

ASSIGNMENT # 1

CSE356– FORMAL METHODS

DUE DATE: 12-10-2020

TOTAL MARKS: 20

Instructions:

- Assignment should be hand written or typed on A4 page size, with front page having the following details. **(Note: Failing to attach the front page with the following details will result in deduction of 5 marks)**

Reg. # : _____

Name : _____

Course Title : _____

Section : _____

Assignment # : _____

Submitted to : _____

Date : _____

(Font size 16, Times New Roman)

- Questions should solve in order as given in assignment.
- No marks for late submission.
- Assignment should be well formatted.
- While solving each question, do show all intermediate steps.

Question # 01:

Show that either the following compound propositions are tautology or not. Proof the following by using Rules of Logic. [10]

a. $\neg(q \rightarrow \neg p) \rightarrow \neg q$

b. $p \rightarrow (q \rightarrow (p \wedge q))$

Question # 02:

State the converse and contra-positive of each of these conditional statements. [4]

- I will not go to the beach whenever it is not a sunny summer day.
- The beach erodes if there is a storm.

Question # 03:

Write each of these statements in the form "*if p, then q*" in English sentence and then take negation of each implication statement. [6]

- The beach erodes whenever there is a storm.
- It is necessary to have a valid password to log on to the server.

- c. You will reach the summit unless you begin your climb too late.