Logic Tutorial 2 Solutions

1) a.

i) False A sees B is false, and B sees C is true. False \leftrightarrow True is False.

ii) True B next-to D is True. True \vee anything is True.

iii) True F above A is False. anything \land False is False, and \neg (False) is

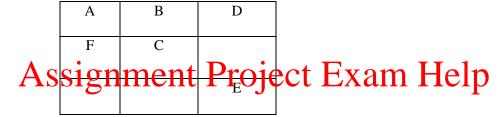
True.

iv) True A sees E is False. So $\neg [A \text{ sees } E]$ is True, and anything $\rightarrow True$ is True.

v) True Consider $\neg([B \text{ above } E] \leftrightarrow [B \text{ next-to } C])$. This is $\neg(\text{True} \leftrightarrow \text{False})$

which is ¬(False) which is True.

b. The following is an example:



https://tutorcs.com

2.

a. Contingent WeChat: cstutorcs

<u>P</u>	Q	$P\lor Q$	$P \wedge (P \vee Q)$
T	T	T	T
T	F	T	T
F	T	T	F
F	F	F	F

b. Contingency

P	Q	P∨Q	$P \rightarrow Q$	$(P\lor Q)\land (P\to Q)$
T	T	T	T	T
T	F	T	F	F
F	T	T	T	T
F	F	F	Т	F

c. Inconsistency

P	Q	$\neg P$	$Q \rightarrow P$	$P\lor(Q\rightarrow P)$	$Q \land \neg P$	Given wff c.
T	T	F	T	T	F	F
T	F	F	T	T	F	F
F	T	T	F	F	T	F
F	F	Т	T	Т	F	F

d. Tautology

e. Assignment Project Exam Help

f. Tautology – I leave the details to you!