ISTQB CTFL V4.0 Chapter 4 Sample Practice Questions Set-1

Q1. The heating system is activated when the temperature drops below 19 degrees and deactivated when it reaches 22 degrees.

Temperature		State
19 > t	(...;19)	activated
19 ≥ t ≥ 21	[19;21]	activated/deactivated
t ≥ 22	[22;...)	deactivated

What is the minimum set of test input values to cover all valid equivalence partitions?

a) 18, 19, 22
b) 18, 19, 21, 22
c) 19, 21, 22
d) 18, 19, 21

Q2. You are testing an e-commerce system that sells cooking supplies such as spices, flour, and other items in bulk. The units in which the items are sold are either grams (for spices and other expensive items) or kilograms (for flour and other inexpensive items). Regardless of the units, the smallest valid order amount is 1.0 units (e.g., half a gram of cardamom pods) and the largest valid order amount is 30.0 units (e.g., 30 kilograms of sugar). The precision of the unit's field is 0.1 units.

Which of the following is a set of input values that cover the boundary values with three-point boundary values for this field?

a) 0.0, 1.0, 2.0, 29.0, 30.0, 31.0
b) 0.9, 1.0, 1.1, 29.9, 30.0, 30.1
c) 0.98, 0.99, 1.00, 1.01, 29.99, 30.00, 30.01, 30.02
d) 0.8, 0.9, 1.0, 1.1, 29.9, 30.0, 30.1, 30.2

Q3. Consider the following decision table for the portion of an online airline reservation system that allows frequent flyers to redeem points for reward travel:

Condition	**1**	**2**	**3**	**4**
Email	-	N	Y	Y
Password	N	-	Y	Y
Points > 1000	-	-	N	Y
Action				
Show flight history			X	X
Allow reward travel				X

Given the following test cases:

Condition	**TC1**	**TC2**	**TC3**	**TC4**	**TC5**	**TC6**
Email	Valid	Invalid	Invalid	Invalid	Valid	Valid
Password	Invalid	Valid	Invalid	Invalid	Valid	Valid
Points > 1000	2382	786	1321	0	999	1000

What is the decision table coverage achieved by these test cases?

a) 25%
b) 50%
c) 75%
d) 100%

Q4. Given the state table:

	Events						
State	E1	E2	E3	E4	E5	E6	E7
SS	S1						
S1		S2			S3		
S2			S4				
S3						S4	ES
S4				S1			
ES							

Which of the test cases covers the invalid transition?

a) SS - S1 - S2 - S4 - S1 - S3 - ES
b) SS - S1 - S3 - S4 - S1 - S2 - S4 - S1 - S3 - ES
c) SS - S1 - S2 - S4 - S1 - S3 - S4 - S1 - S3 - ES
d) SS - S1 - S2 - S4 - S1 - S3 - S4 - S2 - S3 - ES

Q5. You are testing a banking application that allows a customer to withdraw 20, 100 or 500 dollars in a single transaction. The values are chosen from a drop-down list and no other values may be entered.

How many equivalence partitions need to be tested to achieve 100% equivalence partition coverage?

a) 1
b) 2
c) 3
d) 4

Q6. You are testing a scale system that determines shipping rates for a regional webbased auto parts distributor. Due to regulations, shipments cannot exceed 100 lbs or be less than 1 lbs. You want to include boundary value analysis as part of your black-box test design.

Weight	1 to 9 lbs.	10 to 25lbs.	26 to 49 lbs.	50 lbs. to 100
Shipping Cost	$5.00	$7.50	$12.00	$17.00

How many tests will you need to execute to achieve 100% two-value boundary value analysis?

a) 4
b) 8
c) 10
d) 12

Q7. A company's employees are paid bonuses if they work more than a year in the company and achieve a target which is individually agreed before.

