MATHEMATICAL LOGIC — ASSIGNMENT FOUR

(1) Prove $\vdash (A \wedge B \supset C) \equiv (A \supset (B \supset C))$ in intuitionistic propositional logic.
(2) Write all the axioms of Peano Arithmetic.
(3) Show that it is impossible to prove the Completeness Theorem for first-order classical logic by constructing a canonical model $\mathfrak{M}$ that is also classifying, i.e., such that, every other model can be obtained from $\mathfrak{M}$ by a function which preserves truth.

    (Hint: It suffices to show that it is impossible for a specific theory.)

Each question is worth 12 points. The points in all the four assignments will be added together and the result will be divided by 4, and this will be the final result. Remember to mark your answer sheet with your name.

Date: June 15^{th}, 2021.