



UNIVERSITY OF COLOMBO, SRI LANKA

UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY
(EXTERNAL)

Academic Year 2019 – 2nd Year Examination – Semester 4

IT4305: Rapid Software Development
Part I - Multiple Choice Question Paper

24th November 2019
(ONE HOUR)

Important Instructions :

- The duration of the paper is **1 (one) hour**.
- The medium of instruction and questions is English.
- The paper has **30 questions** in **10 pages**.
- All questions are of the MCQ (Multiple Choice Question) type.
- All questions carry equal marks.
- **Answer All** questions.
- Each question will have 5 (five) choices with **one or more** correct answers.
- There will be a penalty for incorrect responses to discourage guessing.
- The mark given for a question will vary from –1 (*All the incorrect choices are marked & no correct choices marked*) to +1 (*All the correct choices are marked & no incorrect choices are marked*).
- Answers should be marked on the special answer sheet provided.
- Note that questions appear on both sides of the paper.
If a page is not printed, please inform the supervisor immediately.
- Mark the correct choices on the question paper first and then transfer them to the given answer sheet which will be machine marked. **Please completely read and follow the instructions given on the other side of the answer sheet before you shade your correct choices.**
- **Calculators are not allowed.**

1. “Build projects around motivated people. Give them the environment and support they need, and trust them to get the work done”.

Select the most related **Agile Manifesto value** for the above statement from the following values.

- (a) Customer collaboration over contract Negotiation
- (b) Individuals and interactions over processes and tools
- (c) Responding to change over following a plan
- (d) Welcome changing requirements even late in development
- (e) Working software over comprehensive documentation

2. Label **A** in Figure-1 shows the point where the Scrum team makes a decision *when the cost of not making a decision becomes greater than the cost of making a decision*.

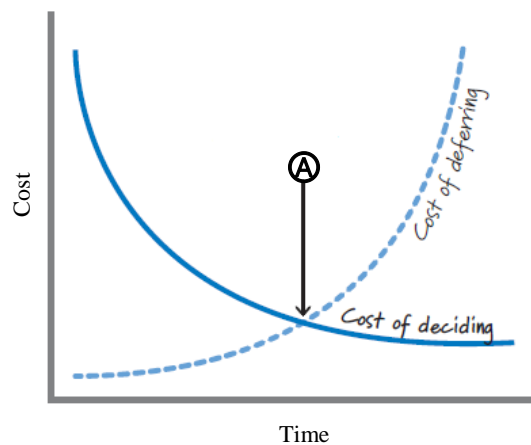


Figure-1

Source: *Essential Scrum, A Practical Guide to the Most Popular Agile Process* by Kenneth S. Rubin

It is known as the,

- (a) Danger Zone
- (b) Exploration
- (c) Last Responsible Moment (LRM)
- (d) Low Ceremony
- (e) Work in Process (WIP)

3. Which of the following phrases is/are correct regarding **end uncertainty** Scrum?

- i. It is also known as *what uncertainty*.
- ii. It refers to the uncertainty surrounding the features of the final product.
- iii. It refers to the uncertainty surrounding the process and technologies used to develop a product.

- (a) i only.
- (b) iii only.
- (c) i and ii only.
- (d) ii and iii only.
- (e) All i, ii and iii.

4. In Scrum, requirements are expressed as User Stories and Epics. Select the correct statement/s regarding User Stories and Epics.

- (a) An epic is a smaller version of a user story.
 (b) A user story is a very detailed, low-level requirement artifact.
 (c) A user story is broken down into epics at some point.
 (d) A theme is used to indicate that a set of user stories have something in common.
 (e) As a <role>, I can <activity>, so that <business value> is a correct user story template.

5. Which of the following phrases is/are correct regarding practices followed by the Scrum Team?

- i. Work on the most important and highest priority features first.
 ii. Decide on the work they will do in the next sprint at the end of each meeting.
 iii. Do not have a strict time limit to complete a Sprint.

- (a) i only
 (b) ii only
 (c) i and ii only
 (d) ii and iii only
 (e) i, ii, and iii

6. Match the level of planning (A, B and C) with the most relevant description (①, ② and ③) in Scrum multi-level planning.