These facts can be shown in a decision table:

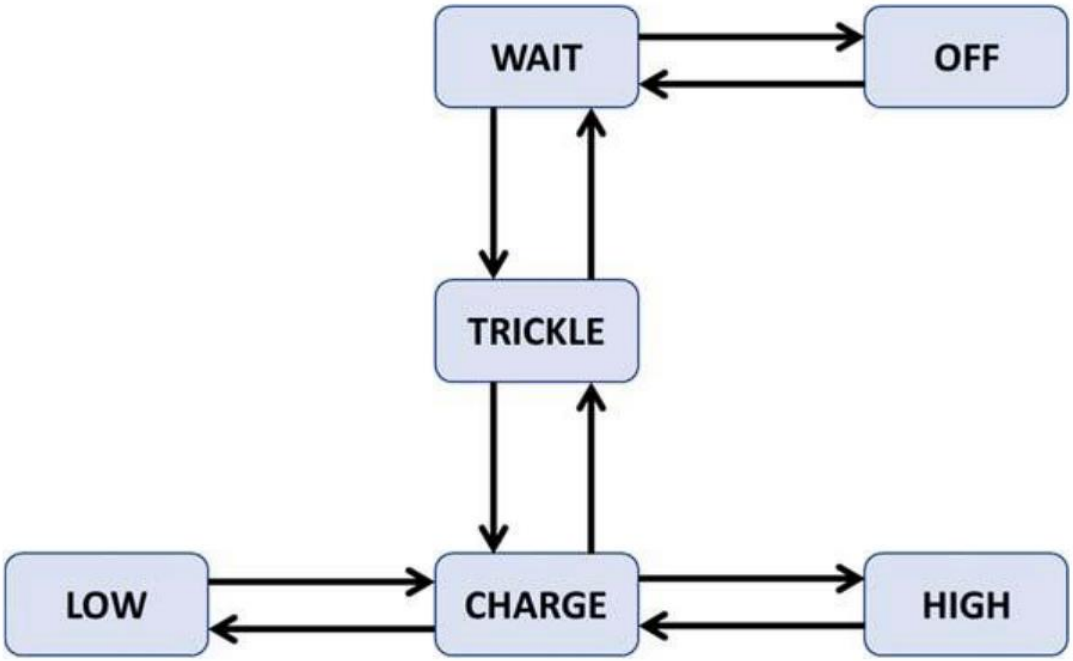
Test-ID		**R1**	**R2**	**R3**
Condition1	Employment for more than 1 year?	-	YES	-
Condition2	Agreed goal?	YES	NO	YES
Condition3	Achieved goal?	YES	-	-
Action	Bonus payment	YES	NO	NO

What test data will show that there are contradictory rules in the decision table?

a) An employee who has been working for the company for two years agreed to the goal, but did not achieve it

b) An employee who has been working for the company for six months agreed to the goal, but did not reach it
c) An employee who has been working for the company for six months did not agree to the goal and achieved it
d) An employee who has been working for the company for less than a year agreed to the goal and achieved it

Q8. Given the following state model of a battery charger software:



Which of the following sequences of transitions provides the highest level of transition coverage for the model?

a) OFF → WAIT → OFF → WAIT → TRICKLE → CHARGE → HIGH → CHARGE → LOW
b) WAIT → TRICKLE → WAIT → OFF → WAIT → TRICKLE → CHARGE → LOW → CHARGE
c) HIGH → CHARGE → LOW → CHARGE → TRICKLE → WAIT → TRICKLE → WAIT → TRICKLE
d) WAIT → TRICKLE → CHARGE → HIGH → CHARGE → TRICKLE → WAIT → OFF → WAIT

Q9. A video application has the following requirements:

The application shall allow playing a video on the following display resolution:

1. 2560x1440(2K)

2. 3840x2160(4K)

3. 7680x4320(8K)

On three devices:

1. Phone

2. Tablet

3. TV

Phones and tablets only support video resolution up to 2K, while the TV supports video in 4K or higher. You want to apply the Each Choice Equivalence Partitioning test technique.

