

## Quizzes

1. Which of the following is an Agile Manifesto value?
  - A. Individuals and interactions over contract negotiation
  - B. Working software over comprehensive documentation
  - C. Customer collaboration over processes and tools
  - D. Working solutions over comprehensive documentation
  
2. What is valued more than Processes and Tools?
  - A. Individuals and interactions
  - B. Working software
  - C. Customer collaboration
  - D. Responding to change
  
3. Which of the following Agile Manifesto values deals most closely with WIP (Work in Progress)?
  - A. Individuals and interactions over processes and tools
  - B. Working software over comprehensive documentation
  - C. Customer collaboration over contract negotiation
  - D. Responding to change over following a plan
  
4. Which Agile Manifesto value is concerned with team empowerment?
  - A. Individuals and interactions over processes and tools
  - B. Working software over comprehensive documentation
  - C. Customer collaboration over contract negotiation
  - D. Responding to change over following a plan
  
5. Which Agile principle targets to satisfy a customer with great software?
  - A. Working software over comprehensive documentation.
  - B. Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.
  - C. Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.
  - D. Working software is the primary measure of progress.

6. How do we achieve motivated people on the team?
  - A. Business people and developers must work together daily throughout the project.
  - B. Build projects around motivated individuals. Give them the environment and support they need and trust them to get the job done.
  - C. The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.
  - D. Individuals and interactions over processes and tools.
7. Which of the following is not a value stated in the Agile Manifesto?
  - A. Individuals and interactions over processes and tools
  - B. Working software over comprehensive documentation
  - C. Customer communication over contract negotiation
  - D. Responding to change over following a plan
8. What is the Agile term for the technique of creating a group of rules that govern how team members interact?
  - A. Standard Operating Procedures
  - B. Teaming Agreements
  - C. Working Agreements
  - D. Rules of Engagement
9. In what year was the Declaration of Interdependence (DOI) published?
  - A. 1974
  - B. 1990
  - C. 2001
  - D. 2005
10. Spot the Agile Manifesto value from the following choices:
  - A. Individuals and processes over interactions and tools
  - B. Interactions and processes over individuals and tools
  - C. Individuals and interactions over processes and tools
  - D. Individuals and tools over processes and interactions
11. Agile Manifesto values \_\_\_\_\_
  - A. Well-crafted software over comprehensive documentation
  - B. Working software over comprehensive documentation
  - C. Working software with as little documentation as possible
  - D. Working solution without documentation

12. Which of the following is an Agile Manifesto value?
  - A. Creating a plan over following a plan
  - B. Following a plan over constant changes
  - C. Responding to change over following a plan
  - D. Steadily adding value over responding to change
13. Timeboxed means?
  - A. Working with teams in a box.
  - B. Working with a fixed time schedule for planned activities.
  - C. Adjust the time to complete as many as possible activities.
  - D. Allow flexibility of scope after an agreed sprint goal.
14. Which of the following Agile principle shows “Architecture and design emerge from a collaboration between teams”?
  - A. The best architectures, requirements and designs emerge from self-organizing teams.
  - B. Business people and developers must work together daily throughout the project.
  - C. Build projects around motivated individuals. Give them the environment and support they need and trust them to get the job done.
  - D. Continuous attention to technical excellence and good design enhances agility.
15. According to the manifesto, communications are best managed through:
  - A. Daily Stand-Up meetings
  - B. Face-to-face communications
  - C. Video conferencing
  - D. Documentation stored on SharePoint
16. Which of the following is an Agile principle per the Agile Manifesto?
  - A. Delivering incremental change
  - B. Ensuring that business people and developers work together
  - C. Ensuring that business people and developers hold daily retrospective meetings
  - D. Delivering comprehensive documentation

17. Agile Project Management:

- A. is an execution-biased model
- B. is a planning-and-control-biased model
- C. is a planning-biased model
- D. is a planning-and-execution-biased model

18. What happens if the development team cannot complete its work within its timebox?

- A. The timebox is adjusted permanently to reflect reality
- B. The timebox is extended temporarily.
- C. The iteration should be abandoned.
- D. The timebox is unchanged, but the unfinished work is carried forward to the backlog.

19. Which of the following is an Agile principle as per the Agile Manifesto?

- A. Defect reduction
- B. Simplicity
- C. Test-driven development
- D. Removing waste

20. The Agile Manifesto was created at a meeting at:

- A. A rugby match, February 2001
- B. A ski resort in Europe, February 2001
- C. A ski resort in Snowbird, Utah, USA, February 2001
- D. A ski resort in Snowbird, Utah, February 2000

## Answers

1. B
2. A
3. B
4. A
5. B
6. B
7. C
8. C - Working Agreements refer to the standards and rules that each Agile team abides by to work together during the course of the project.
9. D - The Declaration of Interdependence was published 4 years after the Agile Manifesto in 2005 by a group of Agile practitioners to help implement guidelines set forth in the Agile Manifesto.
10. C
11. B
12. C
13. B
14. A
15. B
16. B
17. A
18. D
19. B
20. C