Level of planning	Description
A- Daily planning	① It is about making scope, date, and budget trade-offs for incremental deliveries.
B- Sprint planning	② Team members get together and each member states what he/she has done since the last daily scrum and plan for today.
C- Release planning	③ Determine the specific product backlog item that the scrum team will work on in the next sprint.

- a) A → ①, B → ②, C → ③
 b) A → ①, B → ③, C → ②
 c) A → ②, B → ③, C → ①
 d) A → ②, B → ①, C → ③
 e) A → ③, B → ①, C → ②

7. Which of the following statements is/are correct regarding “**Backlog Grooming**” (the process of updating the product backlog)?
- It requires three principle activities; creating and refining PBIs (Product Backlog Items), estimating PBIs and prioritizing PBIs.
 - It usually takes place during the early development sprints only.
 - Collaborative backlog grooming increases the gap between technical stakeholders and business stakeholders of a project.

- (a) i only.
(b) ii only.
(c) i and iii only.
(d) ii and iii only.
(e) i, ii and iii.

8. Figure-2 shows a part of the Scrum framework.

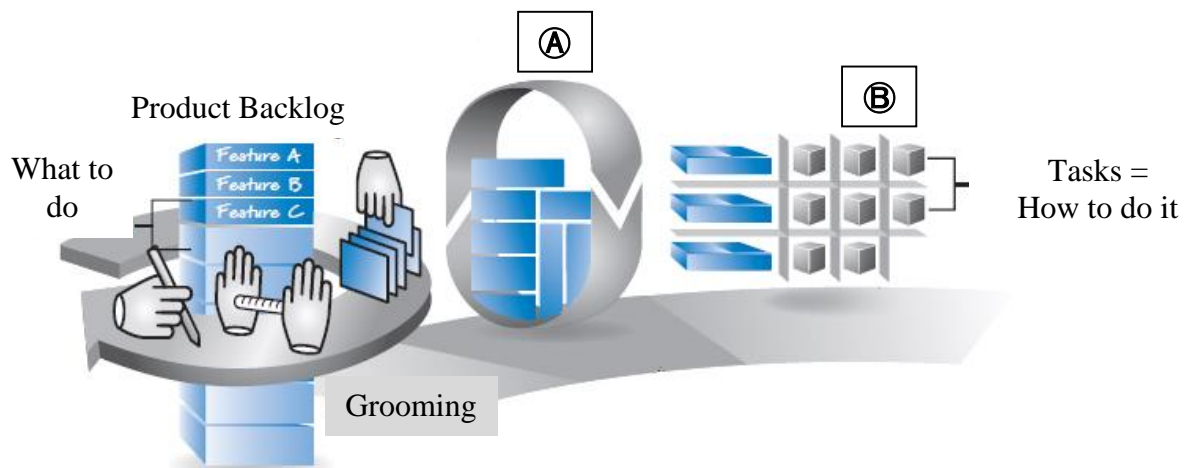


Figure-2: Part of the Scrum Framework

Source: *Essential Scrum, A Practical Guide to the Most Popular Agile Process* by Kenneth S. Rubin

Select the most suitable option(s) that match(es) correct terms to labels **Ⓐ** and **Ⓑ**.

- (a) Ⓐ → Sprint execution, Ⓑ → Sprint goal
(b) Ⓐ → Sprint planning, Ⓑ → Sprint backlog
(c) Ⓐ → Sprint planning, Ⓑ → Sprint goal
(d) Ⓐ → Sprint execution, Ⓑ → Sprint backlog
(e) Ⓐ → Sprint review, Ⓑ → Sprint backlog

Answer questions **9 and 10** based on the Sprint Burndown Chart given in **Figure-3**.

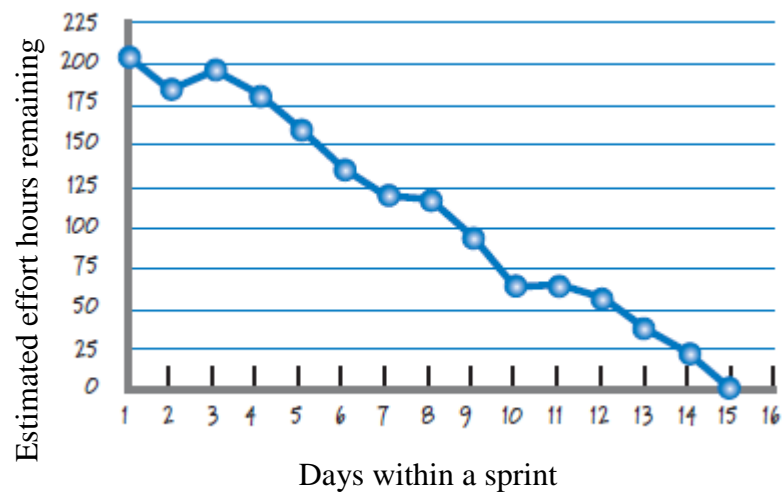


Figure-3: Sprint Burndown Chart

Source: Essential Scrum, A Practical Guide to the Most Popular Agile Process by Kenneth S. Rubin

9. According to the Sprint Burndown Chart in Figure-3, 200 estimated effort-hours are remaining on the first day of the sprint. On which day will the number of estimated effort-hours become **zero**?

(a) Day 1 (b) Day 13 (c) Day 16 (d) Day 15 (e) Day 17

10. In the scenario shown in Figure-3, if the team works at the current pace (speed), they would not be able to finish the work on time. If so, when will the number of estimated effort-hours become zero?

a) Between Day 1 to Day 14.
b) Day 15.
c) Day 0.
d) Day 16 or more.
e) Available data is not sufficient.

11. The _____ allows multiple scrum teams to coordinate with each other in a larger Scrum project.

(a) Component team
(b) Feature team
(c) Cross-functional team
(d) Scrum of Scrums
(e) Teams with T shaped skills

Consider the following roles played by either a Scrum Master or a traditional Project Manager when answering questions 12 and 13.

- ① - Responsible for getting the allocated work done by the deadline.
- ② - Helps the team define and adhere to its own process for making sure that the work gets done.
- ③ - Decides on what tasks the team should do or how to do them.
- ④ - Ensures that the team follows the agreed processes in the scrum framework.
- ⑤ - Facilitates key sessions and encourages the team to improve.
- ⑥ - The role can be known as a team facilitator or a servant-leader.

12. Which of the above statements is/are responsibilities of a Scrum Master?

- (a) ② and ④ only.
- (b) ①, ② and ③ only.
- (c) ①, ③ and ⑤ only.
- (d) ④ and ⑥ only.
- (e) ②, ④, ⑤ and ⑥ only.

13. Which of the above statements is/are responsibilities of a traditional project manager?

- (a) ① and ③ only.
- (b) ② and ④ only.
- (c) ② and ⑤ only.
- (d) ④, ⑤ and ⑥ only.
- (e) ①, ③ and ⑥ only.

14. If the Scrum Development Team finds an unclear requirement during a sprint planning meeting, whom should they immediately contact?

- (a) End user of the product
- (b) Most experienced developer of the development team.
- (c) Product owner
- (d) Scrum master
- (e) The development team could make an assumption without contacting anyone.

15. What is/are the responsibilities of a *Product Owner*?

- (a) Act as a servant leader.
- (b) Collaborate with the development team.
- (c) Collaborate with the stakeholders
- (d) Must be self-organizing.
- (e) Protect the development team from outside interference.

16. Which of the following statements is/are **correct** in relation to *release planning*?
- (a) Only the scrum master and the product owner are involved in release planning.
 - (b) A one-time event that only occurs at the very beginning of the project.
 - (c) Product backlog grooming is one of the activities in release planning.
 - (d) Release planning is a short-term planning activity in Scrum.
 - (e) The only input for the release planning is the high-level product backlog.
17. Which of the following statements is/are **correct** regarding the *Fixed Date Release* project type?
- i. The scope should be flexible and the date and budget should be fixed.
 - ii. The scope, date, and budget should be fixed.
 - iii. Traditional burn-down and burn-up charts are very effective in communicating project progress in fixed-date release projects
- (a) i only
 - (b) ii only
 - (c) iii only
 - (d) ii and iii only
 - (e) i, ii and iii
18. Which of the following statement(s) is/are **correct** regarding *Scrum Planning principles*?
- (a) Scrum planning encourages the production of all planning artifacts right at the beginning of a project.
 - (b) Scrum teams do not do any up-front planning.
 - (c) Scrum requires both up-front and just-in-time planning.
 - (d) Scrum favors larger releases over smaller, more frequent releases.
 - (e) Scrum teams do not do any sort of planning.
19. Which of the following levels of planning in *Multilevel Planning* is/are formally defined in Scrum?
- (a) Portfolio Planning
 - (b) Daily Planning
 - (c) Release Planning
 - (d) Product Planning
 - (e) Sprint Planning
20. What is/are the most detailed level of planning in *Multilevel planning*?
- (a) Portfolio Planning
 - (b) Daily Planning
 - (c) Release Planning
 - (d) Product Planning
 - (e) Sprint Planning

