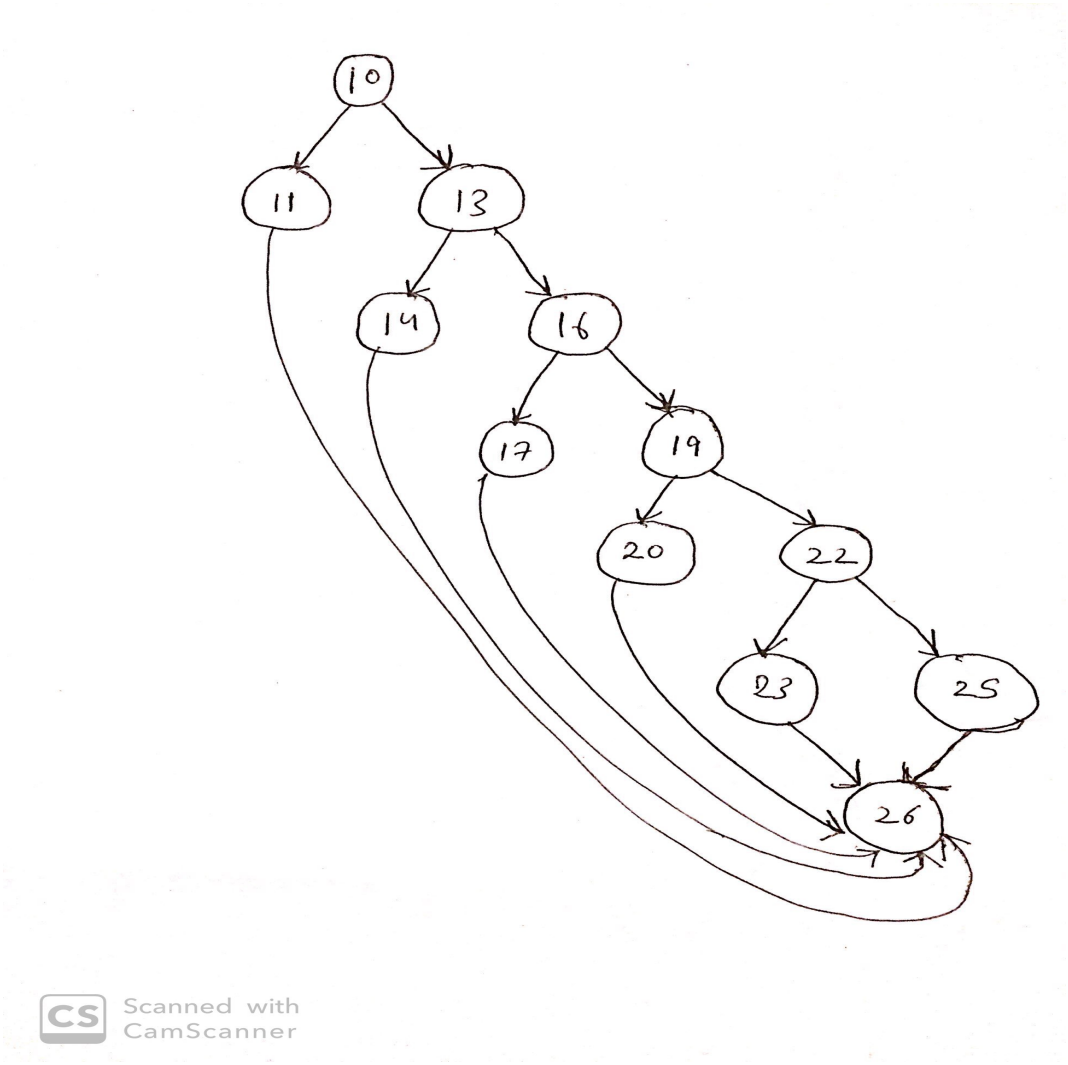
5321 Homework 3.3
Summer 2019

a)

1. Code description - a decision table

balance in dollars	Rule1	Rule2	Rule3	Rule4	Rule5	Rule6
Conditions						
-$∞ <= balance <= -$0.01	X					
balance == $0.0		X				
$0.01 <= balance <= $799.99			X			
$800.00 <= balance <= $3,499.99				X		
$3,500.00 <= balance <= $249,999.99					X	
$250,000.00 <= balance <= $∞						X
ACTIONS						
index	0	1	2	3	4	5
rate (%)	0.00	0.00	1.55	2.55	3.155	3.25
fee ($)	500.00	150.00	0.00	0.00	0.00	0.00
credit ($)	0.00	0.00	0.00	0.00	0.00	100.00
Table Implements a "first-of" rule						

2. CFG-



3. Cyclomatic Complexity is 6.

4. Test case table: -

Test Case Number	Inputs balance	Exp Output balance	Basis path
1	-$0.01	-$500.01	10-11-26
2	$0.00	-$150.00	10-13-14-26
3	$799.99	$812.38	10-13-16-17-26
4	$3,499.99	$3,589.23	10-13-16-19-20-26
5	$2,49,999.99	$2,57,887.48	10-13-16-19-22-23-26
6	$2,50,000.00	$2,58,225.00	10-13-16-19-22-25-26
7	-$0.50	-$500.50	-
8	$0.01	$0.01	-
9	$800.00	$820.40	-
10	$3,500.00	$3,610.42	-
11	$3,00,000.00	$3,09,850.00	-

5. Code coverage achieved are: - full boundary coverage, statement coverage, decision coverage, and extreme range coverage.

