**Midterm Exam 1: 100 Points Name: Section**

1. **(10 Points) How can Software Development Process patterns assist a development team build software products efficiently?**

ANSWER: Process patterns are proven solutions to commonly encountered development problems. If developers can recognize that that this is problem seen before they can use a previously known means of solving it, without have to take the time to invent a new solution.

1. **(10 Points) Explain what is wrong with the notion that computer software does not need to evolve over time.**

ANSWER: Computer software must be revised as errors are discovered and corrected. Software must be updated to accommodate changes in the computing environment. Many times a customer will request changes to add new functions to an existing product or to accommodate changes in the business environment. Sometimes an older system will need to be re-engineered to provide benefits to the user in a modern context. The bottom line is that software that does not evolve will eventually become unusable.

**3. (10 Points) Why is it important for software processes to be agile?**

ANSWER: Software process provides the stability, control, and organization to an activity to prevent it from becoming chaotic. Yet, modern software processes must only demand the activities, controls, and work products that are appropriate for the team and product to be produced – to ensure that it can accommodate changes easily and deliver a high quality software product.

1. **(10 Points) Describe the role of customers and end-users on an agile process team?**

ANSWER: Customers and end-users participate as full collaborators on agile process teams. They are the source of information used to create use cases and provided needed information on the business value of proposed software feature and functionality. They also provide much needed feedback on operational prototypes during incremental delivery of software increments.

1. **(10 Points) Why should requirements engineering be an iterative process?**

ANSWER: It is impossible for stakeholders to describe an entire system before seeing the working software, and it is difficult for stakeholders to describe quality requirements needed for the software before seeing it in action as a prototype. Developers must recognize that requirements will be added and refined as the software increments are created. Using prototypes may increase the volatility of the requirements if stakeholders are not focused on getting things right the first time.

5. (-2) It is hard for stakeholders to describe the whole system before seeing the working software.

1. **(10 Points) List at least five characteristics all software engineers should poses?**

ANSWER:

* Sense of individual responsibility
* Has an acute awareness of the needs of other team members
* Brutal honesty
* Resilience under pressure
* Heightened sense of awareness
* Attention to detail
* Takes a pragmatic approach to software engineering

1. **(10 Points) Why are nonfunctional requirements important to the requirements engineer?**

## ANSWER:

## A nonfunctional requirement (NFR) can be described as a quality attribute, a performance attribute, a security attribute, or a general constraint on a system. These are often not easy for stakeholders to articulate, yet the software may not be used without including the NFRs.

1. **(10 Points) What is the most significant result of the written requirements engineering process?**

## ANSWER:

## The intent of requirements engineering is to provide stakeholders with a written understanding of the problem,

## 8. (-2) The intent of requirements engineering is to provide stakeholders with a written understanding of the problem.

1. **(10 Points) Which UML (unified modeling language) diagrams are useful in scenario-based modeling?**

## ANSWER:

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## 9. () Use-case diagrams; Activity diagrams; Sequence diagrams are also useful

1. **(10 Points) What are the most important use of Use Cases as we go from written Requirements phase to Requirements Analysis and Modeling phase?**

10.() Usage also includes: Identification of Actors; Identification of Classes; Interaction of actors and objects; Collaborations of objects.

Jichen