## Quizzes

1. What are the core values in Extreme Programming (XP):
  - A. Simplicity, communication, respect
  - B. Simplicity, controlling, feedback
  - C. Simplicity, controlling, respect
  - D. Solution, communication, respect
2. The three Scrum pillars are:
  - A. Transparency, Inspection, feedback
  - B. Transparency, adaptation, progress
  - C. Check, Feedback Progress
  - D. Transparency, Inspection, adaptation
3. What are the three questions discussed or asked in Daily Scrum meetings?
  - A. What has been achieved since the last meeting? What will be done before the next meeting? What obstacles are in the way?
  - B. What has been started since the last meeting? What might get done before the next meeting? What obstacles are in the way?
  - C. What has been started since the last meeting? What will be done before the next meeting? What obstacles are in the way?
  - D. What has been achieved since the last meeting? What might get done before the next meeting? What obstacles are in the way?
4. Name the backlogs available in Scrum.
  - A. Product backlog, iteration backlog
  - B. Project backlog, iteration backlog
  - C. Project backlog, sprint backlog
  - D. Product backlog, sprint backlog
5. In Scrum, Definition of Done is NOT created by
  - A. Scrum Master
  - B. Product Owner
  - C. Process Owner
  - D. Development Team

6. Which of these are core practices in XP?
  - A. Whole team, planning games, small releases
  - B. One team, process game, small releases
  - C. Whole team, planning games, quick releases
  - D. One team, process game, quick releases
7. Lean principles:
  - A. Eliminate waste, empower the team, build quality in, deter decisions, amplify learning
  - B. Eliminate waste, empower the team, build quality in, deter decision, minimize learning
  - C. Eliminate waste, empower the team, build quality in, defer decisions, amplify learning
  - D. Eliminate waste, empower the team, build quality in, defer decisions, optimize learning
8. Which of the following are some of the planned opportunities for inspection and adaptation in the Scrum method?
  - A. Sprint retrospective, velocity review meeting, daily Scrum meeting
  - B. Sprint planning meeting, sprint retrospective, sprint risk meeting
  - C. Sprint retrospective, daily Scrum meeting, sprint review meeting
  - D. Sprint planning meeting, daily Scrum meeting, retrospective planning meeting
9. In Kanban, WIP stands for:
  - A. Waste in progress
  - B. Work in progress
  - C. Waste in process
  - D. Work is progressing
10. The core principles in Kanban are:
  - A. Minimize the workflow, pull flow, make process policies explicit, improve collaboratively
  - B. Visualize the workflow, manage flow, make process policies explicit, improve collaboratively
  - C. Minimize the workflow, manage flow, make process policies explicit, improve collaboratively
  - D. Visualize the workflow, pull flow, make process policies explicit, improve collaboratively

11. What does the word ‘timeboxed’ mean in the context of Agile?
  - A. Fast
  - B. Flexible
  - C. Frequent
  - D. Fixed
12. Which of these is NOT an Agile methodology?
  - A. Extreme programming (XP)
  - B. Scrum
  - C. Crystal clear
  - D. PMBOK<sup>®</sup>
13. A person who makes decision and practices Scrum to the core is performing what role?
  - A. Pig
  - B. Chicken
  - C. Scrum master
  - D. Scrum team
14. The MoSCoW prioritization technique is originated from which Agile technique?
  - A. DSDM
  - B. Feature-driven development (FDD)
  - C. Scrum
  - D. Extreme programming (XP)
15. Who determines how much of the product backlog can be delivered in the upcoming sprint?
  - A. Product Manager
  - B. Team
  - C. Scrum Master
  - D. Project Owner
16. Which of these method/practices demands a sustained level of customer interaction throughout the project and so has the role of an ‘on-site customer’:
  - A. Waterfall method
  - B. Agile project management
  - C. Extreme programming
  - D. Kanban

17. In the Kanban model, how do WIP limits help?
  - A. Tracking becomes easy
  - B. Prevents work piling up of tasks at the bottleneck
  - C. Limits the size of product backlog
  - D. Helps developers to choose tasks easily
18. The idea of timeboxing in Agile is to:
  - A. Save effort and money
  - B. Effectively prioritize work and provide incremental result
  - C. Develop a mechanism to increase project scope
  - D. Prevent schedule overruns
19. Which of these incorrectly describes a servant leader?
  - A. Are stewards of their organization's human, financial and physical resources
  - B. Participatory management style
  - C. Have a natural feeling to lead first
  - D. Focus on the needs of their colleagues and those they serve
20. In XP, frequent verification and validation is ensured through:
  - A. Code reviews
  - B. Pair programming
  - C. Simplicity
  - D. Automated test suite
21. During which meeting do team members synchronize their work and progress and report any impediments to the Scrum Master for removal?
  - A. Brainstorming meeting
  - B. Status Meeting
  - C. Daily Scrum
  - D. Sprint Retrospective
22. In an XP team, what is expected from the Project Manager?
  - A. Help team work with the rest of the organization
  - B. XP does not have a project manager role
  - C. Provide domain expertise to team
  - D. Responsible for defining the software

