

! This quiz has been regraded; your new score reflects 3 questions that were affected.

Midterm Exam

Due Oct 21, 2020 at 10:25am

Points 100

Questions 24

Available until Oct 21, 2020 at 10:25am

Time Limit 85 Minutes

Instructions

Please read the instructions carefully and complete all steps just as you did when taking the practice quiz.

Please note that you may have **three blank sheets of scratch paper** for your work. **You must show both sides of each paper to prove they are blank at the start of the exam.** This is a **closed notes, closed book, and no calculator** exam. Failure to follow these rules may lead to point deductions or being flagged for cheating on the system.

Technical Support: For assistance with RPNow, please contact the ASU Help Desk 24/7 support by phone at 1.855.278.5080 or by starting a Live Chat via your Service Center tab in MyASU.

This quiz was locked Oct 21, 2020 at 10:25am.

Attempt History

	Attempt	Time	Score	Regraded
LATEST	<u>Attempt 1</u>	48 minutes	86 out of 100	79 out of 100

! Correct answers are no longer available.

Score for this quiz: **79** out of 100

Submitted Oct 21, 2020 at 9:47am

This attempt took 48 minutes.

Question 1

3 / 3 pts

Which of the following best describes the difference between verification and validation?



Verification answers the question: are we building the product right.
Validation answers the question: are we building the right product?



Validation answers the question: are we building the product right.
Verification answers the question: are we building the right product?



Verification is normally performed during system test while validation is normally performed during unit test.



Validation primarily addresses code coverage while verification primarily addresses requirements coverage.

Question 2

5 / 5 pts

Consider the following specification for a program:

An application is being developed to process admission of students to a new graduate program. The program has 3 inputs. The first input is the application tracking number which consists of 10 digits. The second input is the student's gpa on a 4 point scale. The third input is the type of delivery the student is choosing (either ONLINE or In-Person). To be admitted into the graduate program a student must have a gpa of at least 3.25. The program will send the student a letter indicating whether or not they have been admitted to the program along with the delivery mode. Students with a gpa of 3.75 or higher are sent a letter indicating that they have been admitted as "scholars" in the program.

Which of the following best describes the set of equivalence partitions for gpa.

gpa < 0 (I)

gpa >4 (I)

0 <= gpa < 3.25 (V)

3.25<= gpa < 3.75 (V)

3.75<= gpa <= 4.0 (V)

gpa < 0 (I)

gpa >4 (I)

3.25 <= gpa <= 4.00 (V)

3.75<= gpa <= 4.0 (V)

gpa < 0 (I)

gpa >4 (I)

0 <= gpa <= 4 (V)

Question 3

3 / 3 pts

Which of the following is considered to be a data flow anomaly?

Referencing a defined variable

Defining a variable, but never using it

Defining a variable, using it, and then redefining it

Referencing a redefined variable

Question 4

5 / 5 pts

Consider the following code segment:

if A < C

then

 exchange A and C

else

 exchange A and C;

endif;

if B < C then

 exchange A and C:

endif:

Which of the following is the final symbolic values for A, B, C on the TT path?

Final Value of A = B₀

Final Value of B = C₀

Final Value of C = A₀

Final Value of A = C₀

Final Value of B = A₀

Final Value of C = B₀

Final Value of A = C₀

Final Value of B = B₀

Final Value of C = A₀

Final Value of A = A₀

Final Value of B = B₀

Final Value of C = C₀

Question 5**5 / 5 pts**

Given 3 inputs: P1 with values V1 and V2; P2 with values V3, V4, and V5 and P3 with values V6 and V7, what are the correct tests for a pairwise combination design of experiments?

V3	V1	V6
V3	V2	V7
V4	V1	V7
V4	V2	V6
V5	V1	V6
V5	V2	V7

This table tests every combination of pairs of values.

V3	V1	V6
V3	V2	V7
V4	V1	V7
V4	V2	V6

V3	V1	V6
V4	V1	V6
V5	V1	V6

V3	V1	V6
V3	V2	V7
V4	V1	V6
V4	V2	V7
V5	V1	V6
V5	V2	V7

Question 6**5 / 5 pts**

Which of the following is the cyclomatic complexity of the code given below?

if A < B or Z=0 then

exchange A and B:

```
endif
```

```
if B < C then
```

```
    exchange B and C:
```

```
endif
```

3

5

4

2

Incorrect

Question 7

0 / 3 pts

Given the code below, how many test cases are needed to achieve 100% multiple condition coverage?

