CSM 165: Discrete Mathematics for Computer Science
Assignment 1

January 30, 2021

Submission Deadline: Date: Tuesday February 02, 2021   Time: 11:59 PM

1. Let p and q be the propositions "The election is decided" and "The votes have been counted", respectively. Express each of these compound propositions as an English sentence.

   a) $\neg p$

   b) $p \vee q$

   c) $\neg p \wedge q$

   d) $q \rightarrow p$

   e) $\neg q \rightarrow \neg p$

   f) $\neg p \rightarrow \neg q$

   g) $p \leftrightarrow q$

   h) $\neg q \vee (\neg p \wedge q)$

2. For each of these sentences, determine whether an inclusive **or**, or an exclusive **or**, is intended. Explain your answer.

   a) Experience with C++ or Python is required.

   b) Lunch includes soup or salad.

   c) Publish or perish.

   d) To enter the country you need a passport or an ECOWAS Identity Card.

3. Determine whether each of these conditional statements is true or false.

   a) If $3 + 1 = 5$, then unicorns exist.

   b) If $3 + 1 = 5$, then dogs can fly.

   c) If $4 \times 4 = 16$ then $3 + 5 = 8$.

   d) If 49 is a pefect square then 9 is prime.

NB: You are required to typeset it and save it as a pdf but the **mode** of submission will be communicated to you later before the deadline.

Have a Blissful Weekend