

1. True / False Questions (30 pts)

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- 1) Ideal days are intuitive to understand, but harder to estimate.
~~True~~ **False**
- 2) As time goes on, legacy software may become faulty. Therefore, software can also wear out.
~~True~~ **False**
- 3) For Scrum, product backlog is arranged in an order that large items are at the top and small items are at the bottom.
~~True~~ **False**
- 4) The spiral model is a realistic approach to the development of large-scale systems and software.
~~True~~ **False**
- 5) In agile development, the team harmony and unity are important. Even the mavericks should be included.
~~True~~ **False**
- 6) The Unified Process phases always proceed in a sequence.
~~True~~ **False**
- 7) In agile software development, the team favors working software over the comprehensive documentation.
~~True~~ **False**
- 8) Code refactoring attempts to make the components more tightly coupled.
~~True~~ **False**
- 9) Documentation is a part of software.
~~True~~ **False**
- 10) Planning Poker is an effective approach used in agile planning and estimate.
~~True~~ **False**
- 11) It is possible for a use case to have no actors.
~~True~~ **False**
- 12) A software process is a road map that helps you create a timely, high- quality result.
~~True~~ **False**
- 13) As an important Agile process, Scrum welcomes any changes to be made during a sprint.
~~True~~ **False**
- 14) Work Breakdown Structure (WBS) will achieve the best results if you use two different approaches in combination, e.g., functional approach and product component, to organize and present your software project management plan (SPMP).
~~True~~ **False**
- 15) In Agile Estimation and Planning, relative estimate rewards team members for solving problems based on difficulty, not time spent.
~~True~~ **False**
- 16) A good way to develop WBS is brainstorming, i.e., the top down approach.
~~True~~ **False**
- 17) Compared to document analysis, JAD is a better requirement elicitation approach digging out in-depth information.
~~True~~ **False**

- 18) Meeting minutes should be released shortly after the meeting for review by the meeting participants.
~~True~~ **False**
- 19) Like other process models, the spiral model ends when software is delivered.
~~True~~ **False**
- 20) In Agile Estimation and Planning, effort and duration have the same meaning and can be used interchangeably.
~~True~~ **False**

2. Multi-choice Questions (40 pts)

- 21) As time goes on, the failure rate of software increases with spikes. The primary reason is
 - a. Wear out
 - b. Cost
 - c. Side effects of changes
 - d. Economy
- 22) An agile process is driven by
 - a. Customer descriptions of what is required (scenarios)
 - b. Monetary incentives
 - c. Self-motivation and self-discipline
 - d. The development of technologies
 - e. More explicit testing
- 23) What is the process flow where each process is followed by a single process and the last process gives a result and loops back to the first process?
 - a. Iterative process flow
 - b. Linear process flow
 - c. Parallel process flow
 - d. Evolutionary process flow
 - e. None of the above
- 24) Who estimates the effort to complete a product backlog item?
 - a. The Scrum development team after clarifying requirements
 - b. The most experienced people in the organization
 - c. The product owner, with the input from the Scrum development team
 - d. The Scrum master, with the input from the Scrum development team
- 25) During Sprint Execution, when are new Sprint tasks added?
 - a. When the Product Owner identifies a new task
 - b. Never. The Sprint tasks are fixed and decided during the Sprint planning
 - c. When the Scrum Master identifies a new task
 - d. As soon as possible after they are identified, unless they reflect a scope change in the Sprint goals or committed product backlog items
 - e. When Scrum Master approves them
- 26) When modeling requirements, if a function in the original problem statement is too complex, we can
 - a. Use <<extend>> to present additional information
 - b. Use <<include>> for functional decomposition

- 27) Which of the following scenarios makes the traditional Waterfall an appropriate choice?
 - a. To develop a compiler for ANSI C language
 - b. To develop a shopping system to accommodate the COVID-19 requirements
 - c. To develop a payroll system for startup companies
 - d. To develop a management information system for a fast-paced business area

- 28) Objects can be classified into
 - a. Actor, Class, and Instance
 - b. Object Modeling, Dynamic Modeling, and Functional Modeling
 - c. Entity, Model, and View
 - d. Entity, Control, and Boundary

