

Roll No. ....

Total No. of Pages : 2

**BT6/M11**

**8646**

**Tribology**

**Paper—ME-304E**

Time : Three Hours]

[Maximum Marks : 100

**Note :—** Attempt FIVE questions, taking at least ONE question from each unit.

**UNIT—I**

1. (a) Explain tribological systems and their characteristic features. 10  
(b) What do you mean by surface texture ? How it is measured ? 10
2. Define friction. What is simple adhesion theory of friction ? What are its limitations ? Also explain in detail the modified adhesion theory of friction. 20

**UNIT—II**

3. Define wear. What are various types of wears ? Explain in detail about abrasive wear. 20
4. (a) Explain the various methods to measure wear. 10  
(b) Explain the various wear resistant materials along with their applications. 10

**UNIT—III**

5. What is lubrication ? Discuss in detail the various regimes of lubrication. 20
5. (a) Explain with the help of sketches, the rolling contact bearings. Also describe its field of application. 10

- (b) Describe mechanism of pressure development in hydrodynamic bearings. 10

**UNIT—IV**

7. (a) Derive Reynold's equation in 2-D. Also state the assumptions made in deriving this equation. 14  
(b) What are porous bearing ? Explain. 6
8. (a) What is difference between hydrostatic and hydrodynamic bearings ? Also mention the field of applications of these bearings. 10  
(b) Explain with the help of a sketch, the working of gas bearings. Where gas bearings are used ? 10