21. What is/are the output(s) of *Portfolio Planning*?

- (a) Burn down chart
- (b) Product backlog
- (c) Portfolio backlog
- (d) Sprint backlog
- (e) Release plan

22. Which of these is/are the inputs to *Sprint Planning*?

- (a) Team velocity
- (b) Sprint backlog
- (c) Product backlog
- (d) Daily scrum
- (e) Sprint goal

23. Which of these is/are the responsibilities of a *Scrum Master* in *Sprint Planning*?

- (a) Acts as the Scrum team coach
- (b) Determines what can be delivered after the sprint
- (c) Shares the initial sprint goal
- (d) Asks questions and facilitate the meeting
- (e) Presents the prioritized product backlog

24. Which of the following statements is/are **correct** regarding the *Daily Scrum*?

- i. Is also known as Daily stand-up
- ii. Usually a 15-minute time-boxed activity
- iii. Happens only at the very beginning of the sprint and at the very end of the sprint.

- (a) i only
- (b) ii only
- (c) i and ii only
- (d) ii and iii only
- (e) i, ii and iii

25. Which of the following statements is/are **correct** regarding the *Sprint review*?

- (a) External stakeholders should not take part in Sprint reviews.
- (b) Sprint review happens at daily scrum meetings.
- (c) Sprint review happens at the end of a sprint after the Sprint Retrospective.
- (d) An output of sprint review is the sprint backlog.
- (e) A demonstration of the increment usually happens in a sprint review.

26. Which of the following statements is/are **correct** regarding the *Sprint retrospective*?

- i. It is one of the most important and least appreciated practices in the Scrum framework.
- ii. The full Scrum team should take part in the Sprint Retrospective.
- iii. An output of Sprint Retrospective can be the improved trust and friendship among Scrum team members.

- (a) i only
- (b) ii only
- (c) i and iii only
- (d) ii and iii only
- (e) i, ii and iii

27. Which of the following statements is/are **correct** regarding *Extreme Programming(XP)*?

- (a) XP eliminates the need to do any analysis, design, and testing.
- (b) An XP team may only produce a deployable software at the end of a project.
- (c) Works in iterations: week-long (1-3 weeks) increments of work.
- (d) Programmers do not share ownership of the code.
- (e) Requires a high amount of up-front planning and formal documentation at the beginning of each iteration.

28. Match the given *Extreme Programming(XP)* team roles with the most relevant responsibility from the given responsibilities set.

XP team roles	Responsibilities
Ⓐ- On-site customer	①- Maintain and promote the product vision.
Ⓑ- Product owner	②- Understanding users, their needs, and how they will interact with the product.
Ⓒ- Programmer coach	③- Define the software the team builds.
Ⓓ- Interaction designer	④- Help programmers with XP's technical practices.

- (a) Ⓐ→①, Ⓑ→②, Ⓒ→③, Ⓓ→④
- (b) Ⓐ→②, Ⓑ→①, Ⓒ→④, Ⓓ→③
- (c) Ⓐ→③, Ⓑ→①, Ⓒ→④, Ⓓ→②
- (d) Ⓐ→③, Ⓑ→④, Ⓒ→②, Ⓓ→①
- (e) Ⓐ→②, Ⓑ→①, Ⓒ→③, Ⓓ→②

29. Which of the following statements is/are **correct** regarding *Pair Programming*?
- i. The roles in pair programming are known as *driver* and *navigator*.
 - ii. It is ideal to have the same pairs until the project is complete.
 - iii. It is common for teams to have standardized toolsets and coding standards.

- (a) i only
- (b) ii only
- (c) i and iii only
- (d) ii and iii only
- (e) i, ii and iii

30. Who holds the final responsibility for the product direction in *pair programming*?

- (a) On-site customer
- (b) Product manager
- (c) Domain expert
- (d) Programming coach
- (e) Quality Assurance Engineer