What is the minimal number of test cases to achieve 100% VALID EP coverage?

a) 3
b) 4
c) 5
d) 6

Q10. A speed control and reporting system has the following characteristics:

• If you drive 90 km/h or less, nothing will happen.

• If you drive faster than 90 km/h, but no more than 110 km/h, you will be warned.

• If you drive faster than 110 km/h but not more than 130 km/h, you will be fined.

• If you drive faster than 130 km/h, your driving license will be suspended.

• The speed in km/h is available to the system as an integer value.

Using 2-value BVA (only Min and Max values), which of the following sets of test inputs provides the highest level of boundary coverage?

a) 2, 89, 90, 109, 129, 131
b) 90, 91, 99, 100, 111, 129
c) 89, 91, 110, 120, 131, 140
d) 91, 109, 110, 111, 129, 131

Q11. Your favorite bicycle daily rental store has just introduced a new Customer Relationship Management system and asked you, one of their most loyal members, to test it.

The implemented features are as follows:

- Anyone can rent a bicycle, but members receive a 20% discount

- However, if the return deadline is missed, the discount is no longer available

- After 10 rentals, members get a gift: a T-Shirt

- After 10 rentals, not a member get a gift: One free rental

Decision table describing the implemented features looks as follows:

Conditions	**R1**	**R2**	**R3**	**R4**	**R5**	**R6**
Being a member	T	T	T	T	F	F
Returned on time	T	F	T	F	-	-
10th rental	F	F	T	T	F	T
Actions						
20% discount	X		X			
Gift T-Shirt			X	X		
Gift One free rental						X

So far you have designed the following test cases:

- TC1: The member who missed the return deadline on the first rental

- TC2: The member who returned the bike on time on the tenth rental

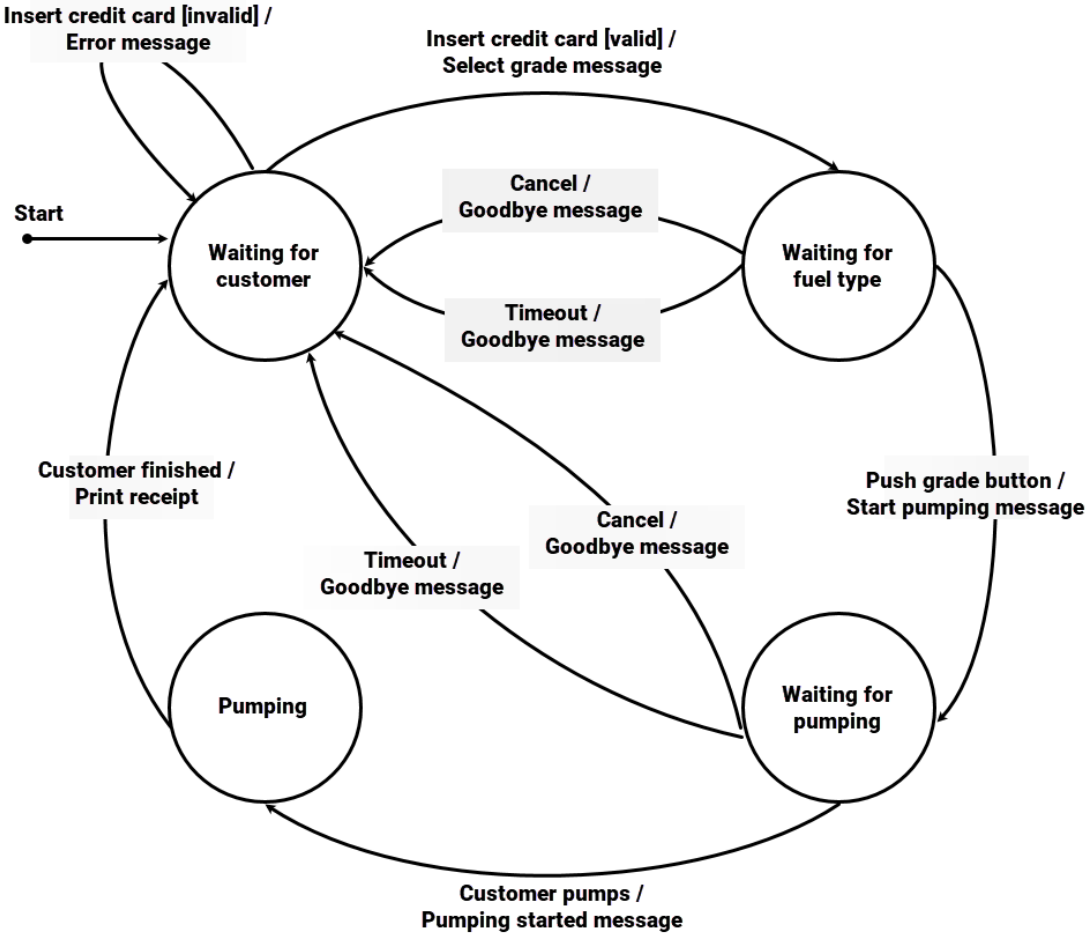
- TC3: Not a member who returned the bike on time on the tenth rental