23. At what point of the project is the product backlog frozen and disallows any further changes?
  - A. Before the project execution starts
  - B. After we are done with the first few sprints and the review has happened
  - C. It is never frozen
  - D. Once the estimation and planning is done
24. A list of activities that is expected to be completed successfully by the end of a sprint is called:
  - A. Sprint checklist
  - B. Quality metrics
  - C. Definition of Ready
  - D. Definition of Done

## Answers

1. A – XP core values are Communication, Simplicity, Feedback, Courage and Respect. Solution, controlling are made-up terms.
2. D
3. A
4. D
5. C – There is no such role as process owner.
6. A
7. C
8. C
9. B
10. B
11. D – Timeboxed term in Agile refers to completing work in a fixed and agreed time. If work is not completed in the timebox, it is returned to the backlog to be considered for a later timebox.
12. D
13. D – Scrum Team is owning the work and empowered to make decisions using Scrum practices.
14. A
15. B
16. C
17. B – WIP manages workflow, too many in-progress tasks can create bottleneck and delay others.
18. B – Timeboxing is the mechanism of working toward a short deadline with a specific goal and a defined budget.
19. C
20. D
21. C
22. A – A project manager in an XP team ensures that the team works well with the rest of the organization. A PM is more focused in managing external stakeholders.
23. C
24. D

## Quizzes

1. All of the following are part of an Agile charter, EXCEPT
  - A. Project objective
  - B. Precise estimates
  - C. Who all will be involved or impacted on the project
  - D. Project approach - how the project will be carried out
  
2. An executive wants help evaluating a proposed three-year project against two proposed one-year projects. Which economic model would be most helpful?
  - A. NPV
  - B. ROI
  - C. MMF
  - D. Velocity
  
3. In the Kano Model, features that provide great satisfaction are called differentiators or
  - A. Threshold
  - B. Linear
  - C. Exciters or Delighters
  - D. Neutral
  
4. A team member is looking at a chart that plots risk exposures over iterations. The graph is showing a downward trend. This chart is called \_\_\_\_\_
  - A. Risk Burnup Chart
  - B. Risk Census
  - C. Risk Burndown Chart
  - D. Linear Chart
  
5. Calculate the Cost Performance Index when earned value and actual costs are respectively \$5000 and actual costs are \$4500?
  - A. 1.11
  - B. 0.9
  - C. 500\$
  - D. -500\$

6. What change do you observe on the release burndown chart once the team delivers 50 story points in an iteration?
  - A. The top of the bar graph will move 50 points up
  - B. The top of the bar graph will move 50 points down
  - C. The bottom of the bar graph will move 50 points down (perhaps below the X-axis)
  - D. The bottom of the bar graph will be raised by 50 points (perhaps above the X-axis)
7. What change do you observe on the release burndown chart once there is a reduction in scope by 50 story points in an iteration?
  - A. The top of the bar graph will move 50 points up
  - B. The top of the bar graph will move 50 points down
  - C. The bottom of the bar graph will move 50 points down (perhaps below the X-axis)
  - D. The bottom of the bar graph will be raised by 50 points (perhaps above the X-axis)
8. What change do you observe on the release burndown chart once the team realizes that they have underestimated and 50 story points should be added in an iteration?
  - A. The top of the bar graph will move 50 points up
  - B. The top of the bar graph will move 50 points down
  - C. The bottom of the bar graph will move 50 points down (perhaps below the X-axis)
  - D. The bottom of the bar graph will be raised by 50 points (perhaps above the X-axis)
9. Which of the following is the BEST estimation scale for use with estimating large units of work?
  - A. Linear series like 1, 2, 3, 4, 5, 6, 7, 8
  - B. Fibonacci series like 1, 2, 3, 5, 8, 13, 21
  - C. Story points
  - D. Boolean numbers 0 and 1
10. Which of the following is true about items in the Product Backlog?
  - A. Higher-priority items are simply stated while lower-priority ones are detailed out
  - B. Higher-priority items are described in more detail than lower-priority ones
  - C. The lower the priority, the more the detail
  - D. None of the above

11. What do we call the average time between deliveries of completed work items?
  - A. Cycle Time
  - B. Velocity
  - C. Burndown charts
  - D. Burnup charts
  
12. A schedule risk has a 20% probability and the impact could be a delay of 10 days. What is the EMV?
  - A. 2
  - B. 200
  - C. 10
  - D. 0.2
  
13. Which is the recommended project to choose?  
Project A has IRR: 2%, Project B has IRR -4%, Project C has IRR 2.2% and Project D has IRR 3%
  - A. Project A
  - B. Project B
  - C. Project C
  - D. Project D
  
