

Reg.No. _____



Karunya UNIVERSITY

(Karunya Institute of Technology & Sciences)
(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

End Semester Examination – Nov/Dec – 2016

Code : 14ME2038
Sub. Name : TRIBOLOGY IN DESIGN

Semester : 2016-17 ODD
Duration : 3hrs
Max. marks : 100

ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)

Q. No.	Sub Div.	Questions	Course Outcome	Marks
1.	a.	Explain about physical vapour deposition with a neat diagram.	CO1	15
(OR)				
2.	a.	Explain with flowchart illustrating the relationship between operating condition and types of wear.	CO1	15
3.	a.	Three identical balls rest on a smooth horizontal surface touching one another. A 4 th ball to same size and weight is placed on the top of the three balls to form a pyramid and the three balls are now held together by a horizontal string along the great circle of the ball. Determine the tension in the string, and coefficient of friction if the mass of each ball is 8.35g, load 392 N, ball diameter is 12.7 mm	CO2	15
(OR)				
4.	a.	Explain the different properties of lubricants.	CO2	15
5.	a.	Explain the following with a neat diagram 1) Hydrostatic lubrication. 2) Hydrodynamic lubrication. 3) Elasto-hydrodynamic lubrication.	CO1	15
(OR)				
6.	a.	Derive the generalized Reynold's equation from Navier-Stoke's and continuity equations. .Write any five assumptions used while deriving the generalized Reynold's equation	CO2	15
7.	a.	Explain about the drill wear test with a neat sketch.	CO2	15
(OR)				
8.	a.	Listout types of Surface treatment. Explain about micro structural treatment method with a neat diagram.	CO2	15
<u>Compulsory:</u>				
9.	a.	Explain testing procedures about dry sand-rubber wheel test with a neat diagram.	CO2	15

ALL THE BEST