- TC4: Not a member who missed the return deadline on the first rental

Which of the following test cases, when added to the existing set of test cases, will increase the decision table coverage?

a) The member who missed the return deadline on the second rental
b) The member who missed the return deadline on the tenth rental
c) Not a member who missed the return deadline on the tenth rental
d) Not a member who returned the bike on time on the first rental

Q12. Consider the following state transition diagram for a credit-card only, unattended gasoline pump:



Assume further that each test must start at the beginning state, waiting for customer, and each test ends when a transition arrives at the beginning state.

What is the MINIMAL number of test cases to achieve valid transitions coverage?

a) 1
b) 4
c) 6
d) 10

Q13. You are testing a card number validator for a Visa card type, which accepts valid card numbers and rejects invalid card numbers. A card number is a sequence of digits. A card number is valid if it consists of sixteen digits. If the number of digits is less than 16, the system displays an error, “Card number is too short.”. If the number of digits is more than 16, the system displays an error, “Card number is too long.”. A Visa card number is valid if it starts with 4. You have identified the following valid equivalence partitions:

Variable: Card number length

- The partition “length correct” - sixteen-digit card number

- The partition “length is too short” - Card numbers with length less than 16

- The partition “length is too long” - Card numbers with length more than 16

Variable: Card number first digit

- The partition “first digit is correct” - Card number starts with 4

- The partition “first digit is incorrect” - Card number doesn’t start with 4

Which of the following is a MINIMUM set of input test data that covers all identified equivalence partitions?

a) 4703 0000 0000 0000 003, 4607 0500 0010 20, 4111 1111 1111 1111
b) 6703 0000 0000 0000 003, 3607 0500 0010 20, 4111 1111 1111 1111
c) 6703 0000 0000 0000 003, 3607 0500 0010 20, 4111 1111 1111 1111, 5555 5008 3003 0331
d) 4703 0000 0000 0000 003, 4607 0500 0010 20, 4111 1111 1111 1111, 5555 5008 3003 0331

Q14. A company has set up an employee wellness program and combined it with the payment for health insurance:

The program has the following rules:

1. Employees who consume 0 units or less of alcohol per week get $50 off their payment

2. Employees who consume 20 units or less of alcohol per week get $25 off their payment

3. Employees who consume 40 units or less of alcohol per week get $10 off their payment

4. Employees who consume more than 40 units of alcohol per week get $0 off their payment

Using two-value boundary value analysis, which of the following sets of test inputs provides the highest level of boundary value coverage?

