

Tegrado, Kenne bh Renz A.
CMSC 56

Exercise 1
NO. X-3L
DATE

A.

① Propositions:

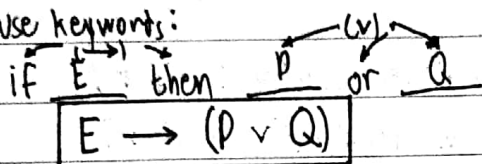
E: the Electricity comes back tonight

P: I will do my CMSC 12 exercise

Q: I will do my CMSC 56 exercise

Symbols:

* Use keywords:



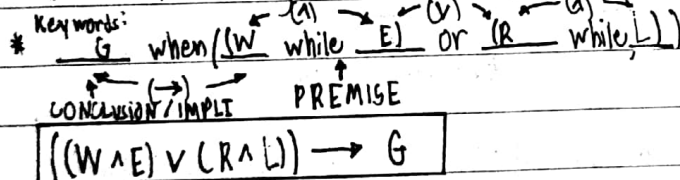
② G: It is a good Saturday

W: I am watching a movie

E: I am eating a pizza

R: I am reading a nice book

L: I am listening to music

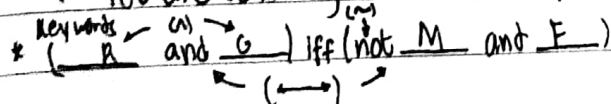


③ R: You can ride the public transportation

G: You can go to other places

M: You are moving outside the NCR Bubble

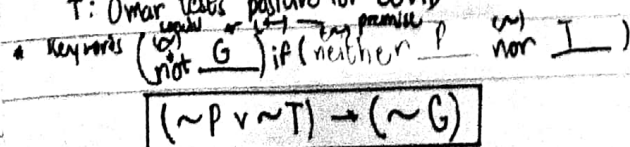
F: You are following minimum health protocols



④ G: Nadia will get a COVID Test

P: Ander tests positive for COVID

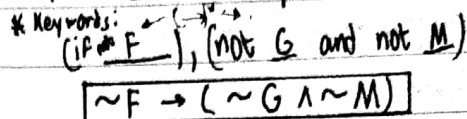
T: Omar tests positive for COVID



⑤ F: Polo finished the 14-day quarantine

G: He can go out

M: He can meet his parents



B.

① $S \wedge \sim A$: Samuel has motion sickness and Ander will not sit next to him.

② $(\sim P \wedge A) \rightarrow (C \wedge L)$: If Polo will not sit next to Christian and Ander will sit next to Samuel, then Guzman will join the field trip and Lu will sit next to him.

③ $C \leftrightarrow (P \vee \sim L)$: Carla will join the field trip if and only if Polo will sit next to Christian or Lu will not sit next to Guzman.

④ $C \sim C \wedge \sim G \rightarrow A$: If neither Carla nor Guzman will join the field trip, then Ander will sit next to Samuel.

⑤ $(\sim O \vee \sim N) \rightarrow (\sim G \wedge \sim L)$:

If neither Omar will bring drinks nor Nadia will bring food, then Guzman will not join the field trip and Lu will not sit next to him.

C.

P: Nadia Passed the UPCAT

$\sim Q$: Omar failed the UPCAT

$\sim R$: Nadia does not like Math

S: Omar likes Math

T: UP accepts all appeals for reconsideration

① * Symbol form: $\sim(R \vee S)$

* Truth Table:

R	S	$\sim(R \vee S)$
F	T	(F)

The statement is FALSE

② * Symbol form: $Q \rightarrow \sim F$

* Truth Table:

Q	$\sim F$	$Q \rightarrow \sim F$
F	?	(T)

In an if-then logic, the conclusion is always true if the premise is false. The statement is TRUE

③ E: She likes english \rightarrow T/F

* Symbol form: $P \leftrightarrow (R \vee E)$

* Truth Table:

P	R	E	$P \leftrightarrow (R \vee E)$
T	F	T	(T)

The statement will be TRUE if Nadia likes english

else:

* Truth Table:

P	R	E	$P \leftrightarrow (R \vee E)$
T	F	F	(F)

The statement will be FALSE if Nadia does not like English.

④ * Symbol form: $\sim Q \wedge \sim T$

* Truth Table:

$\sim Q$	$\sim T$	$\sim Q \wedge \sim T$
T	F	(F)

The statement is FALSE

⑤ O: Omar will be studying in UP \rightarrow ?

N: Nadia will be studying in UP \rightarrow ?

* Symbol Form: $(\sim Q \vee \sim P) \wedge \sim T \rightarrow \sim N \wedge \sim O$

* Truth Table

$\sim Q$	$\sim P$	$\sim T$	$\sim N$	$\sim O$	$(\sim Q \vee \sim P) \wedge \sim T \rightarrow \sim N \wedge \sim O$
T	F	F	?	?	(T)

$\sim Q \vee \sim P$	$(\sim Q \vee \sim P) \wedge \sim T$	$\sim N \wedge \sim O$
T	F	?

* premise is false

In an if-then logic, the conclusion is always true if the premise is false. The statement is TRUE.