14. Which is the recommended project to choose?  
Project A having NPV: \$1200, Project B has NPV: \$15000, Project C has NPV: \$4000, Project D has NPV: \$3000
  - A. Project A
  - B. Project B
  - C. Project C
  - D. Project D
  
15. In the context of project selection based on payback period computation, discounting means?
  - A. Providing discounts on the price of the product
  - B. Negotiation technique during contract management
  - C. Either A or B
  - D. Mapping future amounts back to their present value using a rate of interest

16. Which of the following has the highest precedence when choosing stories out of a product backlog?
  - A. High Risk High Value stories
  - B. High Risk Low Value stories
  - C. Low Risk High Value stories
  - D. Low Risk Low Value stories
17. Which of the following are NOT true about risk adjusted backlog?
  - A. Both functional requirements and risks are enlisted in one backlog.
  - B. It is only the product owner who needs to maintain and refer to the risk adjusted backlog during planning and prioritization.
  - C. Like features and their priorities are subject to change, so are the probability and impacts of risks. New risks might also crop up and existing ones may become irrelevant. So the risk adjusted backlog must be constantly reviewed and kept up to date.
  - D. The whole team needs to contribute to risk identification, analysis, mitigation actions for risks in the risk adjusted backlog.
18. Which tool do we use for tracking and forecasting Agile projects?
  - A. Cumulative Flow Diagrams
  - B. Burnup charts
  - C. Burndown charts
  - D. Graph Charts
19. The acronym DEEP is used to depict the characteristic of the product backlog. DEEP means:
  - A. Demonstrable, estimable, emergent, prioritized.
  - B. Detailed, estimable, emergent, primary.
  - C. Detailed, estimable, emergent, prioritized.
  - D. Done, estimable, emergent, primary.
20. Which of the following chart shows the total scope requested in a project?
  - A. Burnup charts
  - B. Burndown charts
  - C. Task board
  - D. Iteration Graph

21. Which of the following statements does not sound right?
  - A. The metric of Takt time helps to gauge current productivity of the delivery process against customer demand.
  - B. Parking Lot chart is also a powerful method of visual representation of a team's progress toward completing the tasks for a release.
  - C. Earned value management technique can be applied to traditional projects, but not to Agile projects since there is no baseline to measure against.
  - D. A Kanban board is used to visualize the work in progress for an Agile team.
22. In the MoSCoW model of prioritization, what does M and C stand for?
  - A. Must-have, couldn't-have
  - B. Mandatory, could-have
  - C. Must-have, could-have
  - D. None of the above
23. In Lean, the steps to use a value stream maps is as follows:
  - A. Identify product to analyze, repeat and pursue perfection, identify steps and map value stream, eliminate waste, develop a plan to reach future state from current state.
  - B. Eliminate waste, Identify product to analyze, identify steps and map value stream, develop a plan to reach future state from current state, repeat and pursue perfection.
  - C. Identify steps and map value stream, identify product to analyze, eliminate waste, develop a plan to reach future state from current state, repeat and pursue perfection.
  - D. Identify product to analyze, identify steps and map value stream, eliminate waste, develop a plan to reach future state from current state, repeat and pursue perfection.
24. A project manager is using Earned Value Analysis to inspect the health of a year-long project. At the middle of the project, she determines that PV is \$25K, EV is \$20K and AC is \$30K. What can be determined from these figures?
  - A. The project is behind schedule and over budget.
  - B. The project is ahead of schedule and under budget.
  - C. The project is ahead of schedule and over budget.
  - D. The project is behind schedule and under budget.

## Answers

1. B – Due to uncertainty in Agile projects, it is least likely to have a precise estimate in Agile charter.
2. A – Net present value, as it converts multiyear returns on investment to a value in today's terms.
3. B – Exciters (delighters) are those features that provide great satisfaction, often attracting a premium price to a product.
4. C
5. A – CPI = EV/AC = 5000/4000 = 1.11
6. B
7. D
8. A
9. B – Using nonlinear sequences is a better approach.
10. B – Higher-priority items are described in more detail than lower-priority ones.
11. A – Cycle Time is the average time between deliveries of completed work items.
12. A
13. D – Choose the Project D with the highest IRR.
14. B – Choose the Project B with the highest NPV.
15. D – Discounting is the process of mapping the future amounts back to their present values.
16. A
17. B
18. A – Cumulative Flow diagrams are a tool for tracking and forecasting Agile projects.
19. C
20. A – The Burnup chart shows both scope completed and total scope in the project.
21. C
22. C
23. D
24. A – The project is behind schedule and over budget as both SV (= EV – PV) and CV (= EV – AC) are negative.

