MTH001 (Spring 2019) Assignment No. 1

Maximum Marks: 15

Due Date: May 20, 2019

INSTRUCTIONS

Please read the following instructions before attempting the solution of this assignment:

- **To solve this assignment, you should have good command over 1 to 5 Lectures.**
- **Try to get the concepts, consolidate your concepts which you learn in these lectures with these questions.**
- **Upload assignments properly through LMS. No Assignment will be accepted through email.**
- **Write your ID on the top of your solution file.**
- **Do not use colorful backgrounds in your solution files.**
- **Use Math Type or Equation Editor etc. for mathematical symbols and equations.**
- **Zero marks will be awarded for a copied solution. That is if the solution files of any two students are found same, both of them will be awarded zero marks. Therefore, try to make solution by yourself and protect your work from other students.**
- **Avoid copying the solution from book (or internet); you must solve the assignment yourself.**
- **Also remember that you are supposed to submit your assignment in Word format any other format like scanned images, HTML etc. will not be accepted**

Note: Attempt all the following questions.

Question: 1 **Marks: 5**

Let p, q and r be the propositions

p: You have the flu.

q: You miss the final examination.

r: You pass the course.

Express each of these propositions as an English sentence

(a) $(p \rightarrow \sim r) \vee (q \rightarrow \sim r)$
(b) $(p \wedge q) \vee (\sim q \wedge r)$

Question: 2 **Marks: 5**

Let p, q and r be the propositions

p: You get an A on the final exam.

q: You do every exercise in this book.

r: You get an A in this class.

Write these propositions using p, q and r and logical connectives(including negation).

(a) You get an A in this class, but you do not do every exercise in this book.
(b) 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.

Question: 3 **Marks: 5**

Show that $(p \wedge q) \rightarrow (p \vee q)$ is a tautology by using the laws of logic.