# CS 497: Software Testing (A and B)

## Quiz 1

Time: 20 minutes                    Max Marks: 20                    Roll No. _____

**Q1.**                                                                                                    **16 Marks**

Select the most appropriate option. Select exactly one option. The selection should be clear. There will be no marks for unclear selections.

1.  Objective of software testing is to:
    a.  Identify faults in a system/program without executing the program
    b.  **Uncover faults in a software before the software gets released**
    c.  Uncover human errors and diagnose reasons of the human errors
    d.  All of the above
2.  Software testing and reviews are similar to each other because:
    a.  They have same cost of finding defects
    b.  They have same cost of fixing defects
    c.  **They share the objective of uncovering faults in software**
    d.  All of the above
    e.  a and b only
3.  Which of the following quality characteristics conflict with each other:
    a.  Correctness and Reliability
    b.  Correctness and Accuracy
    c.  **Efficiency and Integrity**
    d.  Robustness and Adaptability
4.  Which of the following quality characteristics conflict with each other:
    a.  **Correctness and Robustness**
    b.  Correctness and Reliability
    c.  Robustness and Usability
    d.  Reliability and Accuracy
5.  Setting explicit quality objectives as an element of software quality assurance program will:
    a.  Help testers test better
    b.  Help developers develop better
    c.  Help improve software quality
    d.  **All of the above**
    e.  a and c only

6. Which of the following captures software faults at a stage where it is the least costly to correct the fault?
    a. Software test execution
    b. Software test design
    c. Software development process
    **d. Reviews/inspection**
    e. a, b, and d only
7. Having an explicit software quality assurance activity in a software quality program means:
    a. The programmers who program quickly are rewarded better
    b. Sufficient human resources have been allocated to perform the SQA activity
    c. Sufficient budget has been allocated to perform the SQA activity
    d. a and c only
    **e. b and c only**
8. Traditionally software lifecycle has Testing as a phase. Contemporary findings suggest that reviews (as compared to software testing) have better percentage of uncovering faults. There is need to update software lifecycle and replace Testing with Reviews
    a. True (It is now time to have better development lifecycles)
    b. True (the studies are not contemporary, the studies have been done a few decades ago)
    c. False (The testers will not be able to perform reviews in the newly introduced phase)
    d. False (The testers will need to be trained in order to perform new types of activities)
    **e. None of the above**
9. Software testing and reviews are similar to each other because:
    a. None of the two can be considered a quality gate that determines if quality of software is sufficient at a particular stage
    b. Both uncover same types of faults
    c. Both can be automated
    d. Both have equal cost of finding defects
    **e. None of the above**
10. Software testing lifecycle consists of the following phases:
    **a. Test, Diagnose, Correct, Retest**
    b. Test Design, Code, Test Execution, Defect Diagnosis
    c. Code, test, debug
    d. Test, Debug, Correct, Code
11. Which of the following can be used to measure relative effectiveness of defect detection techniques:
    a. Percentage of defects detected
    b. Cost of finding defects
    c. Cost of fixing defects
    **d. All of the above**
    e. b and c only

12. General principle of software quality states that:
    a. Software quality can be measured through testing and reviews
    **b. Improving quality reduces software development costs**
    c. Improving software quality has no effect of development costs
    d. Software quality and software development costs are directly proportional to other
13. Which of the following should be part of a quality assurance program:
    a. Differentiate between external and internal quality characteristics
    b. Management should understand that quality assurance incurs additional costs up front
    c. Think about the ways in which some quality characteristics may compete with or complement others
    **d. All of the above**
    e. None of the above
14. Which of the following is an internal characteristic of software quality:
    a. Accuracy
    b. Reliability
    c. Correctness
    **d. Maintainability**
    e. None of the mentioned
15. Which of the following is an external characteristic of software quality:
    a. Readability
    b. Reusability
    **c. Integrity**
    d. Understandability
    e. None of the mentioned
16. The characteristics of quality which the users of software care about are known as:
    **a. External characteristics of quality**
    b. Internal characteristics of quality

**Q2.**                                                                      **4 Marks**

**Design** two black box test cases (using a proper test structure) for the divide function specified below:

**Specification:** The divide method should return quotient for all integer values of a and b. The method should return 0 in case b is 0.

Code of the function is provided below:

```
int divide(int a, int b){

        return a/b;

}
```

| TId | Purpose | Input Data | Expected Output | Actual Output | Result |
|---|---|---|---|---|---|
| 1 | Check if the function works with b = 0 | a=10, b=0 | 0 | | |
| 2 | Check if the function works when b is -ve | a=15, b=-3 | -5 | | |