If a > 15 or b < 2 or Z=0

 then Y = 25

 else Y = 30;

If w >5 or z < 10

 then X = 14

 else X = 0;

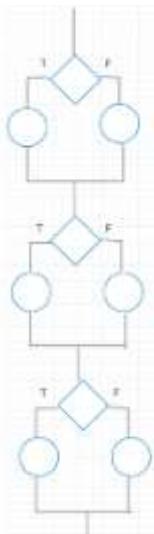
32

8

5

4**Question 8****5 / 5 pts**

Which of the following is a possible set of basis paths for the given control flow diagram.



- TTT / FTT / TFT / TTF
- TTT / FTT / FFT / FFF
- TTT / TTF / TFT / TFF / FTT / FTF / FFT / FFF
- TTT / TFT / TTF

Question 9**5 / 5 pts**

A new program for developing parking rates has been developed. Rates are based upon the classification of the vehicle owner (faculty, staff, student), the location of the parking (garage or open lot) and the size of vehicle (large or small). The rate for faculty parking in a parking garage or

open lot regardless of vehicle type is \$100.00. Students with a small vehicle pay \$250.00 in a lot and \$350.00 in a garage. Students with a large vehicle are not allowed to park in a garage but may park in a lot for \$400.00. Staff may park any vehicle anywhere for \$50.00. If one were to develop a decision table for testing this program, how many test cases / columns would be required.

5

11

7

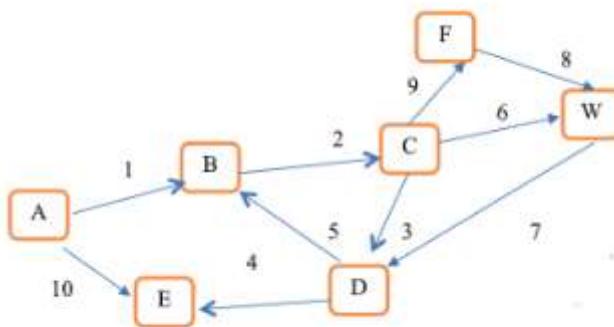
12

Question 10

5 / 5 pts

Given the state testing diagram below, how many test sequences would one find in the state testing tree?

You may assume "A" is the start state and "E" is the terminal state.



8

6

5

3

Incorrect

Question 11

0 / 3 pts

Which of the following is not considered a classic testing mistake?

- Focusing on usability issues
- Incorrectly documenting and reviewing test designs
- Lack of communication with developers
- Believing the primary objective of system testing is to find bugs

Incorrect

Question 12

0 / 5 pts

Given the code and test cases below, what is the highest level of test coverage achieved by executing all of the tests?

```
read (w, x, y, z)
if x > 20 and y > 4
    then s1
    else s2
endif;
if z < 50 and w > 10
    then s3
    else s4
endif;
```

--	--	--	--

Test #1	Test#2	Test#3	Test#4
x=25	x=15	x=30	x=5
y=3	y=2	y=6	y=10
z=55	z=75	z=25	z=3
w=5	w=5	w=25	w=2

- No level of control flow coverage achieved
- multiple condition coverage
- decision / condition coverage
- statement coverage
- decision coverage

Question 13

3 / 3 pts

When are test cases created in test driven development?

- After the code is developed
- Before code is developed
- While code is developed

Question 14

3 / 3 pts

What is an advantage of model based test development?



If there is a change in the model, new tests can automatically be generated

- Model based test development executes the system
- If there is a change in the model, tests will remain the same
- There are a set number of test generation criteria we can use

Question 15

6 / 6 pts

Assume we are testing a function with 3 variables:

Variable A: has values 0 and 1

Variable B: has values 0 and 1

Variable C: has values 0 and 1

What is the total 2-way variable value configuration coverage achieved by the following tests:

A=0; B=0; C=0

A=0; B=1; C=1

A=1, B=1, C=0

3/8

9/12

6/8

8/12

Question 16**3 / 3 pts**

What is the difference between mutation based fuzz testing and generation based fuzz testing?



