduce the expression of critical tool life for maximum out-put in terms of tool changing time and exponent n of taylor equation of tool life $VT^n=C$. **07**
(b) Explain the principle of full-proofing in jig design with example. **07**