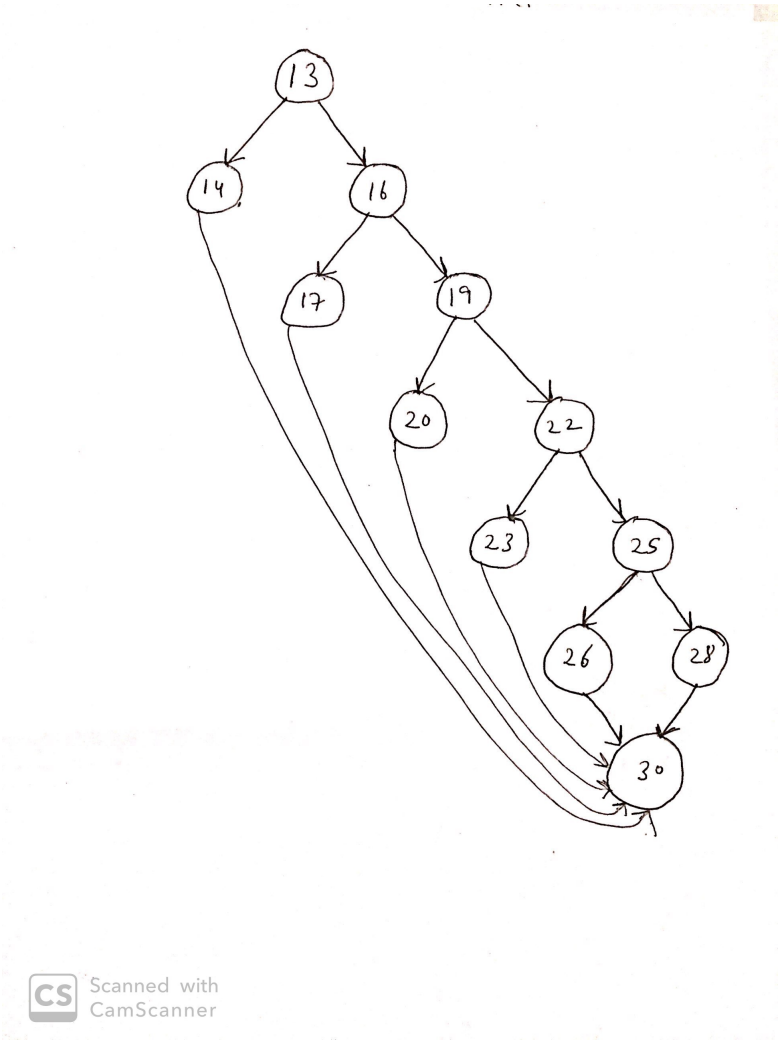
6. Test cases supports the description.

b)

1. Condition Description – decision table

fuel_level in gallons	Rule1	Rule2	Rule3	Rule4	Rule5	Rule6
Conditions						
fuel_level = 0.0	X					
0.1 <= fuel_level <= 25.0		X				
25.1 <= fuel_level <= 49.9			X			
50.0 <= fuel_level <= 75.0				X		
75.1 <= fuel_level <= 99.9					X	
100.0 <= fuel_level <= 200.0						X
Actions						
index	4	5	3	2	1	0
red	TRUE	TRUE	FALSE	FALSE	FALSE	FALSE
yellow	TRUE	TRUE	TRUE	FALSE	FALSE	FALSE
green	TRUE	TRUE	TRUE	TRUE	FALSE	FALSE
buzzer	TRUE	FALSE	FALSE	FALSE	FALSE	FALSE
chime	FALSE	TRUE	TRUE	TRUE	TRUE	TRUE
Table Implements a "first-of" rule						

2. CFG –



3. Cyclomatic Complexity is 6.

4. Test case table: -

Test Case Number	Inputs	Expected Outputs					Basis path
	fuel_level	redLight	yellowLight	greenLight	buzzer	chime	
1	100.0	FALSE	FALSE	FALSE	FALSE	TRUE	13-14-30
2	75.1	FALSE	FALSE	FALSE	FALSE	TRUE	13-16-17-30
3	50.0	FALSE	FALSE	TRUE	FALSE	TRUE	13-16-19-20-30
4	25.1	FALSE	TRUE	TRUE	FALSE	TRUE	13-16-19-22-23-30
5	0.0	TRUE	TRUE	TRUE	TRUE	FALSE	13-16-19-22-25-26-30
6	0.1	TRUE	TRUE	TRUE	FALSE	TRUE	13-16-19-22-25-28-30
7	200.0	FALSE	FALSE	FALSE	FALSE	TRUE	-
8	99.9	FALSE	FALSE	FALSE	FALSE	TRUE	-
9	75.0	FALSE	FALSE	TRUE	FALSE	TRUE	-
10	49.9	FALSE	TRUE	TRUE	FALSE	TRUE	-
11	25.0	TRUE	TRUE	TRUE	FALSE	TRUE	-

5. Code coverage achieved are: full boundary coverage, statement coverage, decision coverage, and extreme range coverage.

6. Test cases supports the description.