

Lab 3 Answer Sheet

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PRELAB:

- Q1. Read section 3.0 and fill in the truth table below for Design 1 (the farmer's problem). Then use it to construct the POS expression.

Cabbage	Goat	Wolf	Alarm
0	0	0	1
0	0	1	1
0	1	0	0
0	1	1	1
1	0	0	1
1	0	1	0
1	1	0	1
1	1	1	1

C & G
G & W

POS Logic Expression: $A = (C + \bar{G} + W)(\bar{C} + G + \bar{W})$

TA Initials: AW

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- Q2. Read section 4.0 and fill in the truth table below for Design 2 (adding the farmer). Then use it to construct the SOP expressions.

Farmer	Cabbage	Goat	Wolf	Alarm
0	0	0	0	0
0	0	0	1	0
0	0	1	0	0
0	0	1	1	1
0	1	0	0	0
0	1	0	1	0
0	1	1	0	1
0	1	1	1	1
1	0	0	0	1
1	0	0	1	1
1	0	1	0	0
1	0	1	1	0
1	1	0	0	1
1	1	0	1	0
1	1	1	0	0
1	1	1	1	0

- Canonical SOP Logic Expression: $A = (\bar{F}\bar{C}\bar{G}\bar{W}) + (\bar{F}\bar{C}\bar{G}W) + (\bar{F}C\bar{G}\bar{W}) + (\bar{F}C\bar{G}W) + (F\bar{C}\bar{G}\bar{W}) + (F\bar{C}\bar{G}W) + (FC\bar{G}\bar{W}) + (FC\bar{G}W)$
- Simplified SOP Logic Expression: $A = \bar{F}\bar{C}\bar{G} + \bar{F}\bar{G}W + \bar{F}GW + \bar{F}CG$

TA Initials: AW

LAB:

3.0 Hardware results demonstrate correct code. TA Initials:
Schematic MS Structural MS Behavioral MS

4.0 Hardware results demonstrate correct code. TA Initials: MS