1. Discuss one advantage and one disadvantage of the waterfall process.

* Advantage: gives software project managers a way to describe the status more precisely
* Disadvantage: heavy documentation

1. What is the goal of a software process model?

The goal is to provide guidance for systematically coordinating and controlling the tasks that must be performed in order to achieve the end product and the project objectives.

1. What are the four quadrants in a spiral model?

* Determine objectives, alternatives, and constraints
* Evaluate alternatives, identify, resolve risks
* Develop, verify next-level product
* Plan next phase

1. What are the entry and exit criteria for a step or activity in a process?

* Entry criteria: prior to performing any of the activities, we must ask for the condition that allows the performer of that activity to start. The conditions for initiating the activity define the entry criteria.
* Exit criteria: before an activity is declared complete, the exit criteria for such a declaration need to be specified ahead of time. Only when those criteria are met can the activity be considered complete.

1. What motivated software engineers to move from the waterfall model to the incremental or spiral model?

Reducing risk factors that waterfall model cannot handle as well.

1. List the key processes in the SEI’s CMM model that are required for maturity level 2.

* Requirements management
* Software project tracking and oversight
* Software quality assurance
* Software project planning
* Subcontract management
* Software configuration management

1. List the key processes in the SEI’s CMM model that are required to move from maturity level 2 to maturity level 3.

* Organization process focus
* Training program
* Software product engineering
* Peer reviews
* Organization process definition
* Integrated software management
* Intergroup coordination

1. List the key processes in the SEI’s CMM model that are required to move from maturity level 3 to maturity level 4.

* Quantitative process management
* Software quality management

1. List the four core values of XP.

* Frequent communication between team members and with the customer
* Simplicity in design and code
* Feedback at many different levels. Unit tests and continuous integration provide feedback to the individual developer, or pair of developers. Also, small integrations provide customer feedback
* Courage to implement hard but necessary decisions. One possible decision is to not use XP, if it does not seem appropriate for the project

1. Out of the list of XP practices, which of them have you practiced?

I’ve done planning, short releases, simple design, refactoring, pair programming, collective ownership, continuous integration, and coding standards.

1. Explain some of the characteristics of Agile methodologies.

* Assumes requirements will change
* Informal design and iterative
* User involvement is crucial
* Minimal documentation
* Informal communication throughout the project
* Relatively low progress complexity
* Low overhead

1. Compare and contrast Agile and traditional methods.

|  |  |  |
| --- | --- | --- |
|  | **Agile** | **Traditional/ Heavy** |
| Requirements | Assumes they will change, uses constant user interaction instead of formal requirements | Assumes they will not change, any changes in requirements after the design or implementation has started will be costly |
| Design | Informal and iterative | Formal and done up front, after all requirement are known |
| User involvement | Crucial, frequent, throughout the whole process | Required only at the beginning and at the end |
| Documentation | Minimal, relies on source code as the ultimate documentation | Requires heavy, formal documentation of every phase of the project |
| Communication | Done informally, throughout the project | Relies mainly on documents and formal memos and meetings |
| Process complexity | Relatively low | High |
| Overhead | Low | Relatively high, although can be scaled down for smaller projects |

1. Agile methods prefer working programs over comprehensive documentation. True or False?

TRUE

1. Agile methods prefer rigid processes over adapting to the people. True or False?

FALSE

1. What is test-driven development, and which Agile process advocates it?

Ensure that testing is done continuously and is automated as much as possible, and user involvement in the project.

1. What is the Kanban method modeled after?

Japanese Kanban board

1. When we “pull” in a software development process, what are we pulling?

When we “pull” in a software development process, we are “pulling” work.