Roster Number: _____

EML2322L Quiz 4 (2/16/21)

Please answer the following questions using **any** course materials (notes, hw, etc.) but do not work with others. If you mark a T/F question/statement FALSE, correct the underlined word to make it TRUE.

Name: _____

Lab Period: **T5-6 / T7-8 / T9-10**
(circle one) **W2-3 / W4-5 / W7-8 / W9-10**
R2-3 / R4-5 / R7-8 / R9-10

Fasteners are primarily designed to do what?

A. clamp parts together
B. act as pivots and axles
C. locate parts with relation to each other
D. answers A & B
E. answers A & C

What keeps a bolted joint tight?

A. lock washers or safety wire
B. elastic stop nuts
C. anaerobic sealer ("Loctite", etc.)
D. adequate torquing/stretching of the bolt
E. hope

Based on the over- versus under-tightening example, properly torqued fasteners can withstand how many more force application cycles before failure?

A. ~ 5 times
B. ~ 10 times
C. ~ 100 times
D. ~ 1000 times
E. ~ 10000 times
F. huh ☺ ?

Calculation of required fastener tightening torque depends on two variables:

A. material strength and thickness
B. desired preload and fastener diameter
C. number and size of fasteners
D. length of fastener and thread type
E. none of the above

Fastener threads should ALWAYS be loaded in _____ and should NEVER be loaded in _____.

What is the thread pitch for a 10-32 fastener?

A. 24
B. 32
C. 0.0420″
D. 0.0313″
E. 0.3125″
F. none of the above

How much radial clearance does a close fit hole for a ¼″ bolt leave? *(radial clearance = ½ total)*

A. 0.250″
B. 0.257″
C. 0.266″
D. 0.007″
E. 0.0035″
F. none

Select the appropriate tap drill size for tapping a ¼-28 thread in steel:

A. 0.250″
B. 0.213″
C. 0.2062″
D. # 1 (0.228″)
E. Size "F"
F. who cares ☺?

Which of the following qualifies as an industry-standard clearance hole size for a 3/8″ fastener?

A. 0.376″
B. 0.386″
C. 0.390″
D. 0.397″
E. choices B or D
F. all of the above

Based on the number of threads fastener joints require for full strength, what is the thinnest steel sheet which could be tapped for use with #10 screws?

Write the hole note for specifying six ¼″ screw holes ½″ deep in a 1″ thick steel plate: