

20/05/2019

Roll No.

Total Pages : 02

BT-6/M-19
TRIBOLOGY
ME-304-E

36041

Time : Three Hours]

[Maximum Marks : 100

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit.

Unit I

1. (a) What is surface texture ? Define the terms : roughness, waviness, lay and flaw. 5
- (b) What do you mean by tribological systems ? What is their importance ? 5
- (c) Describe with sketch the working of a stylus profilometer. 10
2. (a) Explain in detail the adhesion theory of friction. 10
- (b) Describe the various methods to measure friction. 10

Unit II

3. What is Wear ? Describe in detail about adhesive and abrasive wear. 20

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4. (a) Explain fretting and fatigue wear. 10
(b) Explain the quantitative laws of wear. 10

Unit III

5. (a) Explain Stribeck's curve. What is its importance ? 10
(b) What is hydrodynamic lubrication ? What are the minimum conditions for the generation of pressure in hydrodynamic lubrication ? 10
6. (a) What is Elastohydrodynamic (EHD) lubrication ? Explain in detail. 10
(b) What are solid lubricants ? What are their applications ? 5
(c) How the lubrication of gears is performed ? Explain briefly. 5

Unit IV

7. Derive Reynold's equation. Also state the various assumptions made in deriving the equation. 20
8. (a) What are hydro static and hydro dynamic bearing ? Also describe their applications. 10
(b) What are porous bearings ? Explain their working. 10

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