Q. 1: Which of the following is the benefit of using the checklist-based testing?
A.   It allows us to appreciate the nonfunctional testing, which is often forgotten.
B.   It allows us to test effectively in absence of formal requirements.
C.   It allows us to take advantage of the tester's expert knowledge.
D.   It allows us to test in a more consistent way.

Correct answer D
Checklist-based testing makes testing more consistent, as—when we repeat the tests—it enforces us to perform the actions that check the same things.
A is incorrect, because although checklists may be organized around the nonfunctional testing issues, but this is not a general benefit of using checklists.
B is incorrect, because checklists have nothing to do with the absence of formal requirements. This is more a feature of exploratory testing.
C is incorrect, because using the checklists does not necessarily require the expert knowledge of a tester.

Q. 2: Which statement about expected outcomes is FALSE?
A. Expected outcomes are defined by the software's behavior.
B. Expected outcomes are derived from a specification, not from the code
C. Expected outcomes should be predicted before a test is run
D. Expected outcomes may include timing constraints such as response times

Correct answer A

Explanation: Expected outcome of the software is either defined from the specification document before the test is run and might include timing constraints (non-functional requirement).The software's behavior defines the actual outcome not the expected outcome.

Q. 3: Purchase discount is 0% for up to 500$, 5% is added for each additional 500$ up to 2000$, and 25% is applied for above 2000 EGP. Which test inputs in EGP would be selected for equivalence partitions?
A.   -250, 700, 1400, 1800, 4000
B.   250, 1000, 3000
C.   -100, 250, 650, 1300, 1700, 2900
D.   200, 720, 1600, 1800, 2100

Correct answer C

Explanation: This example is similar to the one we mentioned in the equivalence-portioning lecture. The main difference here – and I hope you have noticed it – is that they are asking about equivalence portioning and didn't specify if they want valid ones or invalid ones. So in this case they are asking about all the equivalence portions valid and invalid ones.

The partition will be the same as the example in the lecture

Negative infinity -> -1

Zero -> 500

501 - >1000

1001 - > 1500

1501 -> 2000

2000 - > infinity

Looking at the options for answer, we see that choice C is the only one that can fulfill all the specified partitions.

Q. 4: Bank fee is 0% for balance less than 500$, 2% for less than 1000$, and 4% for 1000$ or more. Which test inputs in dollars would be selected using BVA?
A.   0.00, 0.01, 499.99, 500.00, 500.01, 999.99, 1000.00, 1000.01
B.   -0.01, 0.00, 499.99, 500.00, 999.99, 1000.00
C.   -0.01, 499.99, 500.00, 999.99, 1000.00
D.   0.00, 500.00, 500.01, 1000.00, 1000.01

Correct answer B

Explanation: This question is also similar to the one we mentioned in the lecture but again they are here asking for all boundaries both valid and invalid.

The boundaries of the partitions are

Negative infinity -> -0.01

Zero -> 499.99

500 -> 999.99

1000 -. Infinity

Our solution should include all those numbers we defined as boundaries, and they all exist in answer B.

Answers A and D do not contain negative boundaries. Answer C misses Zero as a boundary.

Q. 5: Which of the following could be used to assess the coverage achieved for black-box test techniques?
V. Decision outcomes exercised
W. Partitions exercised
X. Boundaries exercised
Y. State transitions exercised
Z. Statements exercised
A. Y, W, Y, or Z
B. W, X or Y
C. V, X or Z
D. W, X, Y or Z

Correct answer B

Explanation: this question is more about distinguishing between black box testing and white box testing techniques. Partitions, Boundaries and State transitions are black box techniques. So the answer should contain W, X and Y which is answer B
Decision outcomes and Statements are white box techniques.

Q. 6: Consider the following decision table for Car rental.

Conditions	Rule 1	Rule 2	Rule 3	Rule 4
Over 23?	F	T	T	T
Clean driving record?	Don't care	F	T	T
On business?	Don't care	Don't care	F	T
Actions				
Supply rental car?	F	F	T	T
Premium charge	F	F	F	T

Given this decision table, what is the expected result for the following test cases?

TC1: A 26-year-old on business but with violations or accidents on his driving record

TC2: A 62-year-old tourist with a clean driving record

A. TC1: Don't supply car; TC2: Supply car with premium charge.
B. TC1: Don't supply car; TC2: Supply car with no premium charge.
C. TC1: Supply car with premium charge; TC2: Supply car with no premium charge.
D. TC1: Supply car with premium charge; TC2: Don't supply car.

Correct answer B

Explanation: in this question, they are providing us with the decision table and a couple of test cases. The want us to predict the expected outcome/action for each test case.

So we should try to map each test case to its corresponding rule or decision table column and from that column, we should get the answer based on the action of that column.

First test case 'A 26-year-old on business but with violations or accidents on his driving record"

So is he over 23? Yes. Then we are in either rule 2, 3 or 4.

On business? Yes. Then we should exclude rule 3. So we are left with rule 2 and 4.

Clean driving? No, because he has violations or accidents on his driving record so we should exclude rule 4 so we are left with rule 2.