## Quizzes

1. One of the critical activities in Stakeholder Management is to identify them. When should the team identify stakeholders?
  - A. When the project begins
  - B. At the time of release planning since their inputs are necessary
  - C. During sprint execution
  - D. Throughout the project
2. Which of these would you identify as a stakeholder?
  - A. PMO
  - B. Sponsor
  - C. Architect
  - D. All of the above
3. A Wireframe is
  - A. A group-estimating technique.
  - B. A frame where a Kanban board is displayed.
  - C. A rough prototype of the final software.
  - D. A technique for wiring the team with a common collaborative culture.
4. Which of the following communication methods have the highest 'temperature' and are preferred in Agile teams?
  - A. E-mail
  - B. Letter
  - C. Face to face
  - D. Memo
5. Referring to the graph on effectiveness and richness of communication mode, which of the following statements are true?
  - A. E-mail communication has the highest efficiency and highest richness.
  - B. Face-to-face communication has the highest efficiency and highest richness.
  - C. Written documentation has the highest efficiency and highest richness.
  - D. Audio conference has the highest efficiency and highest richness.

6. Richard and Ben seem to be in conflict. While sitting around with the team, you overhear statements like “the code is always full of defects and that slows down everybody.” What level of conflict does the team have?
  - A. Level 2 - Disagreement
  - B. Level 3 - Contest
  - C. Level 4 - Crusade
  - D. Level 5 - World War
7. Display of the Kanban board, release plan and the cumulative burnup and burndown chart that is updated very frequently and situated at a central place is an example of:
  - A. Information distribution or dissemination
  - B. Daily status reporting
  - C. Information refrigerators
  - D. Information radiators
8. Wireframes and prototypes help teams to:
  - A. Test high- and low-level design
  - B. Confirm design
  - C. Report design completion
  - D. Estimate the project
9. Velocity is used for all except
  - A. Team’s work capacity
  - B. Release plan validation
  - C. Estimating work per iteration
  - D. Maintaining list of features
10. On the project release plan a small change is requested, but the team members get into an endless debate. Which of the following techniques could prove to be helpful in this context?
  - A. Wideband Delphi
  - B. Fist-of-Five voting
  - C. Pareto Analysis
  - D. Retrospective

11. You are leading a distributed team spread across continents and different time zones. What is the best communication method to use?
  - A. Set up a web page where all team members can post their photos to see each other.
  - B. Set up kickoff meetings and let everyone to meet face to face.
  - C. Set up common working hours, so everyone can work at the same time from their location and interact better.
  - D. Set up a document repository where all team members need to upload hourly statuses at least once a day.
12. Leadership and management are related as:
  - A. Leadership overrides management.
  - B. Management overrides leadership.
  - C. Management and leadership both work together.
  - D. Management and leadership are mutually exclusive.
13. During a voting exercise, a participant shows thumbs-sideways. This means:
  - A. They are for the motion.
  - B. They are against the motion.
  - C. They are neutral.
  - D. They don't like this voting method and would like to leave soon.
14. The role of a servant leader is to
  - A. Line manage the team members.
  - B. Remove impediments to progress.
  - C. Penalize anyone who violates the policies.
  - D. Estimate and come up with the release plan.
15. Which of the following is a valid list of the quadrants of Emotional Intelligence?
  - A. Self, others, recognize, optimize
  - B. Self, team, recognize, optimize
  - C. Self, team, regulate, recognize
  - D. Self, others, regulate, recognize

16. Which of the following is not a decision-making style?
  - A. Forcing
  - B. Pleading
  - C. Consensus
  - D. Consultative
17. In Fist-of-five voting technique, showing 5 fingers or full palm means:
  - A. Participant has a question or clarification.
  - B. Participant is in full agreement.
  - C. Participant is in disagreement and wants to discuss issues and suggest changes that should be made.
  - D. Participant is in partial agreement and has minor issues that may or may not need discussion.
18. Which of the following is not an information radiator?
  - A. Kanban board
  - B. Burndown chart
  - C. Status report
  - D. Story Board
19. While listening to a speaker at a session, you start asking yourself whether the product will be useful to the business. What level of Active Listening is this?
  - A. Level 1 Internal
  - B. Level 2 Focused
  - C. Level 3 Global
  - D. None of the above
20. While listening to a speaker, you are not only focused on words and emotion but notice the energy level and intent of the speaker. This level of listening is:
  - A. Global listening
  - B. Focused listening
  - C. Internal listening
  - D. None of the above.

