

1. (5 Points) Which is (are) characteristic(s) of software?

- a) It is logical not physical.
- b) It does not wear out.
- c) Maintaining software is more complex than that of hardware.

Answer:

a, b, and c.

2. (5 Points) What is the definition of software engineering?

Answer:

- 1) The application of a systematic, disciplined, quantifiable approach to the development, operation, and maintenance of software; that is, the application of engineering to software
- 2) The study of approaches as in (1)

3. (5 Points) What are the four layers of software engineering?

Answer:

A quality focus, process, methods, and tools.

4. (10 Points) What are the required work products of the waterfall process model? (Check diagram in Module 2, slide #4)

Answer:

SRS (Software Requirement Specification)

SDD (Software Design Document)

Code

Software Product

5. (5 Points) Among the waterfall process model, the spiral process model, the Rational Unified process model, and agile process model, which is (are) considered as heavy-weight process model?

Answer:

The waterfall process model, the spiral process model, and the Rational Unified process model are heavy-weight process models.

6 (10 Points) What are the four life-cycle phases of Rational Unified Process? For each phase, what is(are) the work product(s)? (Check diagram in Module 2, slide #14)

Answer:

Phase	Work Products
Inception	Draft specification
Elaboration	Detailed specification, high-level design, central code
Construction	Code, tests
Transition	Product release

7. (5 Points) Which process model we studied incorporates risk as a fundamental activity?

Answer:

The spiral process model

8. (5 Points) What are the levels of CMM and characteristic of each level? (Refer to this article, https://en.wikipedia.org/wiki/Capability_Maturity_Model)

Answer:

Level	Characteristics
Initial	Organization's processes are (typically) undocumented, ad hoc , and reactive.
Repeatable	Organization's processes are repeatable .
Defined	Organization's processes are defined and documented.
Managed (Capable)	Organization's processes are quantitatively managed using agreed-upon metrics.
Optimizing (Efficient)	Organization focuses on continuous process improvement .

9. (10 Points) What are the three roles of a scrum team? Which role is responsible for gathering and clarifying requirements?

Answer:

The three roles are **product owner**, **scrum master**, and **team member**. **Product owner** is responsible for gathering and clarifying requirements.

10. (5 Points) For scrum backlog items, what attributes must each of them have?

Answer:

Each backlog item must have a specification, a priority, and an estimate of effort.

11. (5 Points) If a scrum team has completed 11, 24, and 19 user story points in the past 3 sprints, what is the average velocity of the team for the past 3 sprints?

Answer:

The average velocity = $(11+24+19)/3 = 18$

12. (10 Points) What does each scrum team member must state during daily scrum?

Answer:

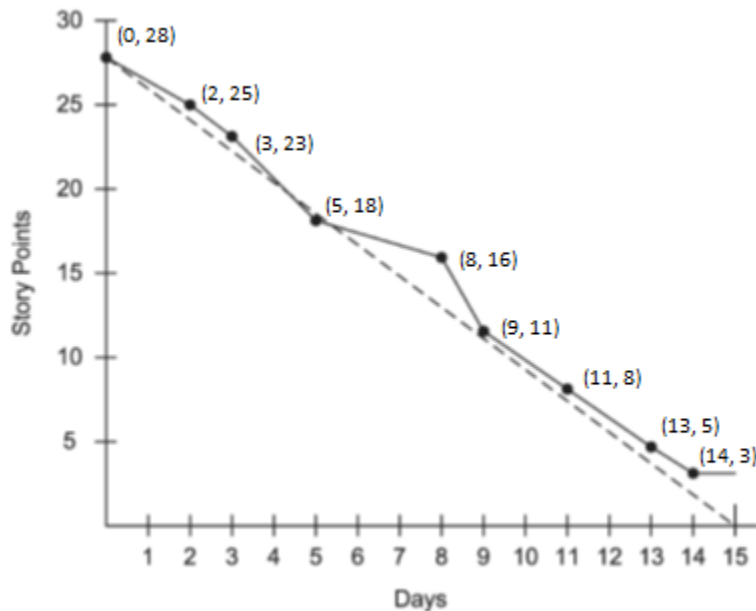
Each member must state:

What he/she did since the last meeting.

What he/she will do today.

What is impeding his/her progress.

13. (10 Points) Given the following scrum sprint burn-down chart, where solid line represents the real progress, answer questions in the table.



Question	Answer
How many user story points are planned for the sprint?	28
How many user story points are uncompleted by the end of the sprint?	3
What is the team velocity for this sprint?	25
How many user story points have been completed by the end of day 5?	10
How many user story points have been completed between day 5 and day 7?	0

14 (10 Points) Mark true or false for the following statements.

True or False	Statement
False	A process is a rigid prescription of a set of activities and tasks.
True	Communication activity applies to all projects and software processes.
False	Software requirements continually change, but change can be easily accommodated because software is flexible.
False	Agile process models are prescriptive process models.
True	Extreme programming requires developing unit tests before implementation solutions.

Submission Note

- 1) For written part of the questions:
 - a) Write your answers inside a text document (in plain text, MS Word, or PDF format)
 - b) Name the file as `firstname.lastname.assignment1.txt` (doc, docx, or pdf) with proper file extension
- 2) Due Sep 15th, 11:59 PM