Question 1

1 / 1 pts

According to Boehm, which of the following is the best definition of **verification** and of **validation?**

- Validation: building the right product.
  Verification: building the product right.
- Verification: the state of the software meeting the requirements.
  Validation: whether the product fulfills the requirements.
- Validation: whether the product is built to the correct level of quality.
  Verification: whether the product will meet the needs of the stake holder.
- Verification: how responsive the software development process is to auditing.
  Validation: the state of the software meeting the requirements.
- Validation: how the software engineer feels about himself.
  Verification: the process of the software engineering giving himself a good look in the mirror.

Question 2

1 / 1 pts

Please order the steps in the software development process

Detailed Design Specification	3
Product Design Specification	2
Requirements Specification	1

Question 3

10 / 10 pts

Boehm enumerates four V&V criteria with several associated properties. Classify each property description to the criteria it is a part of.

The measure of the amount of unknown or poorly understood aspects of the system	Feasibility : Risk
The measure of the absent functionality that should be (but is not currently) in the system	Completeness : Missing Func
The measure of how possible it is to determine whether system meets the specification	Feasibility : Testability
The measure of how possible it is to determine where a given part of the specification came from	Consistency : Traceability
The measure of whether there are items missing from the specification that normally are part of the standard format	Completeness : Missing spec
The measure of whether items within the specification do not conflict with each other	Consistency : Internal consis
The measure of whether the resulting system will be maintainable when it is completed	Feasibility : Program enginee
The measure of how usable the resulting system will be	Feasibility : Human engineer
The measure of how well the resulting system will or will not conflict with other entities	Consistency : External consis
The measure of whether there remains parts of the specification that have yet to be determined	Completeness : TBD
The measure of whether the external resources are capable of supporting the software system	Feasibility : Resource engine
The measure of whether all parts of the specification that need to be there are actually present in the specification, such as a reference to an appendix when the appendix is not there	Completeness : Nonexistent

Question 4

12 / 12 pts

Match the item on the Reliability and Availability Checklist at the end of the Boehm paper with the type of error it could catch.

Are there requirements for clear, helpful error messages?	When I specify a URL that do
Are records kept of the inputs for later failure analysis or recovery needs?	I am not going to keep a log of
Are there adequate provisions for backup and recovery capabilities?	The user's picture in an Adob
Are input codes engineered for reliable data entry? In other words, we wish to avoid the user making a careless and harmful mistake.	To remove all the emacs back
Are there requirements for diagnostic and debugging aids?	Why should I use asserts? The
Are there provisions for protection against singularities?	Every time I perform division
Are there design standards for synchronization of concurrent processes? Are they being followed?	My bank software is designed
Is the data structured to avoid harmful side effects?	I love global variables! What I
Do inputs include some appropriate redundancy as a basis for error checking?	My grading software makes s
Have these provisions been validated by means of a failure modes and effects analysis? In other words, how does the system recover from catastrophic errors?	I asked my tester to periodica
Are all off-normal input values properly handled? in other words, how do we handle data this outside the expected range?	My grade program checks tha
Are man-machine dialogues easy to understand and use for the expected class of users? Are they hard to misunderstand and misuse?	My mobile game designed for

Question 5

3 / 3 pts

According to IEEE Standard 1028-1997, match the following terms with the definitions:

The process of presenting the design of a software product to a group of interested people for the purpose of getting sign-off or suggestions	Review
The process of carefully looking at the code for the purpose of finding problems	Inspection
The process of the programmer explaining each aspect of the design to a group of interested people for the purpose answering questions	Walkthrough

Question 6

5 / 5 pts

According to Fagen, match the role with the description of the role

An engineer describing aspects of the design during a meeting	Reader
An engineer looking for test-cases	Tester
A manager who coordinates the efforts of the rest of the team	Moderator
An engineer who wrote the code to be inspected	Author

Question 7

11 / 11 pts

Match the following activities with Fagan's inspection steps. Note that more than one activity may match with a given step.

Identify who should be part of the inspection team	Planning
Give members of the team the documents relevant to the inspection	Overview
Members of the inspection team review the software source-code	Preparation
A complete list of defects is produced from the partial list generated by the individual members of the inspection team	Examination
Fix a defect	Rework
Perform regression testing: verify that each fix works as expected and did not cause further problems	Follow-up
Members of the inspection team are assigned roles	Planning
A meeting is called where the members of the team are informed of the scope and purpose of the inspection	Overview
Members of the inspection team review the requirements document and the specification	Preparation
Defects are presented to members of the inspection team	Examination
Solutions are found for the defects	Rework

Question 8

5 / 5 pts

Several changes have been proposed to Fagan's original model. Please match the motivation for the change with the proposed change.

Any one team often misses many defects	N-fold inspection
The preparation stage can be overwhelming, thereby reducing its effectiveness in the process	Active design review
Large inspection teams, especially with inexperienced engineers, can be inefficient	Two-person inspection
The least effective use of resources is the inspection phase	Inspection without a meeting
There are too many things to consider on a single pass of the code. It is better to take multiple passes, each one looking at a different aspect of the product	Phased inspection