## Answer

1. D
2. D
3. C
4. C
5. B
6. B
7. D
8. B
9. D
10. B
11. B
12. C
13. C
14. B
15. D
16. B
17. B
18. C
19. A
20. A

## Quizzes

1. What is the optimal team size on Agile projects?
  - A.  $4 \pm 3$
  - B.  $7 \pm 2$
  - C.  $9 \pm 1$
  - D. It could be any arbitrary number based on the duration of the project
2. In Shu-Ha-Ri, Shu means to:
  - A. Detach
  - B. Transcend
  - C. Learn
  - D. Attach
3. What are the correct stages for team building?
  - A. Forming, Storming, Norming, Performing, Adjourning
  - B. Forming, Norming, Storming, Performing, Mourning
  - C. Forming, Mourning, Norming, Storming, Performing
  - D. Forming, Storming, Adjourning, Performing, Norming
4. In \_\_\_\_\_ stage of formation and development, team members begin to work and most likely to have conflicts.
  - A. Performing
  - B. Storming
  - C. Arguing
  - D. Forming
5. In situational leadership models, at which stage do teams require high directive and high support:
  - A. Forming
  - B. Coaching
  - C. Supporting
  - D. Storming

6. All are characteristics of a self-organized team except:
  - A. Constructive disagreement
  - B. Empowered
  - C. Trust
  - D. Follow command-and-control regime
7. In a distributed team, which is the most effective tool to use for communication between team members?
  - A. E-Mail
  - B. Video conference
  - C. Wiki / intranet
  - D. Audio conference
8. In Agile, the PMO helps in \_\_\_\_\_
  - A. Status report collation
  - B. Vendor management
  - C. Facilitating training, coaching and maintaining a center of excellence
  - D. All of the above
9. How many communication channels will be there when you have 10 team members on-board?
  - A. 15
  - B. 25
  - C. 35
  - D. 45
10. A developer is asking his peer whether it is okay to get his new code deployed at 4 p.m. on the system testing environment. Another developer overhears this and reminds him that another deployment is already planned at the same time in the same environment and there could be a potential conflict. This style of communication is named as \_\_\_\_\_
  - A. Effective communication
  - B. Osmotic communication
  - C. Interactive communication
  - D. Conversation communication

11. Knowledge that is gained over the time through observation and experience but cannot be documented is named as:
  - A. Internal knowledge
  - B. Secret knowledge
  - C. Tacit knowledge
  - D. Company confidential information
12. A technique used to improve the performance and ramping up new and junior team members by seating them within hearing distance of more experienced and senior team members is called \_\_\_\_\_
  - A. Expert in earshot
  - B. Caves and commons
  - C. Expert nearby
  - D. Sitting together
13. A space where maximum information exchange takes place, displays whiteboard, well lit, well ventilated, with visible charts is called:
  - A. Team space
  - B. Public space
  - C. Cave space
  - D. Common space
14. A private space where a team member can isolate themselves for a short period either to make personal calls or check e-mails is called \_\_\_\_\_
  - A. Private space
  - B. Member space
  - C. Caves
  - D. Isolated space
15. Which of the following is not a valid example of an Agile contract?
  - A. Time and Material contract
  - B. Multi-stage contract
  - C. Contract with premature closure clause
  - D. Request for proposal

16. Which of the following technologies helps to improve collaboration in virtual teams?
  - A. Common (and single) version control repository
  - B. Common build environment
  - C. Webcams on desktops
  - D. All of the above
17. When team is not co-located, which tool is most effective to radiate information?
  - A. Desktop sharing over the intranet
  - B. PowerPoint presentation sharing over e-mail
  - C. Spreadsheets in a document repository
  - D. Project metrics report display on whiteboard
18. When it comes to team selection, which of the following should be ideal choices to work for an Agile project?
  - A. Experts in niche domains
  - B. Generalized specialists
  - C. Highly skilled analysts who can write test cases and execute them
  - D. All of the above
19. Which contract type allows early termination of a project?
  - A. Fixed price
  - B. Fixed price, but with a provision to scope change
  - C. Time and material
  - D. Cost reimbursable
20. How are contracts in Agile projects different from those in traditional (waterfall) projects?
  - A. In Agile contract, scope changes are easy to make.
  - B. In Agile contract, financial management is not required.
  - C. In Agile contract, it works well when contracted as fixed price.
  - D. In Agile contract, scope changes are hard to make.

## Answer

1. B
2. C
3. A
4. B
5. B
6. D
7. B
8. D
9. D
10. B
11. C
12. A
13. D
14. C
15. D
16. D
17. A
18. B
19. C
20. A

## Quizzes

1. Your team committed to delivering 20 story points this iteration, but it looks like you will only complete 14. You should:
  - A. extend the iteration
  - B. add more resources to the team
  - C. complete 14 points and put rest back in the backlog
  - D. adjust the iteration plan from 20 points down to 14
2. Which of the following collections of planning units is most typical for agile projects?
  - A. a release plan containing multiple projects, each with multiple iterations
  - B. a project plan containing multiple releases, each with multiple iterations
  - C. a project plan containing multiple iterations, each with multiple releases
  - D. a release plan containing multiple iterations, each with multiple releases
3. When converting size estimates to duration, remember to:
  - A. ignore distractions and use ideal time
  - B. divide the timebox capacity by the number of stories
  - C. factor in distractions and use available time
  - D. calculate the payback period for the estimated duration
4. While auditing your project, the PMO notices that project planning is incomplete as only the next couple of iterations have a plan. They raise a flag calling it a problem that needs to be addressed as soon as possible. As a Scrum Master of the team what would you do?
  - A. explain the principles of progressive elaboration.
  - B. create detailed iteration plans for the remainder of the project as instructed by the PMO.
  - C. ignore them, since they clearly have no rights to be reviewing your project.
  - D. ask the team what needs to be done to solve the problem.
5. Which of the following statements correctly describes Agile planning?
  - A. plan at multiple levels and have managers create iteration plans.
  - B. use appropriate estimate ranges and exclude diversions/outside work.
  - C. plan at multiple levels and have team members create iteration plans.
  - D. use fixed point estimates and base projections on completion rates.

