Homework Week 05
Due Week 06

1. Fill in the blanks for the following (20%)

A. Ratchets give ____________ motions
B. For ratchets, the ____________ stops the wheel from slipping back
C. Drives and Gearing provide ____________ connections
D. In friction drives, a ____________ is often employed to prevent belt slip
E. An ____________ is a tensioning mechanism is used to take up slack in a belt
F. In timing belts, the belt has ____________ to engage the notches in the pulley wheels
G. In chain and sprocket drives, ____________ can be added or removed
H. Spur gears have the same number of ____________
I. In a ____________ drive, the geared wheel meshes with a toothed rack
J. In a ____________ drive, the shaft has a screw thread that meshes with a toothed wheel
K. In bevel gears, the 2 wheels mesh at ____________ degrees
L. The ____________ is simpler form of the bevel gear and is easier to fabricate
M. In bevel gears, the ____________ changes from horizontal to vertical (and vice-versa)

2. Answer the following (10%)

A. Sketch a friction belt drive where the driving and driven wheels counter-rotate
B. Sketch a friction belt drive where the driving and driven wheels are rotating in different rotational planes

3. Define (1 to 2 sentences), describe (1 to 3 paragraphs) and provide sketches to support you definitions and descriptions for the following (10%)

A. Worm Gears
B. Ratchets used to lift heavy loads

4. Sketch and describe the 4 cycles of an 8-notch ratchet-crank mechanism (10%)

5. Automaton Project: Your Assembly should be reproduced by classmates. Bring Hardcopy of Build Instructions (50%)