

## ASSIGNMENT: 4

1. The speed reducer unit is to be designed for an input of 2 kw at 1600 rpm. The velocity ratio is 25. The worm is to be made of hardened steel and the gear of phosphor bronze having a static stress of 70 MPa. The approximate distance between two shafts is 120 mm. Taking a velocity factor  $K_v = 6/6+v$

And tooth form factor  $y = 0.154 - 0.912/Z_g$  and a wear factor of 0.7 find

- i. Standard module of gear
  - ii. Face Width of the gear & length of worm
  - iii. Check the design for wear load
2. Explain thermal consideration while designing worm and worm wheel drive.

