

Roll No. 

Total No. of Pages : 01

Total No. of Questions : 08

**M.Tech.(PE) (E-I) (Sem.-2)**  
**INDUSTRIAL TRIBOLOGY**  
Subject Code : PE-512  
Paper ID : [E0449]

Time : 3 Hrs.

Max. Marks : 100

**INSTRUCTION TO CANDIDATES :**

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carries TWENTY marks.

- Q1 a) What is the role of friction in Tribology?  
b) Explain in detail surface energy and flash temperature theory.
- Q2 a) Discuss the concept of adhesion in friction.  
b) Explain how measurement of friction is done.
- Q3 a) Explain different types of wear.  
b) What do you mean by wear of cutting tool and dies? Discuss.
- Q4 a) Discuss the Mechanism of lubrication.  
b) Write applications of solid lubricants.
- Q5 Discuss in detail the concept of minimum film thickness and turbulence in oil bearing.
- Q6 Discuss the significance of Reynold's slip in rolling friction.
- Q7 Discuss the concept of bearing Hydrostatic and Dynamic.
- Q8 Explain how wear and friction is prevented and controlled in machines.