

Surface Engineering of Nanomaterials

Week 1: Assignment



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Q1. Hint

The term tribology was mentioned for the first time in 1966 in the Jost Report, a study commissioned by the British government to investigate damage from wear. The committee headed by _____ estimated that application of basic principles of tribology could save the UK economy approx. £ 515 million per annum.

Q2. Hint

Google it

Q3. Hint

$$\mu = \tan(\theta)$$

Q4. Hint

Force of friction = coefficient of friction x weight

$$F = \mu N$$

Q5. Hint

Google it

Q6. Hint

Google it

Q7. Hint

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Q8. Hint

Stribeck curve is a curve between coefficient of friction and Harsey number. This curve indicates the behavior of a lubricant in action.

The zones are classified as:

Boundary region: Mean thickness of the lubricating film which is lower than the mean roughness height of the opposing surfaces.

Mixed lubrication: Lubricating film completely separates the surfaces.

Hydrodynamic lubrication shows continuous lubricating film which corresponds to the optimum operating zone.

Q9. Hint

An instrument that measures tribological quantities, such as coefficient of friction, friction force, and wear volume, between two surfaces in contact.

Q10. Hint

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