6. Which of the following is NOT a characteristic of Agile estimation?
  - A. team-based
  - B. collaborative
  - C. iterative
  - D. fixed-point
7. When conducting an iteration planning meeting using a Scrum approach, which of the following statement is NOT true?
  - A. the product owner is responsible for the priorities in the backlog items
  - B. the team is responsible for the estimates
  - C. the team breaks down user stories into tasks
  - D. the Scrum Master selects the topic items off the backlog
8. You are leading a team with an average velocity of 85 points per iteration. Another team of the same size in your organization is working on a different project with similar complexity. The other team's velocity is averaging 125 points per month. Your team should:
  - A. undertake affinity estimating to check their estimates
  - B. work longer hours
  - C. ignore the difference
  - D. hire additional resources to increase the velocity
9. Estimates should be presented as ranges to
  - A. allow for change requests
  - B. keep the sponsors flexible
  - C. allow for scope creep
  - D. represent uncertainty in estimates
10. A team has an estimated velocity of 25 story points. There are stories with estimates 13, 5, 8, 5, 2, 3 and 21 present in the backlog. Which one should be picked for the iteration?
  - A. Choose the largest story, that is, one with estimate 21 first to have the largest piece done upfront.
  - B. Choose the smallest ones with estimates 2, 3, 5 and 5 first as there is a chance of getting more stories done quicker.
  - C. Choose the ones that the Scrum Master recommends.
  - D. Cannot say based on the given information as the business values of the stories and their priorities should be known first.

11. A team has an estimated velocity of 25 story points. The stories A,B,C,D,E,F,G,H has been sequenced in priority order and have estimates 13, 5, 8, 5, 2, 3 and 21. Which should be an appropriate strategy to pick stories for the iteration?
  - A. Select stories A, B, D and E, skipping over C because it is too large.
  - B. Select stories A, B and split C appropriately so as to fit in the iteration (along with any others if there is room).
  - C. Estimates are not accurate. So start with stories A and B and then assess how much of the rest can be picked up.
  - D. None of the above.
12. Your team is averaging 40 story points per two-week iteration. They have 200 points worth of functionality left in user story backlog. How many weeks do you expect it will take until development is completed?
  - A. 2.5
  - B. 5
  - C. 10
  - D. 20
13. When using story points to estimate a project, which of the following statement is most accurate?
  - A. the team owns the definition of what constitutes a story point
  - B. there should be a company-wide standard definition of a story point
  - C. the definition of a story point is refactored every iteration
  - D. story points can be used for iteration planning but not release planning
14. On Agile projects, generally midcourse adjustments are:
  - A. not necessary
  - B. the exception
  - C. the norm
  - D. mandatory
15. When calculating final project costs, which of the following expressions best outlines the basic concept?
  - A. Time + (Rate X other project costs)
  - B. (Time X Rate) - other project costs
  - C. Time X Rate X project duration
  - D. (Time X Rate) + other project costs

16. Affinity estimating is the process of
  - A. averaging the over and under-estimations
  - B. checking the stories given the same size estimate are of equivalent magnitude
  - C. checking that stories in the same functional areas are of equivalent magnitude
  - D. estimating your favorite stories first
17. The term “progressive elaboration” means
  - A. scope always keep growing
  - B. plans are refined as more details emerge
  - C. the development team progresses steadily
  - D. the iteration size increases over time.
18. You are a full-time Scrum Master on an Agile team. A team member becomes ill in the middle of an iteration in which the team committed to deliver 25 story points. Which action is most appropriate?
  - A. ask the remaining team members to work overtime to make up
  - B. send the work home to the sick team member
  - C. start development yourself
  - D. deliver what you can within the sprint
19. A team consists of 5 members each with a weekly rate of \$200. The team has a projected velocity of 40 story points in an iteration of 2 weeks. What is the cost of completing a story having size of 8 story points?
  - A. \$1000
  - B. \$400
  - C. Cannot be computed as the availability of the team members (part time/full time or planned leaves) are not specified
  - D. None of the above
20. During a planning poker session, participants come up with estimates of 5, 8, 13, 38, 5 and 5 respectively during the first round for a particular story. What should the facilitator advise?
  - A. Choose 5 as it has majority voting.
  - B. Choose 8 as it came from the lead developer and he has profound experience.
  - C. Understand the rationale behind the outlier (38) and then ask the team to play another round.
  - D. Give up since the team is not able to make up their mind and reach consensus.