a) -1, 0, 1, 2, 19, 20, 21, 22, 39, 40, 41, 42
b) 0, 1, 2, 19, 20, 21, 39, 40, 41
c) 0, 1, 20, 21, 40, 41
d) 0, 1, 2, 19, 20, 39, 40

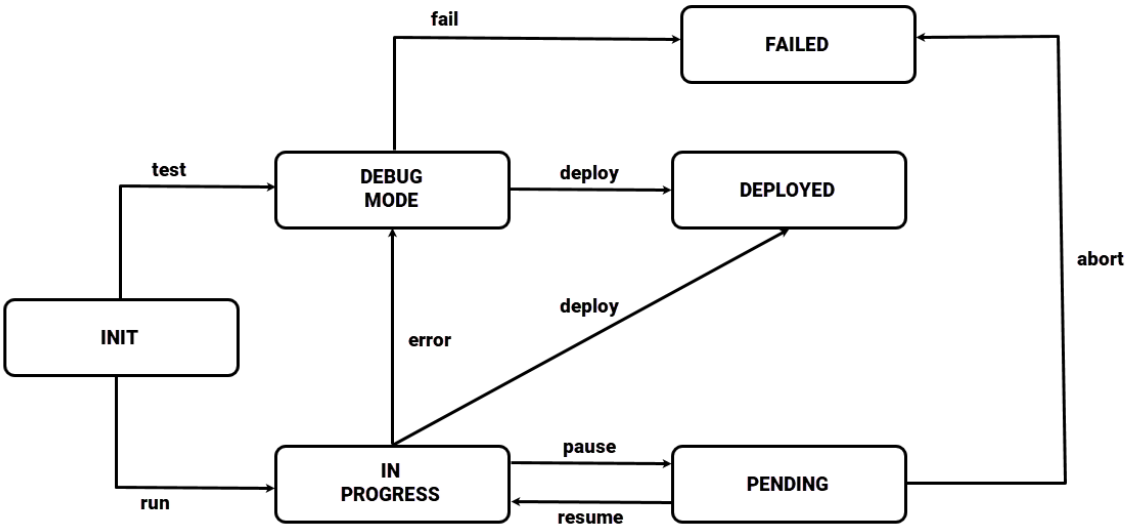
Q15. The following decision table contains the rules for determining the risk of atherosclerosis:

	Rule 1	Rule 2	Rule 3	Rule 4	Rule 6
Conditions					
Cholesterol (mg/dl)	≤124	≤ 124	125 – 200	125 – 200	≥ 201
Blood pressure (mm Hg)	≤ 140	> 140	≤ 140	≥ 140	–
Action					
Risk level	very low	low	medium	high	very high

Which test case will show that there are contradictory rules in the decision table?

a) TC: Cholesterol = 140 mm Hg Blood pressure = 125 mg/dl
b) TC: Cholesterol = 124 mg/dl Blood pressure = 140 mm Hg
c) TC: Cholesterol = 125 mg/dl Blood pressure = 140 mm Hg
d) TC: Cholesterol = 201 mg/dl Blood pressure = 140 mm Hg

Q16. You test a system whose lifecycle is modeled by the state transition diagram shown below. The system starts in the INIT state and ends its operation in the DEPLOYED or FAILED state.



What is the MINIMAL number of test cases to achieve valid transitions coverage?

a) 2
b) 3
c) 4
d) 5

Q17. A daily air conditioner usage tracker for buildings generates an energy efficiency rating determined by both the duration the air conditioner is in operation (less than 1 hour, 1 to 2 hours, or more than 2 hours) and the cooling intensity (very low, low, medium, high, turbo).

Given the following test cases:

	Hours	Intensity	Score
TC1	0.5	v. low	10
TC2	1.0	medium	60
TC3	0.5	high	50
TC4	1.5	v. low	30
TC	2.0	high	90

What is the minimum number of additional test cases that are needed to ensure full coverage of ALL VALID INPUT equivalence partitions?

a) 1
b) 2
c) 3
d) 4

Q18. A smart home app measures the average temperature in the house over the previous week and provides feedback to the occupants on their environmental friendliness based on this temperature.

