

Chapter 3: Agile Software Development

Your name:

Answer all questions. 1 mark per question

1. What are the shared characteristics of different approaches to rapid software development?

The processes of specification, design and implementation are inter-leaved.

The system is developed and delivered as a series of versions.

User interfaces are often developed using an interactive development system that supports rapid UI development.

2. For what types of system are agile approaches to development particularly likely to be successful?

Small and medium-sized software product development.

Custom software development in an organization where there is a clear commitment from customers to become involved in the development process.

3. List the 5 principles of agile methods.

Customer involvement,

Incremental delivery,

People not process,

Embrace change,

Maintain simplicity.

4. List 4 questions that should be asked when deciding whether or not to adopt an agile method of software development.

Any 4 from those below. Others are also possible (see Ch 3)

Is an incremental delivery strategy realistic?

What type of system is being developed?

What is the expected system lifetime?

How is the development team organized?

Is the system subject to external regulation?

How large is the system that is being developed?

5. What are three important characteristics of extreme programming?

Requirements expressed as scenarios,

Pair programming,

Test-first development.

6. What is test-first development?

When a system feature is identified, the tests of the code implementing that feature are written before the code. Tests are automated and all tests are run when a new increment is added to the system.

7. What are the possible problems of test-first development?

Programmers may take short-cuts when developing tests so that the system tests are incomplete.

Some tests can be difficult to write incrementally.

It is difficult to estimate the completeness of a test set.

8. Briefly describe the advantages of pair programming.

It supports the idea of common ownership and responsibility for the code.

It serves as an informal code review process.

It helps support refactoring.

9. What is a Scrum sprint?

A short (3-4 weeks) planning unit in which work to be done is assessed, features are selected for development, the software is implemented and delivered to system stakeholders.

10. What are the barriers to introducing agile methods into large companies?

Project managers may be reluctant to accept the risks of a new approach.

The established quality procedures in large companies may be incompatible with the informal approach to documentation in agile methods.

The existing teams may not have the high level of skills to make use of agile methods.

There may be cultural resistance if there is a long history of plan-driven development in the company.