

III B.Tech II Semester Supplementary Examinations, April/May 2005
PRODUCTION PROCESSES-II
(Mechatronics)

Time: 3 hours

Max Marks: 70

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Define orthogonal cutting and the associated conditions.
(b) What is the function of the following in a Lathe?
 - i. Lead screw
 - ii. Feed rod
 - iii. Dail stock
 - iv. Compound rest.
2. (a) Explain the method of giving feed motion in shaping.
(b) What are the important elements of Jigs and fixtures? Briefly explain their functions.
3. What is the difference in the following?
 - (a) Cylindrical and centreless grinding
 - (b) Lapping and honing
 - (c) Conventional milling and universal milling machines.
 - (d) Milling cutters used in horizontal and vertical milling machines.
4. (a) Explain the method of linear measurement using slip gauges.
(b) With a schematic sketch explain the working principle of Talysurf.
5. (a) Which of the following systems is preferred? Give suitable reason and one example in each case.
 - i. Hole basis and shaft basis systems of fits
 - ii. Unilateral and bilateral tolerances.
(b) What is a comparator? Briefly describe the construction and operation of any one type of comparator.
6. (a) With a neat sketch show and mark all the elements of the geometry of a single point tool and their importance.
(b) Explain the broaching process for producing keyways and sketch the geometry of the associated broaching tool.
7. (a) Explain a method of measuring internal taper angle.
(b) How is the pitch measured on the spur gear?

8. Write short notes on any THREE of the following:

- (a) Method of screw thread cutting on a lathe.
- (b) Jig boring
- (c) Surface grinding
- (d) Numerical indices of surface roughness assessment and their definitions.
- (e) Best size wire in screw thread metrology.