There is no difference between mutation and generation based fuzz testing.



Mutation based fuzz testing does not require knowledge of inputs to create test data. Generation based fuzz testing needs to know specifications of the test input to create random test data.



Mutation based fuzz testing needs to know specifications of the test input to create random test data. Generation based fuzz does not require knowledge of inputs to create test data.

Question 17**3 / 3 pts**

In defect based testing, a defect taxonomy is used...?

To categorize test cases once test cases are developed

To derive test cases

When performing only system level testing

When test cases fail

Question 18**3 / 3 pts**

What kind of technique is metamorphic testing?

-
- Primarily a verification technique
 - Primarily a validation technique
 - Neither a verification or validation technique
 - Both verification and validation
-

Question 19**3 / 3 pts**

Exploratory testing is the same as ad hoc testing.

-
- True
 - False
-

Question 20 Original Score: 0 / 3 pts Regraged Score: 3 / 3 pts

⚠ This question has been regraded.

Which of the following is not a possible tour in exploratory testing?

-
- Performance tour
 - Scenario tour
-

- Variability tour
- Complexity tour

Question 21**5 / 5 pts**

Consider testing utilizing equivalence partitioning a program with the following 2 inputs and equivalence partitions? Which of the following describes the minimum number of tests needed?

Input 1: X

1..10 (V)

11.. 50 (V)

<1 (I)

> 50 (I)

Input 2: Y

50..75 (V)

76.. 80 (V)

<50 (I)

> 80 (I)

- 4 valid tests and 4 invalid tests

- 1 valid and 2 invalid tests

- 2 valid tests and 2 invalid tests

- 2 valid tests and 4 invalid tests

Incorrect

Question 22 Original Score: 5 / 5 pts Regraged Score: 0 / 5 pts

! This question has been regraded.

Given the following code and test cases, is the following true or false:

"all uses" data flow coverage is achieved for variable "x"?

x := 0; (notation means assign 0 to X)

y:= 0;

read (a,b,c);

if a > 10

 then x := 5

 else y:= 5;

if b > 10

 then x := x + y

 else y:= x + y

if c > 10

 then z := x + y;

Test 1. a = 19, b = 15 c = 5

Test 2. a = 5, b = 16 c = 15

Test 3 a = 20 b = 5 c = 18

Test 4 a = 6 b = 4 c = 2

True False

Incorrect

Question 23 Original Score: 5 / 5 pts Regraged Score: 0 / 5 pts

! This question has been regraded.

Given the following code and test cases, is the following true or false:

"all uses" data flow coverage is achieved for variable "y"?

x := 0; (notation means assign 0 to X)

y:= 0;

read (a,b,c);

if a > 10

 then x := 5

 else y:= 5;

if b > 10

 then x := x + y

 else y:= x + y

if c > 10

 then z := x + y;

Test 1. a = 19, b = 15 c = 5

Test 2. a = 5, b = 16 c = 15

Test 3 a = 20 b = 5 c = 18

Test 4 a = 6 b = 4 c = 2

True False**Question 24****6 / 6 pts**

Consider the following code segment:

if A < C

then

 exchange A and C

else

 exchange A and B;

endif;

if B < C then

 exchange B and C:

endif:

What is the path expression for the TT path?

 (A₀ < C₀) and (C₀ < A₀) (A₀ < C₀) and (B₀ < C₀) (A₀ < C₀) and (B₀ < A₀) (A₀ < C₀) or (B₀ < A₀)**Quiz Score: 79 out of 100**

! Correct answers are no longer available.

Score for this quiz: **74** out of 100

Submitted Oct 3 at 4:05pm

This attempt took 65 minutes.

Question 1

2 / 2 pts

Which technique answers the question: "Are we building the right product?"

- Verification
- Validation

Correct! Validation checks that what we are developing is the right product.

Question 2

5 / 5 pts

Question 2

Consider the following specification for a program:

A computerized letter is to be sent to high school seniors telling them their graduation status. There are three inputs.

The first input is a 10 digit identifying number (ID Number).

The second input is the student's grade point average (gpa) which is a real number.

The third input is a real number indicating the balance of the student's account.

