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MMMD - 204
M.E./M.Tech. II Semester
 Examination, June 2016
Industrial Tribology
 Time : Three Hours

Maximum Marks : 70

- Note : i) Attempt any five questions.
 ii) All questions carry equal marks.

1. a) What is wear? Explain the laws of wear. 7
 b) Explain with neat sketches the classification of wear measuring machines. 7
2. a) Discuss the laws of rolling friction. Suggest some laws of sliding friction analogous to those of rolling friction. 7
 b) Explain the dynamometer method used to measure sliding friction. 7
3. a) How rolling bearings are lubricated with grease? Discuss the factors on which the relubrication interval of a roller bearing depends. 7
 b) Discuss the different modes of bearing failure. 7
4. a) Suggest some methods to prevent and control friction in machines. 7
 b) Describe the situations which make liquid lubricants undesirable and ineffective which makes us to use solid lubricants. 7

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5. a) Derive the equation for the load bearing capacity, frictional power loss, energy losses of a hydrostatic step bearing. 7
 170 b) What is air film lubrication? Compare it with oil lubrication. 7
6. a) State and prove the pressure equation of a journal bearing. 7
 b) Explain the working of gas bearings with the help of neat diagram. 7
7. a) Explain Elastohydrodynamic lubrication. 7
 b) Explain Hydrodynamic lubrication with the help of diagram. 7
8. Write short notes on the following: 12
 - a) Static load carrying capacity
 - b) Dynamic load carrying capacity
 - c) Equivalent load carrying capacity
 - d) Role of resistors in hydrostatic step bearing

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