The feedback for different average temperature ranges (to the nearest °C) should be:

Temperature	Feedback
t ≤ 10°C	Icy Cool!
[11°C; 15°C]	Chilled Out!
(15°C ; 20°C)	Cool Man!
[20°C to 22°]	Too Warm!
t > 22°C	Hot & Sweaty!

Using BVA (only Min- and Max values), which of the following sets of test inputs provides the highest level of boundary coverage?

a) 0°C, 11°C, 20°C, 22°C, 23°C
b) 10°C, 16°C, 19°C, 22°C, 23°C
c) 9°C, 15°C, 19°C, 23°C, 100°C
d) 14°C, 15°C, 18°C, 19°C, 21°C, 22°C

Q19. Decision table testing is being performed on a speeding fine system.

1. The speeding system regulates the rules of driving both within and outside the school zone

2. The drivers are allowed to drive at a speed of 20 km/h both within and outside the school zone

3. If a driver exceeds the speed limit outside the school zone, they will be subject to a $250 fine

4. If a driver exceeds the speed limit in the school zone, they will face a $250 fine and the removal of their driver's license.

5. If a driver is found to be under the influence of alcohol (drunk), they will face a $250 fine and their driver's license will be removed

	Rules	R1	R2	R3	R4
Conditions	Speed > 20 km/h	T	-	T	F
	School Zone	T	-	F	-
	Drunk	-	T	F	F
Actions	$250 Fine	T	T	T	F
	Driving license withdrawal	T	T	F	F

Given the following additional test cases:

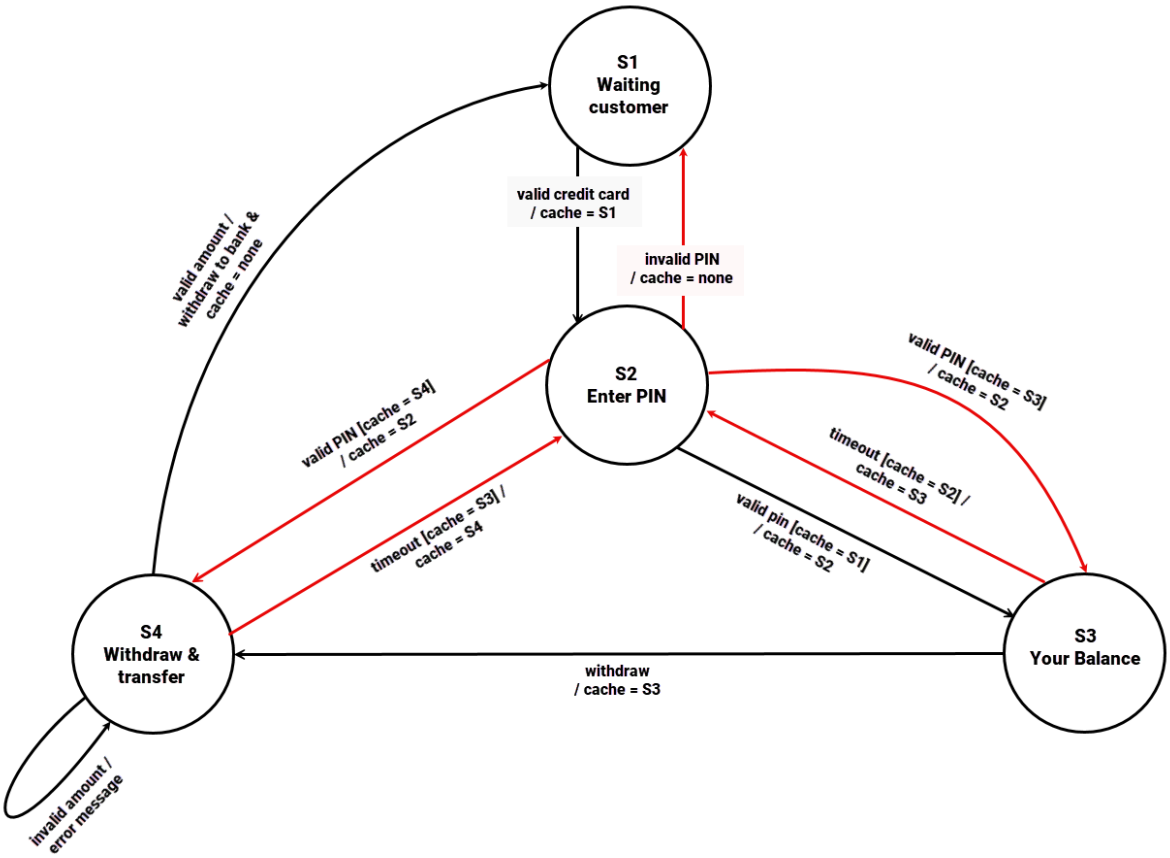
	Rules	TC1	TC2	TC3	TC4
Conditions	Speed	30	5	30	80
	School Zone	F	T	T	T
	Drunk	T	T	F	T

