CSE 464: Software Quality Assurance and Testing
Sample Final Exam

Note to USERS: This Sample example is only for the use CSE 464 students as a practice for the final exam. Publishing and redistributing this exam violates ASU academic integrity policy.

Your Name:_____

Directions: Total time for this practice test is **40** minutes. Answer all questions. Show your work clearly so that you may get partial points even if your final answer is wrong!) GOOD LUCK!!!

Part I : True/False and Multiple Choice Questions

1. **[5 Points]** Indicate whether the following statements are true or false. Each question is worth 1 point.

   i.) In software quality assurance we say errors become faults and faults become failures. In here, errors refer to errors in the code..... (T/F). F

   ii.) If the control-flow testing shows 100% code coverage, there is no need to functional testing (black-box) as all the code has already been tested in glass-box testing .....(T/F). F

   iii.) According to C-K matrix , a good OO design has more depth in inheritance hierarchy the as it encapsulates functionality at different levels better… (T/F). F

   iv.) Code inspection is more formal than walkthrough as the inspection is carried out by software professionals outside of the software development team… (T/F). T

   v.) Bug triage is the process of changing a new bug to verified status.....(T/F). F

2.) [20 Points] Select the best possible answer to the following questions. Each Question is worth 2 points

i.) Which of the following is least applicable in black box testing?

A) Specification of the system
B) Understand the environment in which the software will be deployed
C) Source code
D) Use cases

ii.) Which of the following "quality dimensions" are applicable for WebApps:
A) usability, performance, interoperability
B) security, maintainability, navigability
C) content, structure, function
D) all of the above

iii.) An objective of content testing is:
A) to uncover syntactic errors (e.g., typos, grammar mistakes) in text-based documents, graphical representations, and other media
B) to uncover semantic errors (i.e., errors in the accuracy or completeness of information) in any content object presented as navigation occurs
C) to find errors in the organization or structure of content that is presented to the end-user
D) all of the above E) none of the above

iv.) The decision table technique should be used in a situation where

A) Variables are physical variables B) Inputs are not independent
B) Variables are logical variables D) code is available to the tester

v.) Which of the following construct that cannot be modeled by the finite state model
A) Sequence B) selection C) concurrency D) repetition

vi.) Which of the following is NOT a factor that software testers use to design equivalent class-based test cases

A) valid inputs B) invalid inputs C) output D) System configuration
E) Cyclomatic complexity

vii.) Equivalent partitioning is commonly used in black-box testing.
Which of the following may not be considered in determining equivalent class?

B) Valid Input data B) Invalid input data
C) Minimum system requirement to run the software
D) Outputs D) Use case diagram

viii.) Which of the following JUnit tag is used in initializing object instances before running each and every test case?

A) @BeforeClass B) @AfterClass C) @Before D) @After

ix.) Which of the following statements best describes the functionality of the following JUnit test

```
@Test
public void Test2() {
int d=31, m=1, y=2010;

Date date = new Date(m, d, y);
date.increment();
assertEquals("test", "2/1/2010", date.toString());
}
```

A) It checks if the date.toString() method call returns the string "test"
B) It checks of the date.toString() method returns the "2/1/2010"
C) It checks if the incremt() method of the object.
D) None of the above

Part II: Short Answer Questions

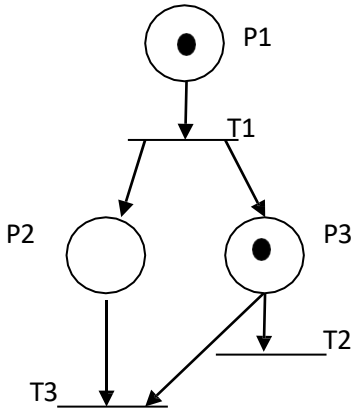
3. Testing the code:

a) How do you break (make the program to crash or produce erroneous output) the following code

```
int foo(int a , int b, int z)
{
  int x = (z-b)/a;
 return x;
}
```

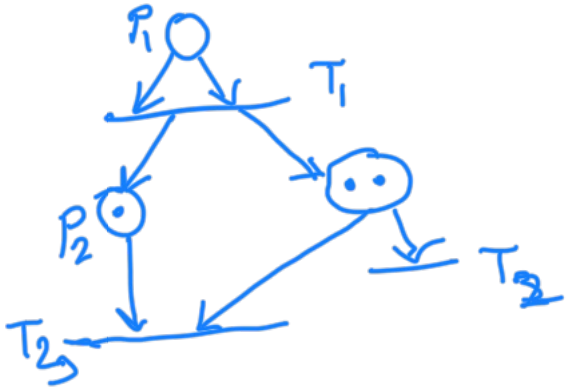
if a -> 0

b.) [8 Points] Answer the following questions based on the Petri-net given below



a) What are the transitions that are enabled? T_1 , T_2

b) Draw the snapshot of the Petri-Net after transition T1 is fired?



c) Why Petri-net is a better choice to model Web service workflow applications?

Because web service workflow applications can have different computation requirements like asynchronous communication, so possibly there can occur deadlock situation. Other modeling techniques discussed cannot solve such complex computing techniques.