

**III B.Tech II Semester Supplementary Examinations, Apr/May 2006**  
**PRODUCTION TECHNOLOGY-II**  
**(Mechanical Engineering)**

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions  
All Questions carry equal marks

\*\*\*\*\*

1. (a) What are the principal angles of a single point cutting tool?  
(b) What do you mean by tool signature?  
(c) A single point cutting tool has a back rake of  $10^0$  and side rake of  $14^0$ . Calculate its
  - i. Orthogonal rake and
  - ii. Inclination angle when the approach angle is  $70^0$ . [4+4+8]
2. (a) What is the working of spindle? How required power is transmitted from Lathe Spindle to feed rod and lead screw.  
(b) Why Beds are seasonally hardened? Discuss the alternative arrangement of quick Ways on Lathe bed.  
(c) Differentiate between Rough and finish turning.  
(d) What is shoulder turning. State how many types of shoulders can be formed on Stepped shaft on lathe machine. [5+5+3+3]
3. (a) Why a normal tap can not be used to tap an axial hole on an automatic lathe?  
(b) Explain the working of a collapsible tap with a neat sketch. [6+10]
4. (a) Differentiate between shaping, planing and slotting as regards relative tool and work options.  
(b) Describe the operations of cutting T-slots on a shaper. [8+8]
5. (a) Explain the hole locating procedure in jig boring?  
(b) What are the types of jig bores? Discuss their merits and demerits. [6+10]
6. Sketch and explain the various job holding devices used on milling machines? [16]
7. Explain in detail the various types of Natural and Artificial abrasives. [16]
8. (a) Write in detail about the broaching process.  
(b) Explain in detail cutting elements of a broach tool. [8+8]

\*\*\*\*\*