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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

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

TA Initials: _____

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	1
1	1	0	0	1
1	1	0	1	0
1	1	1	0	0
1	1	1	1	0

Canonical SOP Logic Expression: $\overline{F}\overline{C}G\overline{W} + \overline{F}CG\overline{W} + \overline{F}CGW + F\overline{C}\overline{G}\overline{W} + F\overline{C}GW + FGW$

Simplified SOP Logic Expression: $\bar{F}\bar{G}\bar{W} + F\bar{G}w + \bar{F}\bar{C}\bar{G} + FG\bar{C}$

TA Initials: _____

LAB:

3.0 Simulation results demonstrate correct code. TA Initials:

Schematic (FPGA) _____

Structural (ModelSim) _____ Behavioral (ModelSim) _____

4.0 Simulation results demonstrate correct code. TA Initials: _____