ASSIGNMENT 7

1. Discuss about different types of screw fastening.
2. What is power screw? Give the application of power screw.
3. Give the definition of different types of terminology for power screw.
4. Derive the equation for the torque required to raise the load.
5. Derive the equation for the torque required to lower the load.
6. Prove the efficiency of power screw is maximum 0.5 or 50%.
7. What is the self locking and over-hauling condition for power screw?
8. A power screw having double start square threads of 25 mm nominal diameter and 5 mm pitch is acted upon by an axial load of 10 KN. The outer and inner diameters of screw collar are 50 mm and 20 mm respectively. The coefficient of thread friction and collar friction may be assumed as 0.2 and 0.15 respectively. The screw rotates at 12 r.p.m. Assuming uniform wear condition at the collar and allowable thread bearing pressure of 5.8 N/mm2, find: 1. the torque required to rotate the screw; 2. the stress in the screw; and 3. the number of threads of nut in engagement with screw.