

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE-SEMESTER VIII - EXAMINATION-Winter 2014****Subject Code: 181903****Date: 02/12/2014****Subject Name: Production Technology****Time: 02:30 pm - 05:00 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) Derive the Taylor's equation for tool life. **07**
- (b) What are chip breakers? Explain them briefly. If they are not used what adverse effects chip can produce on the work, tool and surroundings? **07**
- Q.2** (a) What are the different methods of gear manufacturing? List the methods and explain any one. **07**
- (b) Prove that:  $\tan \phi = r \cos \alpha / (1 - r \cos \alpha)$  **07**
- OR**
- (b) What are crater wear and flank wear? Explain. **07**
- Q.3** (a) Explain Laser beam machining process in detail. **07**
- (b) What are the different types of thread manufacturing processes? Explain with neat sketch. **07**
- OR**
- Q.3** (a) Describe water jet machining process with the help of neat sketch. State its advantages and application. **07**
- (b) What are common ejecting mechanisms used in power presses? Describe. **07**
- Q.4** (a) Describe the common bending operations performed on presses. **07**
- (b) Compare the merits and demerits of Turret and Capstan lathes with a conventional engine lathe. **07**
- OR**
- Q.4** (a) Explain the principle of 'Six point location'. **07**
- (b) Explain with the principle of EDM. State characteristics of dielectric fluid. **07**
- Q.5** (a) Explain the different machine tool structures. **07**
- (b) Differentiate between a jig and a fixture. Explain one clamping device. **07**
- OR**
- Q.5** (a) Define machinability and explain variables affecting it. **07**
- (b) Describe the methods of punch support. **07**

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