What is the decision table coverage achieved by these test cases?

a) 25%
b) 50%
c) 75%
d) 100%

Q20. Consider the following state transition diagram for the e-banking system:

In a future release, a new feature will be introduced: the cache system. The diagram and test cases primarily focus on the new cache functionality. The cache operates as follows: when the user moves from one state to another, the previous state will be cached. Thus, each time a timeout occurs, the user should enter the PIN. Once a valid PIN is entered, the user is returned to the state they were in before the timeout.



Which of the following test cases, represented as sequences of events, achieves the highest level of valid transitions coverage?

a) valid credit card → valid pin → withdraw → timeout → valid pin → withdraw → valid
b) valid credit card → valid pin → timeout → valid pin → invalid amount → valid amount
c) valid credit card → valid pin → timeout → valid pin → withdraw → valid amount
d) valid credit card → valid pin → timeout → valid pin → invalid amount → timeout → invalid pin

Q21. A company has set up an employee wellness program and combined it with the payment for health insurance:

The program has the following rules:

• Employees who consume 20 units or less of alcohol per week get $30 off their payment

• Employees who consume more than 20 units but less than 40 units of alcohol per week get $15 off their payment

• Employees who consume more than 40 units or more of alcohol per week won't get payment

• Employees who fill in a "health risk assessment" will be rewarded with a $25 reduction in payment

• Employees who participate in a health control program at the company be rewarded with a $20 reduction in payment

Your test suite already contains two test cases:

• TC1. Employee 1: John Doe; 20 units of alcohol; health risk assessment is filled; health control program participant

• TC2. Employee 2: Jane Doe; 0 units of alcohol; health risk assessment is not filled; health control program participant

What is the minimum number of additional test cases that are needed to ensure full coverage of ALL VALID INPUT equivalence partitions?

a) 1 test case
b) 2 test cases
c) 3 test cases
d) 4 test case

Q22. A speed control and reporting system has the following characteristics:

Speed (km/h)	Action
50 ≥ speed	Nothing will happen
(50; 55]	You will be warned
(55; 60]	You will be fined
speed > 60	Your driving license will be suspended

The speed in km/h is available to the system as an integer value.
Which would be the most likely set of values (km/h) identified by applying the 2-value boundary value analysis (BVA), where only the values on the boundaries of the equivalence classes are selected?

a) 0, 49, 50, 54, 59, 60
b) 50, 55, 60
c) 50, 51, 55, 56, 60, 61
d) 49, 50, 54, 55, 60, 62