For students with $0 \leq gpa < 1.0$ a letter is output informing the student that they will not graduate. For $1.0 \leq gpa \leq 3.0$ a letter is output informing the student that they have met the requirements for graduation. For $3.0 \leq gpa < 3.7$ a letter is output informing the student that they will graduate with honors. For $3.7 \leq gpa \leq 4.0$ a letter is output informing the student they will graduate with highest honors. The letter also contains the balance of the student's account.

Which of the following best describes the set of equivalence partitions for gpa.

gpa < 0 (I)

gpa > 4 (I)

$0 \leq gpa < 1.0$ (I)

$1.0 \leq gpa < 3.0$ (V)

$3.0 \leq gpa < 3.7$ (V)

$3.7 \leq gpa \leq 4.0$ (V)

gpa < 0 (I)

gpa > 4 (I)

$1.0 \leq gpa < 3.0$ (V)

$3.0 \leq gpa < 3.7$ (V)

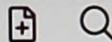
$3.7 \leq gpa \leq 4.0$ (V)

gpa < 0 (I)

gpa > 4 (I)

$0 \leq gpa < 1.0$ (V)

$1.0 \leq gpa < 3.0$ (V)



For $3.0 \leq gpa < 3.7$ a letter is output informing the student that they will graduate with honors. For $3.7 \leq gpa \leq 4.0$ a letter is output informing the student they will graduate with highest honors. The letter also contains the balance of the student's account.

Which of the following best describes the set of equivalence partitions for gpa.

gpa < 0 (I)

gpa > 4 (I)

$0 \leq gpa < 1.0$ (I)

$1.0 \leq gpa < 3.0$ (V)

$3.0 \leq gpa < 3.7$ (V)

$3.7 \leq gpa \leq 4.0$ (V)

gpa < 0 (I)

gpa > 4 (I)

$1.0 \leq gpa < 3.0$ (V)

$3.0 \leq gpa < 3.7$ (V)

$3.7 \leq gpa \leq 4.0$ (V)

gpa < 0 (I)

gpa > 4 (I)

$0 \leq gpa < 1.0$ (V)

$1.0 \leq gpa < 3.0$ (V)

$3.0 \leq gpa < 3.7$ (V)

$3.7 \leq gpa \leq 4.0$ (V)

gpa < 0 (I)

gpa > 4 (I)

$0 \leq gpa \leq 4$ (V)

Question 3

Given 4 inputs: P1 with values A,B; P2 with value C, P3 with values F, X, and P4 with values G, H which of the following tests provides pairwise combination testing?

G	B	F	C
H	A	X	C
H	B	F	C

G	A	F	C
G	B	F	C
H	A	X	C
H	B	F	C

G	A	F	C
G	B	X	C
H	A	X	C
H	B	F	C

G	A	F	C
G	B	F	C
H	A	X	C

Question 4

You are asked to test a program which calculates the amount of medicine that would be given to a patient using the following rules.

- Patients with **age less than or equal to 30**; with **tcV level less than or equal to 3.5** and **YTF negative**; receives **1.0mg** of the medicine.
- Patients with **age less than or equal to 30**; with **tcV level less than or equal to 3.5** and **YTF positive**; receives **2.0mg** of the medicine
- Patients with **age less than or equal to 30**; with **tcV level greater than 3.5** and **YTF negative**; receives **no** medicine
- Patients with **age less than or equal to 30**; with **tcV level greater than 3.5** and **YTF positive**; receives **1.0mg** medicine
- Patients with **age less than or equal to 50**; with **tcV level less than or equal to 3.5** and **YTF negative**; receives **2.0mg** of the medicine.
- Patients with **age less than or equal to 50**; with **tcV level less than or equal to 3.5** and **YTF positive**; receives **2.5mg** of the medicine.
- Patients with **age less than or equal to 50**; with **tcV level greater than 3.5** and **YTF negative**; receives **no** medicine
- Patients with **age less than or equal to 50**; with **tcV level greater than 3.5** and **YTF positive**; receives **2.0mg** of the medicine.
- Patients with **age less than or equal to 70**; regardless of tcV or YTF levels; receives no medicine.

If one were to develop a **decision table** for testing this program, how many test cases / columns would be needed?

12

9

8

4

Question 5

5 / 5 pts

You are asked to test a program which calculates the amount of medicine that would be given to a patient using the following rules.

