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May 12, 2020

**University of Wisconsin – Green Bay**

# COMP SCI 372 Spring 2020 Final

**Total: 50**

**Multiple Choice Questions: (1\*10 = 10)**

1. Two types of prototypes can be done in design. They are:

1. Architecture Design, Detailed Design
2. Low-fidelity, High-fidelity
3. Logical View, Process View
4. Logical View, Detailed Design

2. Which of the following characteristics ensures common terminology is used across the system’s display screens, reports, database elements, and process logic?

1. Consistency
2. Completeness
3. Requirements
4. All of these are correct.

3. To help get project X done faster, the detail design is done as part of the implementation. What are the issues for project X?

1. Less cohesive design
2. Less organized design
3. Different design authors
4. All of these are correct.

[5] Less cohesive design and less organized design.

4. We consider code indentation a very important issue affecting:

1. readability.
2. maintainability.
3. requirements.
4. All of these are correct.
5. readability and maintainability.

5. Consider the situation where we have two input variables *X* and *Y*, where *X* can take on 7 valid values and *Y* can take on 10 valid values. If one wanted to test all the combinatorics of just the valid values of these two input variables, how many test cases need to be developed and executed? [1] 70

1. 80
2. 90
3. 100

6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the process of managing all the pieces and parts of artifacts produced as part of software development and support activities.

1. Software engineering
2. Software configuration management
3. Build process
4. Configuration management framework

7. Which of the following tools are used for version control?

1. Make
2. Git
3. Gradle
4. None of these are correct.

8. What is provided in product maintenance updates?

1. Product defect problems
2. Small functional enhancements
3. Privacy
4. All of these are correct.
5. Product defect problems and small functional enhancements

9. The technical problem/fix analysts are usually:

1. experts.
2. testers.
3. engineers.
4. All of these are correct.
5. experts and testers.

10. COCOMO is used in which of the following?

1. Planning
2. Organizing
3. Monitoring
4. Adjusting
5. All of these are correct.

**Essay Questions (5\*8=40)**

1. Explain the four phases for database design.

The four phases of database design are conceptual modeling, logical design, physical design, and deployment/maintenance. The conceptual modeling is where basic modeling conception can be deployed to define high-level user operations. The logical design is where the database schema is being generate using ER or classic diagram. The physical design is where the database is being implemented. Finally, the deployment/maintenance phase is where the database is available for access and can be update or maintain.

1. Name key factors in analyzing application interfaces.

In analyzing an interface, the Schneiderman and Plaisant rules have multiple key. The interface needs to have consistency, short cuts for frequent users, informative feedback, dialogues should result in closure, strive for error prevention and simple error handling and easy reversal of action along with internal locus of control and reduce short-term memory.

1. Briefly discuss the issues associated with naming variables and procedures in a program.

One of the issues associate with naming variables and procedures in programing is the confusion among developer. Variable are key to identifying its meaning and purpose in the programs. If the name is not properly assigning to the right variable, the procedures of the program can be halted or delay. In addition, the naming of variables can have a detrimental impact on the program if not properly communicated as different components may not match with each other once combine.

1. For boundary value testing of a single input variable X, which is specified as a positive integer between 5 and 200, list one set of boundary value test cases for X.

A set of boundary value test cases need to do an equivalence-class partitioning meaning that it needs one at the boundary, one outside the boundary, and one inside the boundary. An example of a test case for x is: (5, -10, 50)

1. How would software configuration management vary between organizations, depending on project complexity, software process (agile vs waterfall), and degree of risk aversion?

The software configuration management artifacts will vary between organization depending on the project complexity, software process, and degree of risk aversion. Artifacts are product of software development. Since software development varies between organization, that mean that the artifact they produce will also vary. For example, one organization may have a complex design documentation base on their software development method while another has simple designs. Regarding this situation, one organization will have easier management over their design artifacts. Managing testing process will also differ between organization with different project complexity, software process, and risk aversion. In the end, vary between the software configuration management is the number and variety of artifacts.

1. Explain the customer problem arrival curve in terms of customer usage of the product and fixes.

During the period right after the release of the product many problems are discovered and reported. This mean that the problem arrival will grow at the release of the product. After a period after fixing discovered problems, the number of customer problem arrival will decrease; At the same time, the nature of the problem will become more difficult to diagnose

1. What is POMA?

POMA is a project management process that stand for Planning, Organizing, Monitor of Status, and Adjustment. Planning is the first step and it is about understanding the requirements of the project. Organizing is about arranging the necessary requirements to complete the project such as designs, hiring people, and training. Monitoring is keeping track of the project to ensure that it is still meeting the deadline. Finally, Adjustment is about making changes to the project to prevent or fix problems.

1. How do the project team members know if a project is progressing properly?

For the project team members to know if the project is progressing properly, there need to be a proper monitoring process in place. There are three main components to monitoring the current progress of the project. The first is collecting the status information of each components and combining them into a collection. The next step is to have an analysis and evaluation of the collected information. Finally, the entire team need to be presented and communicated with in regard of the project status. This will ensure that project teams members are ware of the current project progression.