

DEPARTMENT: MECHANICAL

SEMESTER: 7TH

SUBJECT NAME: MACHINE DESIGN

SUBJECT CODE: 2171909

FACULTY NAME: PROF. JIGNESH PATEL

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.

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