- Patients with **age less than or equal to 30**; with **tcV level less than or equal to 3.5** and **YTF negative**; receives **1.0mg** of the medicine.
- Patients with **age less than or equal to 30**; with **tcV level less than or equal to 3.5** and **YTF positive**; receives **2.0mg** of the medicine
- Patients with **age less than or equal to 30**; with **tcV level greater than 3.5** and **YTF negative**; receives **0.5mg medicine**
- Patients with **age less than or equal to 30**; with **tcV level greater than 3.5** and **YTF positive**; receives **1.0mg** medicine
- Patients with **age less than or equal to 50**; with **tcV level less than or equal to 3.5** and **YTF negative**; receives **2.0mg** of the medicine.
- Patients with **age less than or equal to 50**; with **tcV level less than or equal to 3.5** and **YTF positive**; receives **2.5mg** of the medicine.
- Patients with **age less than or equal to 50**; with **tcV level greater than 3.5** and **YTF negative**; receives **0.5mg medicine**
- Patients with **age less than or equal to 50**; with **tcV level greater than 3.5** and **YTF positive**; receives **2.0mg** of the medicine.
- Patients with **age less than or equal to 70**; regardless of tcV or YTF levels; receives **0.5mg medicine**

If one were to develop a **decision tree** for testing this program, how many test cases would be needed?

