



**ANJUMAN-I-ISLAM'S
KALSEKAR TECHNICAL CAMPUS, NEW PANVEL
School of Engineering & Technology**

Unit Test - 2

Subject: Machine Design II

Date: 24.10.2016

Marks: 20

Duration: 1 Hr

Class: BE ME Semester VII (CBSGS)

Branch: Mechanical Engineering

Instructions: 1. All questions are compulsory.

2. Use of non programmable calculator is permitted.

3. Assume suitable data if required.

4. Use of PSG data book is permitted

Q. 1: Compulsory

[08 Marks]

A cone clutch is required to transmit 15 KW at 960 rpm. Design Cone, Cup & driven Spline shaft.	CO
	CO5

Q. 2 Attempt Any ONE.

[12 Marks]

<p>a. Following data is given for 360° hydrodynamically lubricated bearing. Radial Load = 10 kN, Journal speed = 1450 rpm, L/D = 1, Bearing Length = 50 mm, Radial Clearance - 20 microns, eccentricity = 15 microns, specific gravity of lubricant as 0.86, specific heat of lubricant = 2.09 kJ/ kg °C. Find, 1. Minimum oil film thickness, 2. Coefficient of friction, 3. Power loss in friction, 4. Viscosity of lubricant in CP. 5. Total flow rate of lubricant in lit/ min</p>	CO
	CO4
<p>b. A single row deep groove ball bearing is used to a radial load of 4.5 kN and axial load of 2.5 kN. The bearing operates at 600 rpm. Considering the expected life of 18000 hours with survival probability 93% at operating temperature of 135°C. Select suitable standard bearing.</p>	CO
	CO3