

**III B.Tech II Semester Supplementary Examinations, Apr/May 2006**  
**ADVANCED MANUFACTURING TECHNOLOGY**  
**(Mechatronics)**

**Time: 3 hours**

**Max Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

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1. (a) How do the following parameters effect the cutting forces in metal cutting
  - i. Rake angle
  - ii. Depth of cut
  - iii. Cutting speed.
- (b) What are the different types of chips formed during machining? Explain them briefly. [6+10]
2. (a) How a centre lathe is specified? Discuss.
- (b) What are constructional features of tail stock? Explain with the help of neat sketch. [6+10]
3. (a) Explain with neat sketch any one type of shaper feed mechanisms
- (b) Sketch the typical tool forms for planning operations and explain their applications. [8+8]
4. (a) Explain the different types of holes and the processes used for manufacturing them.
- (b) Describe the construction features of a horizontal boring machine. [8+8]
5. How the milling machine is specified? Discuss the important constructional details of a milling machine. [16]
6. (a) What is the classification method that could be used for grinding machines? Give the applications of each variety of grinding machines.
- (b) Why is a soft wheel used on hard materials and vice versa? Explain briefly. [10+6]
7. (a) In the present context of mass production, what is the role of jigs and fixtures? State its advantages.
- (b) When is compound gearing required for differential indexing? [10+6]
8. (a) With the help of a neat sketch, explain how material is removed from a work piece in Ultrasonic Machining process.
- (b) What are the tool-electrodes used in Electric Discharge Machining? Describe their merits, demerits and applications. [8+8]

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