12

9

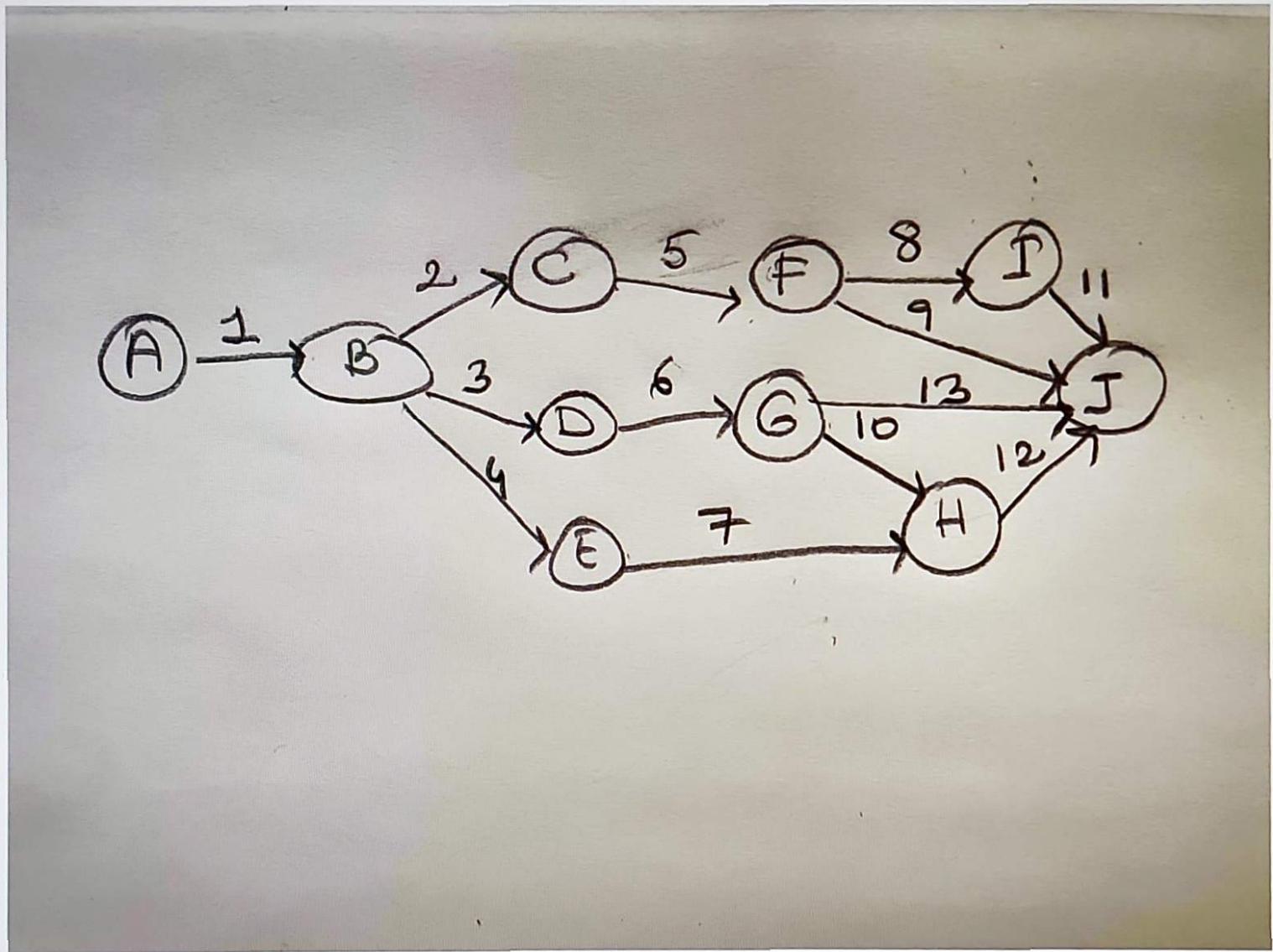
8

18

Question 6

Given the state testing diagram below, how many test sequences would one find in the state testing tree?

You may assume "A" is the start state and "J" is the terminal state.



3

4

13

5

Question 7

0 / 2 pts

Which one of the following actions is considered a classic testing mistake?

Starting testing early

Creating a regression test suite that verifies and validates changes in the code

Focusing on usability issues

Testers ***must*** focus on usability issues, so this is not a classic testing mistake. Please review "Classic Testing Mistakes: Review of Reading" in Week 1.

Attempting to automate all tests

Question 8

2 / 2 pts

Which of the following best describes exploratory testing?

Testing tours are used to ensure 100% functional and code coverage.

Exploratory testing does not require the use of a test oracle.

All tests are not created in advance and new tests are added during the testing process.

All tests are created in advance and sources of errors are further explored.

Question 9

What is an advantage of model based test development?

- Model based test development executes the system
- If there is a change in the model, tests will remain the same
- If there is a change in the model, new tests can automatically be generated
- There are a set number of test generation criteria we can use

st

Question 10

0 / 5 pts

Assume we are testing a function with 3 variables:

Variable X: has values 'a', and 'b'

Variable Y: has values 'c' and 'd'

Variable Z: has values 'e', 'f' and 'g'

What is the total 2-way variable value configuration coverage achieved by the following tests:

X='a'; Y='c'; Z='e'

X='a'; Y='c'; Z='f'

X='a'; Y='d'; Z='e'

X='b'; Y='d'; Z='f'

X='b'; Y='d'; Z='g'

6/8

8/12

12/16

11/16

Question 11

What is fuzz testing used for the *most often*?

- To detect vulnerabilities in a system

Correct! Fuzz testing is performed to detect vulnerabilities in software applications.

To determine how output changes based on inputs

To create test cases based on defect taxonomies

To explore software for errors using a pair of testers

Question 12

In defect based testing, what is used to identify the test cases to run?

- Inspection results of the code
- Defect taxonomy

Duration of the test cases

Test cases that require fewer resources to execute

Question 13

2 / 2 pts

What are some of the steps taken during exploratory testing? *Select all that apply.*

- Develop test cases driven from previous test results

Develop test cases when necessary or when needed in an ad-hoc manner.

Plan on test cases to develop

- Learn as much as possible about the application prior to the exploration

Question 14

Consider testing utilizing equivalence partitioning a program with the following 2 inputs and equivalence partitions? Which of the following describes the minimum number of tests needed?

Input 1: A

10..100 (V)

101.. 500 (V)

<10 (I)

> 500 (I)

Input 2: B

40..65 (V)

66.. 70 (V)

71.. 80 (V)

81.. 90 (V)

<40 (I)

>90 (I)

2 valid tests and 4 invalid tests

2 valid tests and 2 invalid tests

3 valid tests and 4 invalid tests

4 valid tests and 4 invalid tests

3 valid tests and 4 invalid tests

Question 15

A student can score a minimum of 70 points and a maximum of 100 points on an exam. Which one of these testes can be used for boundary level testing?

- Student score = {69, 101}
- Student score = {70, 85, 100}
- Student score = {70, 100}
- Student score = {69, 70, 100, 101}

rect

Question 16

0 / 2 pts

In the test development process, what is the analogous activity of coding during the software development process?

