Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐☐   Total No. of Pages : 02

Total No. of Questions : 08

M.Tech.(PE)   (Sem.–1)
# METAL CUTTING
Subject Code : PE-502
M.Code : 39003
Date of Examination : 17-01-2023

Time : 3 Hrs.   Max. Marks : 100

INSTRUCTIONS TO CANDIDATES :
1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.

1.   Draw and discuss the different types of chip formation. Mention the conditions favourable for each type of chip formation.

2.   What is the effect of following factors on shear plane angle :

     a) Rankine angle

     b) Cutting Speed

     c) Feed

     d) Depth of cut.

3.   How to measure the tool-chip contact temperature? Discuss the sources of error in measurement of tool-chip contact temperature?

4.   a) How do you differentiate between orthogonal cutting and oblique cutting?

     b) Explain the Lee and Shaffer's slip line method of determining shear plane angle.

5.   Classify the different types of tool life tests. Derive expressions for finding tool life constants in variable speed tests.

6. Discuss the mechanism of following processes :

   a) Lapping

   b) Honing

7. a) What is machinability? Discuss the important machinability criteria.

   b) What are ploughing forces? How are they determined?

8. What are the methods of determining stress distribution on the rake face of tool in a turning operation?

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.