The action in rule 2 is "Supply rental car = False" so we shouldn't Supply a car. And we can find that in answer A and B.

Second test case ": A 62-year-old tourist with a clean driving record"

So is he over 23? Yes. Then we are in either rule 2, 3 or 4.

On business? No, because he is a tourist. Then we should exclude rule 4. Therefore, we are left with rule 2 and 3.

Clean driving? Yes. So we should exclude rule 2 so we are left with rule 3.

The action in rule 3 is "Supply car = True" and "premium charge = False" so supply a car with no premium charge which can be found in answer B.

Q. 7: Assume postal rates for 'light letters' are:
$0.25 up to 10 grams;
$0.35 up to 50 grams;
$0.45 up to 75 grams;
$0.55 up to 100 grams.
Which test inputs (in grams) would be selected using boundary value analysis?
A.   0, 9,19, 49, 50, 74, 75, 99,100
B.   10, 50, 75,100, 250, 1000
C.   0, 1,10,11, 50, 51, 75, 76,100,101
D.   25, 26, 35, 36, 45, 46, 55, 56

Correct answer C

Explanation: the partitions here are related to the test input which is the the weight of letter in grams. So don't get confused with the price of the postal rate.

We also notice that there are no negative values in the answer so we will ignore the negative partition. So the partitions are

1 -> 10 grams (We started from 1 because you can't have a letter which weights Zero)

11 grams -. 50 grams

51 grams -> 75 grams

76 grams -> 100 grams

101 grams -> infinity

Looking at the answers, I would instantly exclude answers B and D as they don't contain the "1" boundary.

I would also exclude answer A as it doesn't contain "10". Therefore, the answer should be C.

Q. 8: Postal rates for 'light letters' are 25p up to 10g, 35p up to 50g plus an extra 10p for each additional 25g up to 100g. Which test inputs (in grams) would be selected using equivalence partitioning?
A. 8, 42, 82, 102
B. 4, 15, 65, 92, 159
C. 10, 50, 75, 100
D. 5, 20, 40, 60, 80

Correct answer B

Explanation: We also notice that there are no negative values in the answer so we will ignore the negative partition. The partitions are
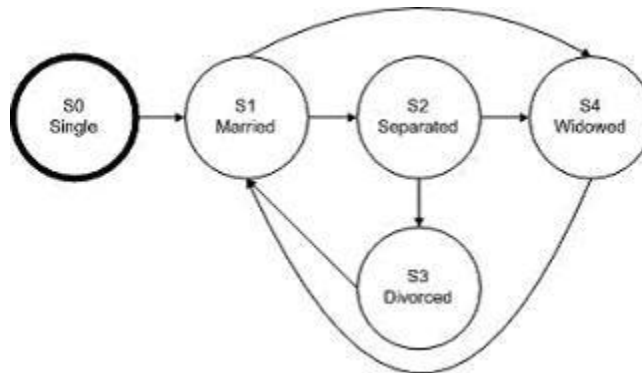
1g -> 10g

11g -> 50g

51g -> 75g

76g -> 100g

101g -> infinity

Only answer B contains values within each partition.

Notice that answer c would be acceptable if they ask for valid values only.

Q. 9: Which test suite will check for an invalid transition using the diagram below?

A. S0-S1-S2-S3-S1-S4
B. S0-S1-S4-S1-S2-S3
C. S0-S1-S3-S1-S2-S1
D. S0-S1-S2-S3-S1-S2

Correct answer C

Explanation: following the arrows, Answer C is invalid, as we can't move from state S1 to state S3.

Q. 10: Which of the following is MOST characteristic of black-box techniques?

A. Test cases can be easily automated.
B. Test cases are independent of each other.
C. Test cases are derived systematically from models of the system.
D. Test cases are derived systematically from the delivered code.

Correct answer C

Explanation: answer D is a characteristic of white box testing. Answers A and B can be applied to black box testing techniques but they're NOT the main features of black box testing.

Answer C is the actually the MOST characteristic of black-box techniques.

Q. 11: Which of the following types of defects is use case testing MOST LIKELY to discover?

i) Defects in the process flows during real-world use of the system.
ii) Defects in the interface parameters in integration testing.
iii) Integration defects caused by the interaction and interference of different components.
iv) Defects in the system as it transitions between one state and another.

A. ii, iii.
B. i, iii.
C. iii, iv.
D. i, ii

Correct answer B

Explanation:

Use case testing can find defects in the process flows during real-world use of the system and it can find Integration defects caused by the interaction and interference of different components. Nevertheless, it cannot find defects in the interface parameters in integration testing nor Defects in the system as it transitions between one state and another.