- Writing test cases
- Writing test objectives

Incorrect. Writing test objectives during the test development process is similar to requirement gathering during the software development process. Please review "Software Life Cycle" in Week 1.

Designing test cases

Creating a test execution schedule

Question 17

2 / 2 pts

Which central beliefs are part of the agile software development manifesto? *Select all that apply.*

- Sprints and daily standup meetings
- Detailed project documentation
- Customer collaboration
- Working software

Question 18

0 / 2 pts

During which testing level are all the components, including the hardware and software of a system, brought together and tested with other components?

- System testing
- Integration testing

Incorrect. Integration is about taking functioning units or components and integrating them within a system. The emphasis is on higher level functions and features, so things are more abstract, but we have not quite gotten to the level of testing *all* components of a system quite yet, such as hardware/software integration. Please review "Testing Levels and Types" in Week 1.

- Beta testing

- Acceptance testing

Question 19

Suppose that there is a program that deals with four inputs that are dependent on each other: A, B, C and D. Assume A has five different values, B has four different values, C has ten different values, and D has two different values. According to the decision table, how many test cases do we need to develop?

- 400 test cases
- 20 test cases
- 21 test cases
- 200 test cases

Question 20

5 / 5 pts

Suppose that package rates are calculated based on the size of the package (big or small) and the distance of the package's journey (long, medium, short). Big packages with a short distance costs \$20. Small packages with a medium distance cost \$10 and with a short distance cost \$5. Any other combination is not allowed. Which decision table *best* captures these requirements?

	1	**2**	**3**	**4**	**5**	**6**
Big	**X**	**X**	**X**			
Small				**X**	**X**	**X**
Long	**X**			**X**		
Medium		**X**			**X**	
Short			**X**			**X**
\$20				**X**		
\$10					**X**	
\$5						**X**
Not Allowed	**X**	**X**		**X**		

	1	**2**	**3**	**4**	**5**	**6**
Big	**X**	**X**	**X**			
Small				**X**	**X**	**X**
Long	**X**			**X**		
Medium		**X**			**X**	
Short			**X**			**X**
\$20						
\$10					**X**	
\$5						**X**
Not Allowed	**X**	**X**	**X**	**X**		

	1	**2**	**3**	**4**	**5**	**6**
Big	**X**	**X**	**X**			
Small				**X**	**X**	**X**
Long	**X**			**X**		
Medium		**X**			**X**	
Short			**X**			**X**
\$20	**X**		**X**			
\$10					**X**	
\$5						**X**
Not Allowed		**X**		**X**		

Question 21

Suppose that you have four inputs: P1 with values X,Y; P2 with value Z; P3 with values A,B; and P4 with values C,D,E. Given this information, which table contains the correct tests for a pairwise combination design of experiments?

P1	**P3**	**P4**
---	---	---
X	**A**	**C**
Y	**B**	**C**
X	**B**	**E**
Y	**A**	**E**
X	**B**	**E**
Y	**A**	**E**

P1	**P2**	**P3**	**P4**
---	---	---	---
X	**Z**	**A**	**C**
Y	**Z**	**B**	**C**
X	**Z**	**B**	**D**
Y	**Z**	**A**	**E**

P1	**P2**	**P3**	**P4**
---	---	---	---
X	**Z**	**A**	**X**
Y	**Z**	**B**	**X**
X	**Z**	**A**	**D**
Y	**Z**	**B**	**D**
X	**Z**	**A**	**E**
Y	**Z**	**B**	**E**

P1	**P2**	**P3**	**P4**
---	---	---	---
X	**Z**	**A**	**C**
Y	**Z**	**B**	**C**
X	**Z**	**B**	**D**
Y	**Z**	**A**	**D**
X	**Z**	**B**	**E**
Y	**Z**	**A**	**E**

Question 22

Which testing technique is used when there is a test oracle problem?

- Metamorphic Testing
- Mutation Testing
- Defect-based Testing
- Fuzz Testing

Question 23

Consider this code:

```
read (w, x, y, z)  
if x > 20 and y > 4  
then x = 10  
else x = 20  
endif;  
if z < 50 and w > 10  
then y = 10  
else y = 20  
endif;
```

Given this code, how many test cases are needed to achieve 100% decision condition coverage?

