CS441 – Discrete Structures for Computer Science
Instructor: Dr.Litman

Problems from Chapter 1.1.

Problem 2
   a) Not a proposition
   b) Not a proposition
   c) False proposition
   d) Not a proposition
   e) False proposition
   f) Not a proposition

Problem 8

a) If you have the flu, then you miss the final exam.

b) You do not miss the final exam if and only if you pass the course.

c) If you miss the final exam, then you do not pass the course.

d) You have the flu, or miss the final exam, or pass the course.

e) It is either the case that if you have the flu then you do not pass the course or the case that if you miss the final exam then you do not pass the course (or both, it is understood).

f) Either you have the flu and miss the final exam, or you do not miss the final exam and do pass the course.

Problem 10
a) You get an A in this class, but you do not do every exercise in this book. -- $r \wedge \neg q$
b) You get an A on the final, you do every exercise in this book, and you get an A in this class. -- $p \wedge q \wedge r$
c) To get an A in this class, it is necessary for you to get an A on the final. -- $r \Rightarrow p$
d) You get an A on the final, but you don't do every exercise in this book; nevertheless, you get an A in this class. -- $p \wedge \neg q \wedge r$
e) Getting an A on the final and doing every exercise in this book is sufficient for getting an A in this class. -- $(p \wedge q) \to r$
f) You will get an A in this class if and only if you either do every exercise in this book or you get an A on the final. – $r \Leftrightarrow (q \vee p)$

14. a) This is $F \to F$, which is true.
   b) This is $F \to F$, which is true.
   c) This is $T \to F$, which is false.
   d) This is $T \to T$, which is true.