Q. 12: A methodical approach that uses a list of possible mistakes, defects, and failures, and designs tests that will expose those failures, called "fault attack," is:
A.   A form of exploratory testing
B.   A structured approach to the error guessing technique
C.   A form of checklist-based testing technique
D.   A structured approach to the walkthrough

Correct answer B
Fault attack is a structured approach to error guessing technique (per syllabus). In a fault attack, a tester generates a list of possible defects and designs tests to "attack" these defects, that is, to enforce a failure caused by them. Hence, B is correct

Q. 13: What is the expected result for each of the following test cases?

	Rule 1	Rule 2	Rule 3	Rule 4
Conditions				
Citibank Card Member	Yes	Yes	No	No
Type of Room	Silver	Platinum	Silver	Platinum
Actions				
Offer upgrade To Gold Luxury	Yes	No	No	No
Offer upgrade to Silver	N/A	Yes	N/A	No

A. Citibank card member, holding a Silver room

B. Non Citibank-member, holding a Platinum room

A. A – Don't offer any upgrade, B – Don't offer any upgrade.
B. A – Don't offer any upgrade, B – Offer upgrade to Gold.
C. A – Offer upgrade to Silver, B – Offer upgrade to Silver.
D. A – Offer upgrade to Gold, B – Don't offer any upgrade.

Correct answer D

Explanation: following the table

Test case A: Citibank card member then we have rules 1 and 2, holding a Silver room then it's only rule 1. The action should be offer upgrade to gold which can only be found is Answer D

No need to continue with Test case B unless we want to confirm our answer. Test case b follow rule 4.

Q. 14: What does it mean if a set of tests has achieved 90% statement coverage?

A. 9 out of 10 decision outcomes have been exercised by this set of tests.

B. 9 out of 10 statements have been exercised by this set of tests.

C. 9 out of 10 tests have been run on this set of software.

D. 9 out of 10 requirements statements about the software are correct.

 Correct answer B

Explanation: 9 out of 10 statements have been exercised by this set of tests.

Q. 15: In a system designed to work out the tax to be paid: An employee has $4000 of salary tax free. The next $1500 is taxed at 10% The next $28000 is taxed at 22% Any further amount is taxed at 40%. Which of these is a valid Boundary Value Analysis test case?

A. $32001

B. $1500

C. $33501

D. $28000

Correct answer C

Explanation: partitions are

1 -> 4000$ -> Tax free (Can someone have a zero salary?)

4001 -> 5500 - 10% tax

5501 -> 33500 – 22% tax

33501 -> infinity – 40% tax

33501$ is a boundary in the last partition.

Q. 16: What is exploratory testing?

A.   A systematic approach to identifying specific equivalent classes of input.

B.   The process of anticipating or guessing where defects might occur.

C.   Concurrent test design, test execution, test logging and learning.

D.   The testing carried out by a chartered engineer.

Correct answer C

Explanation: Answer A is about equivalence partitioning test design technique. Answer B is about error guessing test design technique. Answer D is about independent testing.

Q. 17: Error guessing is best used
A. As the first approach to deriving test cases
B. After the system has gone live
C. By inexperienced testers
D. After more formal techniques have been applied

Correct answer D

Explanation: Error guessing is a complementary technique to other formal technique to be carried out by experienced testers.

Q. 18: Suppose you have three test cases:
  ➢ **Test 1 gives you 20% decision coverage.**
  ➢ **Test 2 gives you 30% decision coverage.**
  ➢ **Test 3 gives you 30% decision coverage.**
What is the possible decision coverage that can be achieved by a test suite consisted only of these three tests?
A. 82%
B. 50%
C. 25%
D. 1.8%

Correct answer B
If one of the tests already achieved 30% coverage then the smallest possible decision coverage achieved by the test suite {Test 1, Test 2, Test 3} is 30%. This would hold if Test 1 and Test 2 cover exactly the same decision outcomes, and Test 3—the subset of these outcomes.
The largest possible decision coverage is 80%. This would hold if all three tests would cover different set of decision outcomes. So, the possible decision coverage achieved by these three tests is between 30% and 80%. So the only valid answer would be 50%.

Q. 19: Your tests achieved 50% decision coverage. What is a consequence of this fact?
A. Each decision was evaluated with at least one outcome.
B. You achieved at most 50% statement coverage.
C. At least one decision had to be evaluated to FALSE.
D. At least one executable statement was executed.

Correct answer: D

This is a nice tricky question that tests your understanding of statement and decision coverage.
Let's remove the incorrect answers first.

B is incorrect. In the example we used in our lecture, one test case achieved 50% decision coverage, but the same test case achieved 100% statement coverage. So, 50% decision coverage doesn't mean 50% statement coverage.
C is incorrect. Again, in the example we used in our lecture, we achieved 50% decision coverage by visiting all the TRUEs of the decisions in the code and none of the FALSE outcomes.

Option A is the tricky one. The statement "Each decision was evaluated with at least one outcome."
Could actually achieve 50% decision coverage but the opposite is not true.
If we achieve 50% decision coverage, it doesn't necessarily means that each decision was evaluated with at least one outcome."
We can use multiple use cases that visit various branches of decisions (TRUE or FALSE) and the total of the outcome s visited is 50% of the total branches in the code. Which means we can visit the TRUE and FALSE of any decision and not VISIT any branch of another decision. So option A is incorrect.

That will leave us with option D "At least one executable statement was executed". 50% decision coverage means that there is at least one decision in a code and that we covered exactly half of the all possible decision outcomes. This means that we had to execute a statement that checks this decision outcome. Hence, D is correct.