

Course Title	تصميم الآلات	ميكانيكا	Final exam	
Date	27/06/2021	عدد الصفحات 1	Allowed time	4 hrs

Assume any missing data (open book exam)

A transmission shaft supporting a helical gear, pulley and a flexible flange coupling is shown in the following figure. The shaft is mounted on two pillow blocks. The diameter of the pulley and the pitch circle diameter of the gear are 400 mm and 250 mm respectively .The shaft is rotates at 400 rpm. Assume the density of all components is 8000 kg/m^3 . Design the following:

- 1- The shaft.
- 2- The flexible flange coupling.
- 3- The belt.
- 4- The bolts that support the bracket carrying the right pillow block.
- 5- The weld that supports the box carrying the left pillow block.

