

III B.Tech II Semester Supplementary Examinations, April/May 2005
PRODUCTION TECHNOLOGY-II
(Mechanical Engineering)

Time: 3 hours**Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Why are chip breakers necessary? If the chips are not broken down and removed what adverse effects can they produce on the work, tool and surrounding?
- (b) During orthogonal cutting of mild steel at a feed of 0.25 mm/rev, and cutting speed of 25 m/min., it was observed that average thickness of the chip was 0.5 mm. Determine the chip reduction coefficient, shear angle and shear strain along the shear plane. The tool has the following geometry:
Inclination angle = 0°
Orthogonal rake = 10°
Principal cutting edge angle = 75°
Auxiliary cutting edge angle = 8°
Orthogonal clearance = 6°
Nose radius = 1mm
Also sketch the tool geometry.
2. (a) Distinguish between generating and forming in metal cutting. Lathe operations come under which one of these?
- (b) How do you classify lathes based on their production capability? Illustrate.
3. (a) How capstan and turret lathe machine are specified
- (b) What is the purpose of tracer controlled lathe machine? State its advantages over an automatic lathe.
- (c) Define machine centre. What are the advantages of machine centre on other machine
4. (a) Explain with neat sketches about various types of table drive mechanism of planer.
- (b) Illustrate and describe the friction disc mechanism used in a planer.
5. (a) How is the drilling machine specified?
- (b) Sketch a precision drilling machine and indicate the various parts.
6. (a) Explain the functions of a universal dividing head.
- (b) Describe the setup and procedure of cutting a cam on a universal milling machine.

7. Explain in detail Centreless grinding machines
8. Explain in detail
 - (a) Horizontal broaching machine
 - (b) Vertical broaching machine
 - (c) Continuous surface broaching machine

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