Worksheet 1

CS 2210 Discrete Structures

(Due 1/29 9pm)

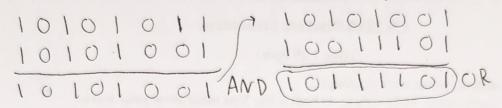
*	Teams	of 3-4	students	(must	work	in	group)).
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** This page is double sided. Make sure to do both sides. You must show your work.

***Write your answer in the allocated space	e. Scan and submit as one put on gradescope.
Namel: Ernesto lopez	Name 2: Cobin Bliss
Name3: Colin Cano	Name 4: Justin Ramirez
Question 1: Proposition: "Today is Spring of	nly if the flowers bloom."
Put in "If, then" form: If today is spring then t	-he flowers bloom
Converse: If the Flowers bloom,	then today is spring
•	then the flowers do not bloom
Contrapositive:	
If the flowers do not bl	com, then today is not spring
Question 2: Decide if True or False.	
If $4*5=25$, then today is Monday. \top	
If 1+1=2, the trees can walk.	
$2+1=5$ if and only if dogs can read. \top	

Question 3: For $((\neg p \lor \neg r) \lor (\neg q \land r)) \land q$ build truth table to evaluate expression.									
)		- 01	701	(78×7r)	(2 Ar)	(1) v (2)	(0 v (2)	19
6/9	1	7 P	F	F	F	F	F	F	
TIT	1		1	T	T	F	T	†	
TIT	IF	F	F	-	E	T	T	F	
TF	T	F	T	F	+	E	T	F	
TF	F	F	T	T	+ +	F	+	T	
FT	T	T	F	F	+	F	+	7	
FIT	F	1	+	1	T	T	T	F	
FF	T	1	T	1-	T	F	T	F	
FF	-17	1	11	1		1			

Question 4: Perform bitwise operations (10101011A10101001)v10011101.



Question 5: Game of Knights, Knaves and Spies: Knights always tell truth. Knaves always lie, Spy can lie or tell truth. There are three people (Alex, Brook and Cody), one of whom is a knight, one a knave, and one a spy. Alex says: "Cody is a knave." Brook says: "Alex is a knight." Cody says: "I am the spy." Decide who is the knight, who the knave, and who the spy? To receive full credit, you should provide a table with all possible assignments and a detailed explanation for each assignment on how it can or can't work.

A. Cis Knave

B: A is knight C: C is spy

A		C	DF because cody can't be 2 things of once POSSible V.
T	T	F	Possible 1
+	F	T	(1) F because cody can't be 2 things at once
T	F	F	3 Alex can't be knight if B is false
F	T	1	3
F	T	F	3. Alex can't be Knight and lie
F	F	1	if cody is spy either A or B is lying
F	TF	TF	QF because a knight can't lie

Conclusion

Alex is knight
Brook is spy
Cody is knave