- 29) Ralph wants to illustrate how a system interacts with the environment. The best solution for him would be to use a(n)
 - a. Requirements flow chart
 - b. Storyboard
 - c. HIPO chart (hierarchy, input, process, output)
 - d. Use case
 - e. Gantt chart

- 30) What is velocity in Agile planning and estimate?
 - a. Units of work implemented per iteration (or sprint)
 - b. Units of work implemented per release
 - c. Number of user stories implemented per iteration (or sprint)
 - d. Number of user stories implemented per release

- 31) Which is true about lag time in project management?
 - a. Lead time is also called positive lag time
 - b. Lag time moves the second task forward in time so that the tasks are further separated
 - c. Lag time moves the second task backward in time so that the two tasks overlap
 - d. Lag time is also called positive lead time

- 32) During requirement elicitation, different people can provide conflicting information. Combining this information and attempting to resolve differences in opinions or facts is usually very time consuming. Which of the following is the best choice for the integration of information?
 - a. Interview
 - b. Questionnaire
 - c. JAD
 - d. Document analysis
 - e. Observation

- 33) The agile principle of "Deliver working software frequently" helps with which of the following challenges of predictive model?
 - a. It helps eliminate changes
 - b. It helps improve team's coherence

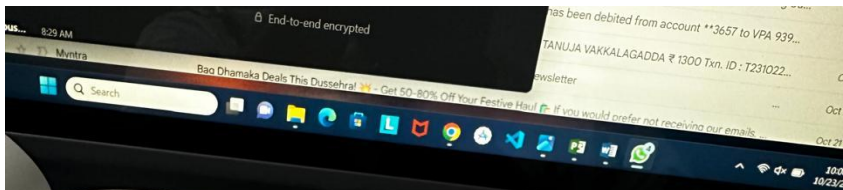
- 34) The smallest amount of work tracked in project management is
 - a. WBS
 - b. Activity
 - c. Task
 - d. All of the above
 - e. None of the above
- 35) Besides facilitator and minutes taker, the third role in a team meeting is
 - a. Time keeper
 - b. Technical lead
 - c. Project manager
 - d. QA
- 36) Code refactoring refers to?
 - a. Improve coupling
 - b. Decrease cohesion
 - c. Improving the design of existing code without changing what it does
 - d. Make fundamental changes to GUI
 - e. Test driven development

- 37) The correctness of requirements specification should represent
 - a. The company's view
 - b. The manager's view
 - c. The customer's view
 - d. The developer's view

- 38) After refactoring a piece of code, we should
 - a. Proceed to the next refactoring
 - b. Review the changes for the purpose of fault avoidance
 - c. Re-run the test case related to the piece of code
 - d. Re-run all the test cases

- 39) The purpose of daily Scrum meeting is to
 - a. Address technical challenges
 - b. Address managerial issues
 - c. Address maintenance issues
 - d. Identify possible issues that may prevent the project from moving forward

- 40) Which Agile Value does the following principle align with: "Build projects around motivated individuals, give them the environment a they need and trust them to get the job done."
 - a. Responding to change over following a plan
 - b. Customer collaboration over contract negotiation
 - c. Individuals and interactions over processes and tools
 - d. Working software over comprehensive documentation



3. Short Response Questions (20 pts)

- 1) Please list five possible stakeholders in a project? (5pts)
- ① Senior Manager
 - ② Project [technical] manager
 - ③ Practitioners
 - ④ Customers
 - ⑤ End-users

2) Please develop CRC cards for Modern Home Automation based on the following problem statement:

- Imagine stepping into a contemporary household designed for the future. As you walk in:
- You notice that the house maintains a cozy atmosphere, adjusting its internal conditions according to the weather outside and the preferences of the inhabitants.
 - The room's ambiance can be altered with ease. A simple command can dim the lights for a movie night or change the hue to match the mood of a gathering.
 - To interact with all these sophisticated features, residents use a digital interface, be it on their smartphones or through a computer. This interface acts as a command center, bridging their desires with the automated functionalities of their home.

Given the scenario above, identify key components of this modern household. Create CRC cards detailing the responsibilities and collaborations for each identified component.

Class House

Responsibilities:-

- adjust atmosphere
- maintain atmosphere
- Identify room temp
- get commands

Collaboration:-

Rooms with residents association

Class Rooms

Responsibilities:-

- dim the
- change
- check
- get

Collaborations:-