

### ASSIGNMENT: 3

1. A pair of straight bevel gears, manufactured by generation, consists of 14 teeth pinion meshing with 85 teeth gear. The module at large end is 5.5 mm while the face width is limited to 0.25 times the slant height. The pinion is made of steel having ultimate tensile strength is 750 N / mm<sup>2</sup> and surface hardness of 210 BHN. The gear is made of cast iron having ultimate tensile strength 260 N / mm<sup>2</sup> and surface hardness of 210 BHN. The shaft angle is 90°. If the pinion rotates at 750 rpm, estimate the power that gear pair can transmit

