

Practice Mid-Term (with Solutions)

Philosophy 1115
February 26, 2016

This is a practice mid-term examination. The structure of the actual in-class mid-term (which will be held on **Friday, March 4** in class) will be the same as this sample (*viz.*, 5 problems, worth 20 points each). On the actual exam, you can expect to see similar exercises (*i.e.*, problems with the same style and level of difficulty as these). Note: In the actual exam, you will be given a handout with some of our symbolization rules as well as the truth-table definitions of our five LSL connectives.

1 Problem #1

Answer the following five (5) True/False questions.

- ☐ **T** ☐ **F** 1. If the premises of an argument cannot (on pain of logical contradiction) all be true, then said argument is valid.
- T** ☐ **F** 2. An argument with premises that are all actually true and a conclusion that is also actually true must be valid.
- T** ☐ **F** 3. Adding premises to a invalid argument can never render it valid.
- ☐ **T** ☐ **F** 4. If an argument is sententially valid, then it is (absolutely) valid.
- T** ☐ **F** 5. The following is a sentence (wff) of LSL: ' $p \vee (q \vee r)$ '.

2 Problem #2

Part I: Symbolize the English sentence (2) into LSL. [Hint: use the letters (C , I , S) for your atomic sentences.]

(2) If you concentrate only if you are inspired, then you will not succeed unless you are inspired.

Part II: Construct the full truth-table for your LSL symbolization of (2).

Part III: Is your LSL symbolization of (2) logically true, logically false, or contingent?

Solution: This is problem #63 in the handout containing 75 additional LSL symbolization problems. As those solutions indicate, the LSL symbolization is ' $(C \rightarrow I) \rightarrow (\sim I \rightarrow \sim S)$ ', which is a *contingent* claim (truth-table left as an exercise).

3 Problem #3

Part I: Construct the full truth-table for the LSL sentence (3).

(3) $\sim(\sim(P \rightarrow Q) \rightarrow P)$

Part II: Is (3) logically true, logically false, or contingent?

Solution: This is problem #11 in the handout containing 25 additional truth-table problems. See the solutions at the end of that handout for the full truth-table of (3), which reveals that (3) is *logically false*.

4 Problem #4

Part I: Construct the full truth-tables for the following *pair* of LSL sentences (4.1) and (4.2).

(4.1) $A \leftrightarrow (A \leftrightarrow B)$

(4.2) B

Part II: Are (4.1) and (4.2) *logically equivalent*?

Solution: I'll leave Part I as an exercise. But, the answer to Part II is that (4.1) and (4.2) *are* logically equivalent.

5 Problem #5

Part I: Construct the full truth-tables for the following *pair* of LSL sentences (5.1) and (5.2).

$$(5.1) \quad A \leftrightarrow (\sim B \vee A)$$

$$(5.2) \quad B \rightarrow \sim(A \vee B)$$

Part II: (a) Are (5.1) and (5.2) *consistent*? (b) Are they *contradictory*?

Solution: I'll leave Part I as an exercise. The answer to Part II is: (5.1) and (5.2) are (a) consistent and \therefore (b) not contradictory.