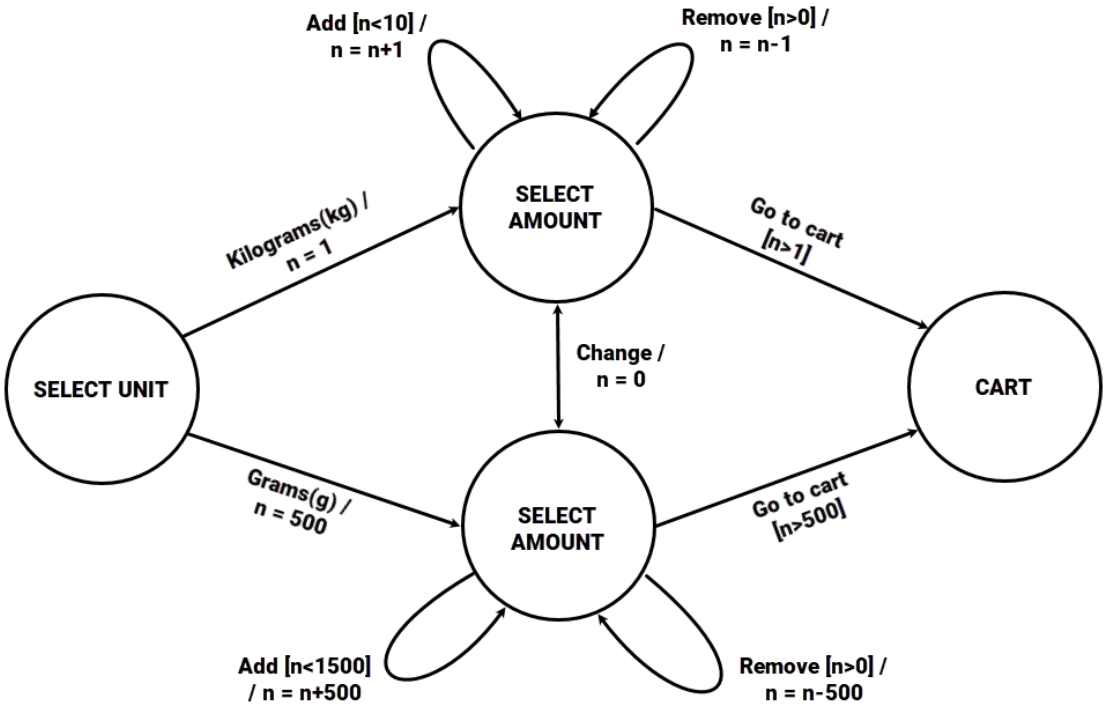
Q23. The following decision table contains the rules for determining the risk of atherosclerosis:

	Rule 1	Rule 2	Rule 3	Rule 4	Rule 5	Rule 6	Rule 7	Rule 8
Conditions								
Cholesterol (mg/dl)	200-239	200-239	200-239	200-239	≥ 240	≥ 240	≥ 240	≥ 240
Blood pressure (mm Hg)	120-139	120-139	≥ 140	≥ 140	120-139	120-139	≥ 140	≥ 140
Patient takes medications	Y	N	Y	N	Y	N	Y	N
Action								
Risk level	medium	medium	high	high	high	high	high	high
Prescribe medicine		X		X		X		X
Change medicine	X		X		X		X	

Based on the description of the risk of atherosclerosis, which of the following statements is true?

a) R1, R2, can be merged into a single column
b) R3, R5, can be merged into a single column
c) R4, R6, can be merged into a single column
d) R4, R8, can be merged into a single column

Q24. Given the following state model of a sugar online shop:



Which of the test cases covers the GREATEST amount of sugar successfully purchased by the user?

a) Kilograms(kg), Add, Add, Change, Remove, Go to Cart
b) Kilograms(kg), Add, Change, Add, Go to Cart
c) Grams(g), Add, Add, Add, Change, Add, Go to Cart
d) Grams(g), Add, Add, Change, Change, Add, Add, Go to Cart