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Roll No

MMPD-302(A)**M.E./M.Tech., III Semester**

Examination, November 2018

Fluid Film Lubrication**(Elective-II)****Time : Three Hours****Maximum Marks: 70**

- Note :** i) Attempt any five questions out of eight.
ii) All questions carry equal marks.

1. What are basic objectives of Lubrication? Differentiate between Hydrodynamic and Hydrostatic lubricant in detail.
2. Discuss Reynold's equation for journal bearing with half sommerfeld conditions.
3. The following data is given for a 360° hydrodynamic bearing
Radial load = 2kN
Journal diameter = 50mm
Bearing length = 50mm
Viscosity of oil = 20 m Pa s
Specify radial clearance that need to be provided that when the journal is rotating at 2800 rpm. The minimum film thickness is 30 microns. Evaluate the corresponding coefficient of friction.

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4. a) Discuss the load bearing capacity of a hydrostatic bearing.
b) How do you measure temperature rise in a Journal bearing?
5. What is a Non circular bearing? Where it is used? Discuss its classification also.
6. a) Discuss the static characteristics of gas bearing.
b) Discuss the least square method for bearing.
7. a) What are the advantages of rolling contact bearing?
b) Discuss important application of rolling bearings.
8. Write short notes on:
 - a) Kingsbury analogy
 - b) Life prediction of roller bearing
 - c) Difference between oil and gas bearing
