

Roll No.....

Total No. of Questions : 08]

[Total No. of Pages : 01

Paper ID [PE502]

(Please fill this Paper ID in OMR Sheet)

M. Tech.

METAL CUTTING (PRE/PE - 502)

Time : 03 Hours

Maximum Marks : 100

Instruction to Candidates:

- 1) Attempt any **Five** questions.
- 2) All questions carry equal marks.

- Q1) (a) Discuss the various parameters and their significance taking example of a single point cutting tool.
(b) Discuss the significance of Merchant's force diagram.
- Q2) (a) Discuss the effect of cutting variables on chip reduction coefficient.
(b) Discuss the force system which comes to picture during milling operations.
- Q3) (a) What is hot machining? Why is it known so?
(b) Discuss the methodology for theoretical estimation of work-piece temperature.
- Q4) Describe all the fundamental factors that effect tool forces.
- Q5) (a) What is optimum tool life? How is it determined?
(b) Discuss the various types of wear and the means to determine them?
- Q6) (a) What is meant by machining optimization? How is it achieved?
(b) Discuss the stability criteria (plastic failure) for analysis of tool materials.
- Q7) (a) Describe the main method for testing of grinding wheels.
(b) Discuss the mechanics of lapping process.
- Q8) Write short notes on the following:
(a) Effect of helix angle in oblique cutting.
(b) Free body Abrasion.