

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2018

Course: Tribology (ADEG353)
Program: B. Tech. ADE
Time: 03 hrs.

Semester: VI
Max. Marks: 100

Instructions:

SECTION A

S. No.		Marks	CO
Q 1	Differentiate between kinetic coefficient of friction and static coefficient of friction and discuss their practical significance.	4	CO1
Q2	Explain the cause of seizure in a tribological system.	4	CO1
Q3	Differentiate between hydrodynamic and hydrostatic lubrication.	4	CO5
Q4	Explain the effect of temperature and speed on the wear rate of metallic tribo- pair.	4	CO2
Q5	Explain the kinematic and dynamic viscosity of the fluid.	4	CO2

SECTION B

Q6	Explain fatigue wear in the metal contact	10	CO3
Q7	Explain the physical properties of the lubricant.	10	CO1
Q8	Name the different methods of surface improvement techniques. Explain the ion implantation and coating.	10	CO4
Q9	Explain the wear in polymers. <div style="text-align: center;">OR</div> Explain the wear in ceramics.	10	CO3

SECTION-C

Q 10 a. b.	Explain the phenomena of the boundary lubrication. Deduce the expression for the pressure distribution and load bearing capacity in infinitely long plane fixed sliders bearing.	(10+10)	CO5
Q11	Enlist the assumption made by the hertz. Deduce the expression for the pressure distribution in the elastic contact body. <div style="text-align: center;">OR</div> Enlist assumptions and limitation of Reynold equation. Derive the generalized Reynolds equation of pressure development in lubricant film.	20	CO5