Roll No. .....

Printed Pages : 2

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BT–6 / M–15

TRIBOLOGY

Paper–ME–304 E, Opt. II

Time allowed : 3 hours] *[Maximum marks : 100*

Note : Attempt any five questions, selecting at least one question from each unit.

Unit–I

1. (a) What is surface topography ? What are the methods used for surface characterization ? 10

   (b) What are the different technological properties of surfaces ? 10

2. Define friction and their causes. Discuss adhesive theory of friction. Also discuss the criticism of adhesive theory. 20

Unit–II

3. Define wear and explain their classification schemes. Discuss in detail the abrasive wear. How the abrasive wear can be prevented ? Discuss abrasive wear resistant materials. 20

4. Explain the quantitative laws of wear with different theories given by the researchers which have led to the formation of a wear equation. 20

Unit–III

5. Explain hydrostatic and elasto-hydrodynamic lubrication. What are the functions of lubricant ? Discuss the desirable properties of lubricant. 20

6. Explain the principle of rolling contact bearings with neat sketch. Give an account of classification of rolling contact bearings indicating their applications. 20

Unit–IV

7. Explain the geometry of journal bearing with neat sketch. What are the general requirements and different types of bearing material ? 20

8. Write short notes on following :

   (a) Gas bearings

   (b) Porous bearings

   (c) Thrust bearings

   (d) Bearing characteristics number and bearing modulus. 4×5