

Question 1.1:

EC	Input Condition	Valid EC	Invalid EC	Boundary Values	Description
1	Year	1584 <= year <= 4098		1583,1584,4098,4099	Valid Years
1.1	Year	year == 1954, 1981, 2049, 2076		1954, 1981, 2049, 2076	subtract year by 7
1.2	Year	day <= 31		31,32	Easter in March
1.3	Year	day > 31		31,32	Easter in April
2	Year		year < 1584	1583 1584	Year too early
3	Year		year > 4099	4098,4099	year too late

Question 1.2:

Test Case Number	Test Data	Expected Results	Covers Equivalence	Boundary Values
T1	1583	null	2	minimum year
T2	1584	April 4	1, 1.3	minimum year
T3	1954	April 25	1, 1.1,1.3	Subtract by 7 year
T4	1981	April 26	1, 1.1,1.3	Subtract by 7 year
T5	2049	April 25	1, 1.1,1.3	Subtract by 7 year
T6	2076	April 26	1, 1.1,1.3	Subtract by 7 year
T7	4098	March 29	1, 1.2	Maximum year
T8	4099	null	3	Maximum year

Question 1.3: (Please see source code)

Question 1.4:

Test Case Number	Expected	Actual	Verdict
T1	null	Year out of bounds.	Pass
T2	April 4	April 4	Pass

T3	April 25	April 25	Pass
T4	April 26	April 26	Pass
T5	April 25	April 25	Pass
T6	April 26	April 26	Pass
T7	March 29	March 29	Pass
T8	null	April 11	Fail

Exercise 2:

Question 2.1:

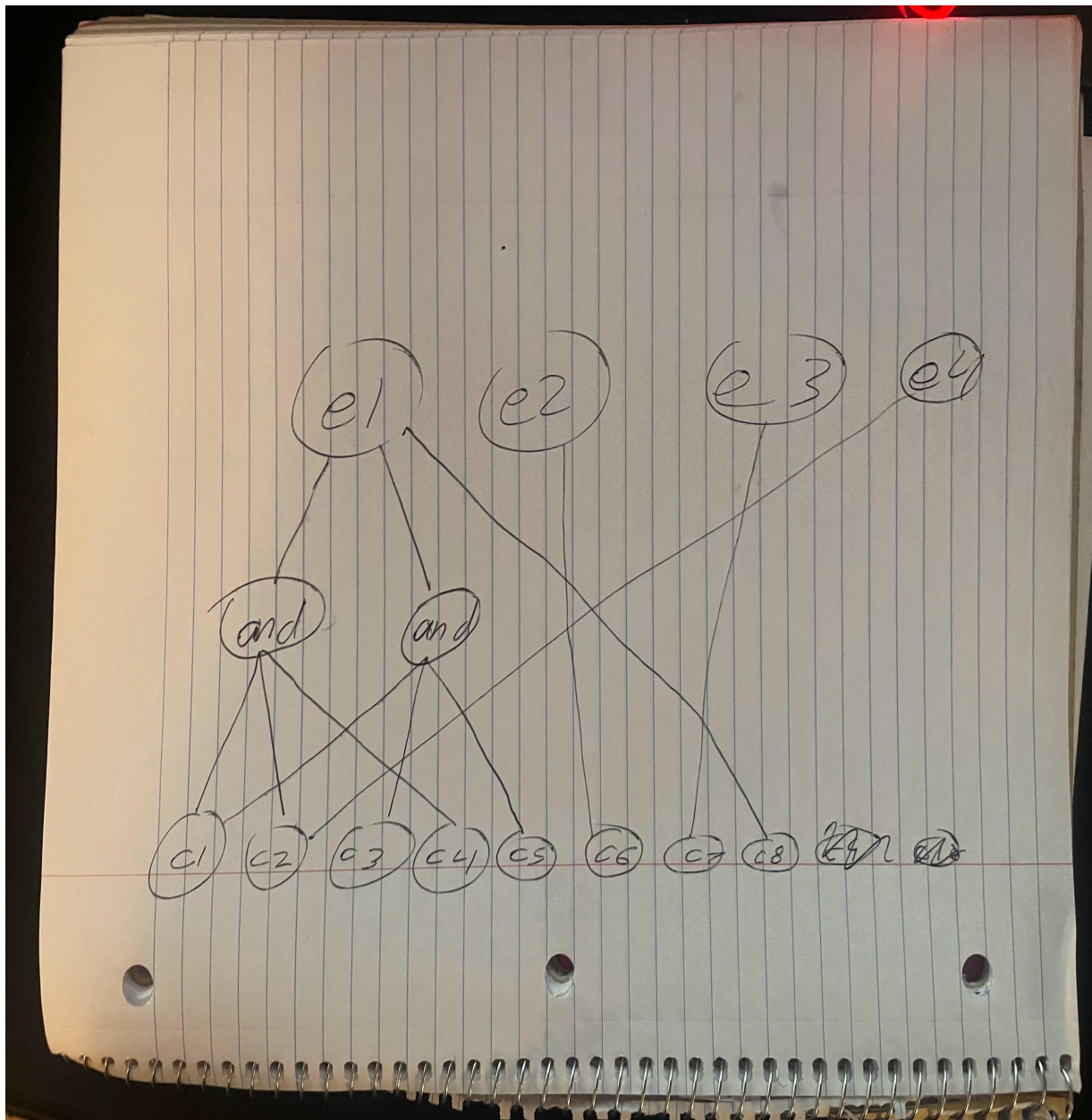
Causes:

- c1: floor sensor triggered
- c2: floor up-button pressed
- c3: floor down-button pressed
- c4: elevator moving up
- c5: elevator moving down
- c6: top floor reached
- c7: bottom-floor reached
- c8: above threshold

Effects:

- e1: Stop at currentFloor, switch off floor light
- e2: Stop top floor, switch directions, switch off floor light
- e3: stop at bottom floor, switch directions, switch off floor light
- e4: floor light illuminates

Question 2.2:



Question 2.3:

$e1 = (c1 \text{ and } c2 \text{ and } c4) \text{ or } (c1 \text{ and } c2 \text{ and } c5) \text{ or } c8$

$e2 = c6$

$e3 = c7$

$e4 = c2 \text{ or } c3$

Question 2.4:

TC	c1	c2	c3	c4	c5	c6	c7	c8	e1	e2	e3	e4
TC1	T	T	F	T	F	F	F	F	T	F	F	T
TC2	T	T	F	F	T	F	F	F	T	F	F	T
TC3	T	F	T	T	F	F	F	F	T	F	F	T
TC4	F	T	T	F	T	F	F	F	T	F	F	T
TC5	T	T	T	F	F	T	F	F	F	T	F	T
TC6	F	F	T	T	F	F	T	F	F	F	T	F
TC7	T	F	F	F	T	F	F	T	F	F	F	F
TC8	F	F	F	F	F	T	F	F	F	F	T	F