- 6
- 2
- 3
- 8

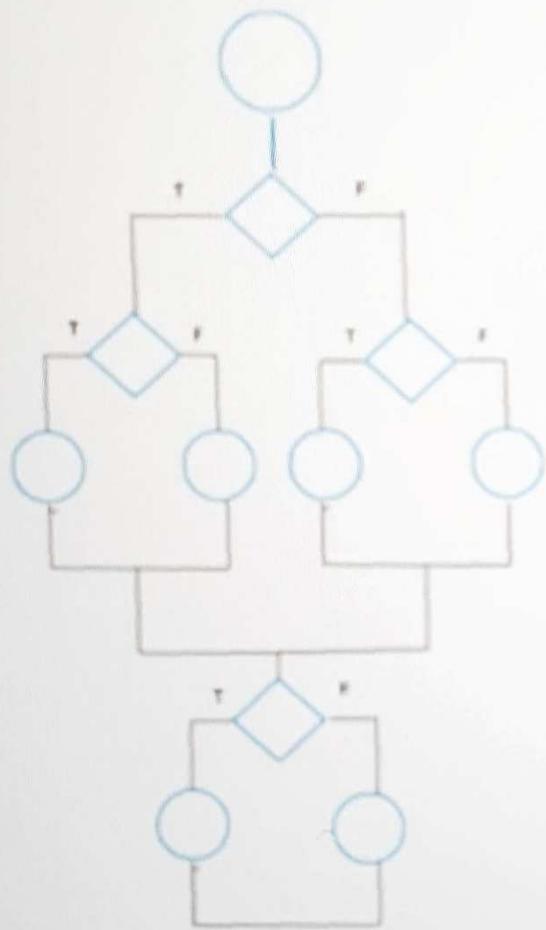
Incorrect. Each branch is not traversed at least once by eight test cases. Please review "Control Flow Coverage Levels" in Week 4.

Question 24

Original Score: 5 / 5 pts Regraged Score: 5 / 5 pts

! This question has been regraded.

Which set of paths provides possible basis paths for this control flow diagram?



- TTT, FTT, TFT, TTF, FTF
- TTT, FTT, FFT, FFF, TTF
- FFF, FTF, FFT, TFF, TFT
- FFF, TFT, FFT, TTF, FTT
- correct

Question 25

0 / 5 pts

Consider this code:

If ($x \leq 0$) or ($y \leq 0$) (0)

then

$x = x_2$ (1)

$y = y_2$

else

$x = x + 1$ (2)

endif

if ($x < 1$) or ($y < 1$)

then

$x = x + 1$ (3)

$y = y + 1$

else

$x = x - 1$ (4)

$y = y - 1$

endif

Given this code, what is the correct path condition representation for the False True path?

- $[(x_0 > 0) \text{ and } (y_0 > 0)] \cap [(x_0 \leq 0) \text{ and } (y_0 \leq 0)]$

Incorrect. Every variable defined is not tested in each of the different places that it ultimately is used.
Please review "Data Flow Testing" in Week 4.

- $[(x_0 \leq 0)] \cap [(x_0 > 0) \text{ or } (y_0 > 0)] \cap [(x_0 \geq 0) \text{ or } (y_0 \geq 0)]$

- $[(x_0 > 0) \text{ or } (y_0 > 0)] \cap [(x_0 \geq 0) \text{ and } (y_0 \geq 0)]$

- $[(x_0 > 0) \text{ and } (y_0 > 0)] \cap [(x_0 \leq 0) \text{ or } (y_0 \leq 0)]$

Question 26

Use the information provided in figure to calculate the DU paths. Based on the DU paths, what coverage do the given test cases provide?

$$A = 3; B = 2$$

$$A = 6; B = 5$$

Get a, b
X = 0

} Node 1

If $a \geq 5$ (Predicate I)

Then $c = x + 3$ (Node 2)

Else $c = b + 2$ (Node 3)

If $b < 4$ (Predicate II)

Then $b = c + 4$ (Node 4)

Else $x = b + 2$ (Node 5)

3/7

6/7

5/7

4/7

Question 27

Consider this code:

if A > B then

exchange A and B:

endif

if B > C then

exchange B and C:

endif

What is the cyclomatic complexity of this code? (Note: Express your answer as a number ONLY. For example 1, 2, 3, etc.)