STUDY GUIDE FOR THE

ASSOCIATION FOR SOFTWARE TESTING

BBST- BUG ADVOCACY SHORT COURSE

SHORT ANSWERS: On an exam, each question is worth 10 points.

1.   Compare and contrast three definitions of "software quality." Which do you prefer? Why?

2.   Compare and contrast three different definitions of "software error." Which do you prefer? Why?

3.   Use Weinberg's definition of quality. Suppose that the software behaves in a way that you don't consider appropriate. Does it matter whether the behavior conflicts with the specification? Why? *And* why not? (explain both)

4.   Use Crosby's definition of quality. Suppose that the software behaves in a way that you don't consider appropriate. Does it matter whether the behavior conflicts with the specification? Why? *And* *w*hy not? (explain both)

5.   Distinguish between customer satisfiers and dissatisfiers. Think of OpenOffice Impress: Give two examples of each.

6.   Joseph Juran distinguished between Customer Satisfiers and Dissatisfiers as key aspects of quality. A common extension adds the idea of "Delighters" (satisfiers that go beyond customer expectations). We could extend this further with the concept of "Stinkers" (dissatisfiers that go beyond what customers think of as forgivable faults). Consider OpenOffice Impress: give an example of each of these four things (satisfiers, dissatisfiers, delighters and stinkers) and explain why each is a good example. (If you can't find an example of each in Impress, feel free to draw examples from OpenOffice Writer or PowerPoint or Microsoft Word instead.)

7.   Explain the analogy between sales and bug reporting? What is your opinion of this analogy? Why?

8.   What is the difference between a fault and a failure? Given an example of each.

9.   One reason often given for fully scripting test cases is that the tester who follows a script will know what she was doing when the program failed, and so she will be able to reproduce the bug. What do you think of this assertion? Why?

10.   What is the difference between severity and priority of a bug? Why would a bug tracking system use both?

11.   Why test on one computer and replicate tests on a different one? What would you do if the results were different?

12.   Consider a bug report that a program prints a blank page at the end of a document when the document's last page is full. Describe two circumstances under which a programmer could reasonably argue that this bug should not be fixed and explain what makes the arguments reasonable.

13.   Explain the idea that we make bug-related decisions under uncertainty. What do you think of it

14.   The lecture presented a 6-factor approach to bug reporting: RIMGEA. What are the factors? (List and briefly describe them. Use a simple example when appropriate.)

15.   What does the lecture mean by a "credible source"? Suppose that you think it is really difficult to create appealing templates with OOo Impress. Who could be your credible sources for supporting (or reeducating you on) your design critiques?

LONG ANSWERS: On an exam, each question is worth 20 points.

1. Suppose that you find a reproducible failure that doesn't look very serious.

    - Describe the four tactics presented in the lecture for testing whether the defect is more serious than it first appeared.

    - As a particular example, suppose that the display got a little corrupted (stray dots on the screen, an unexpected font change, that kind of stuff) in Impress when you drag the scroll bar up and down. Describe four follow-up tests that you would run, one for each of the tactics that you listed above.

2. Suppose that you found a reproducible failure in the handling of tables by OOo Impress. You reported it, and the bug was deferred. *Other than further testing*, what types of evidence could you use to support an argument that this bug should be fixed, and where would you look for each of those types of evidence?

3. Imagine that you report something wrong with the program and the project manager responds that you have written an enhancement request, not a bug report. Assume that the project manager is making a rational statement that she believes is correct. How would she justify her statement (a) in a company that creates custom software under contracts that include detailed specifications or (b) in a company that develops software for its own use and does not rely on trusted specifications? In both cases, describe her strongest arguments. Then evaluate the arguments.

4. The Bug Advocacy lectures advise using test tools to improve bug reproducibility. Try one of the test tools that you think should help with reproducibility (obviously, you have to have done this before coming to the exam, but that's why we post the study guide in advance). Describe your experience with the tool and your sense of its strengths and weaknesses in terms of helping you improve the reproducibility of failing tests.

5. A bug has been in a product for 5 years. The project manager refuses to fix it, claiming that it has no importance because it has had no customer impact. Describe three ways that you could check whether this bug (or one like it) has customer impact. In each case, include in your description what kind of information you are looking for (be specific), how you would get that type of information, and how that information would be useful in demonstrating the magnitude of customer impact.

6. A program's memory management is weak. You have reported several crashes caused by out-of-memory conditions but the project manager responds by saying customers should buy more memory if they're going to do tasks that are so complex. To this point, the triage team agrees with the project manager. Suppose that you wanted to get this bug fixed. What are your three best

ideas for influencing people in order to fix the bug? Explain why these are good ideas.

7. The lectures draw an analogy between bug analysis and signal detection theory. What is signal detection theory and how has it been applied to complex judgments? (NOTE: Don't be one of the people who mistakenly asserts that SDT has only been applied in simple experiments like studies of sound perception. If you need more information, ask Google.) What guidance does SDT offer when we apply its reasoning to testing?

8. Describe three things that will bias a bug report reader against taking the bug report seriously. Why would these have that effect? How should you change your bug reporting behavior to avoid each of these problems?

9. Consider three of the common sources of bias in decision-making: desired result, probability of the result, and perceived importance of the result. Now imagine managing a tester who you want to test the creation of templates for OpenOffice presentations. How might consideration of these biases guide your thinking about how to manage and advise this tester? (One often-successful way of approaching this question is to consider two different possible desired bug-reporting approaches (or patterns of bug-reporting behavior) for this tester, and for each, consider how setting your tester's bias in a certain way might foster one approach or the other.)

10. Joseph Juran distinguished between Customer Satisfiers and Dissatisfiers as key aspects of quality. In contrast, Gerald Weinberg defines quality as "value to some person." Suppose we revised a program so that it looked up all display text (e.g. menu names) from a text file on disk, so the user could change the language of the program at any time (e.g. French menu text to Chinese). Suppose too that, because of this change, the new version is much slower than the last, making some people unhappy with it. How would Juran evaluate this (is it a bug, or a feature?) How would Weinberg? Explain your reasoning in both cases.