21. During estimation and sprint planning sessions, the team should bear in mind:
  - A. Relative sizing of the stories
  - B. Velocity of the team
  - C. Definition of done for each story
  - D. All of the above
22. The letter V in the INVEST acronym used to depict attributes of user stories stands for:
  - A. Verifiable
  - B. Viewable
  - C. Valuable
  - D. None of the above
23. A story that is too complex could be split. While splitting user stories, some broad guidelines include:
  - A. Split based on cross-cutting concerns like logging, exception handling and security.
  - B. Split based on 'slicing-the-cake' concept so that the user gets a slice of end-to-end functionality.
  - C. Split based on mixed priorities within the complex story.
  - D. All of the above.
24. Which of the following is NOT an innovation game?
  - A. Prune the product tree
  - B. Wideband Delphi
  - C. Speedboat
  - D. Remember the future
25. What does the Cone of Uncertainty depict?
  - A. It is difficult to estimate at the beginning of the project and the estimate contains a high range of uncertainty.
  - B. The estimate converges to a  $\pm 10\%$  confidence level following detailed design.
  - C. Both A and B.
  - D. Neither A or B.
26. The 3C's for a story card stands for:
  - A. Card, characteristics and conclusion
  - B. Card, conversation and confirmation
  - C. Card, concept and consumption
  - D. Card, contact numbers and conversation

27. A Minimally Marketable feature (MMF) is:
  - A. A feature that is valuable, essential and relatively small.
  - B. A feature that can be sold and marketed.
  - C. A feature that has a fairly high ROI.
  - D. All of the above.
28. When doing triangulation, team members choose a reference point. This can be
  - A. A story that is small and another one that is medium in size, such that a story can be compared to them.
  - B. A story that is exactly 1 story point.
  - C. A set of stories that has already been implemented in the previous project.
  - D. A set of stories that has already been implemented in another department of the same organization.
29. Agile recommends Just-in-time (JIT) planning because:
  - A. JIT planning eliminates waste incurred in up-front detailed project planning and keeps the plan up to date as change requests get approved.
  - B. JIT planning means lesser amount of effort in planning.
  - C. There is no role of a Project Manager to create a project plan in Agile.
  - D. Agile coaches advise that JIT planning is helpful.
30. As far as hierarchy goes, list the below items from smallest to biggest:
  - A. Theme, task, story, epic
  - B. Task, story, epic
  - C. Story, task, epic, feature
  - D. Story, theme, epic

## Answers

1. C – An iteration is timeboxed. Unfinished work is returned back to the backlog.
2. B – A project can have one or more releases and in each release there can be one or more iterations.
3. C – When converting size estimates to duration, we need to consider the availability of the resources. If a resource is available 50 percent, then task duration must be twice as long as if a resource is available full time.
4. A
5. C
6. D
7. D – Scrum Master's job is to facilitate the team and not to make plans or tell what items to be added in sprint/iteration. The rest all are correct statements.
8. C – Velocity is a team-specific metric.
9. D
10. D – The product owner and the team should choose the stories that give the highest ROI.
11. B
12. C – There is no indication of a team's availability or any distractions, therefore assuming straight calculation. Total iterations = estimates / velocity =  $200/40 = 5$ . Total duration = 5 iterations X 2 weeks per iteration = 10 weeks.
13. A
14. C
15. D
16. B
17. B
18. D
19. B – In 2 weeks the total spent is  $\$200 \times 5 \text{ members} \times 2 = \$2,000$ . Cost of 1 story point =  $2000/40 = \$50$ . Cost of 8 story points =  $\$50 \times 8 = \$400$ .
20. C – It is common to see variability in estimates at the beginning of the estimation session, so it's advisable to play a few rounds for consensus to emerge.
21. D
22. C
23. D
24. B – Delphi is a group-consensus technique used for planning and estimation.
25. C
26. B
27. D
28. A
29. A
30. B

## Quizzes

1. The formula for risk severity is as follows:
  - A. Risk severity = Risk probability x Risk impact
  - B. Risk severity = Risk probability / Risk impact
  - C. Risk severity = Risk probability + Risk impact
  - D. Risk severity = Risk probability - Risk impact
2. At which phase of the project is Risk planning done?
  - A. Iteration planning
  - B. Sprint planning
  - C. Release planning
  - D. During the entire project lifecycle
3. Product parts are often subject to damage during shipment, which causes a high level of impact to the customer. To manage the risk, the project team insures all shipments. This risk response is a good example of:
  - A. Avoid Risk
  - B. Mitigate Risk
  - C. Transfer Risk
  - D. Accept Risk
4. Errors missed by quality assurance and control process and released to the end user are:
  - A. Cost of change
  - B. Undocumented features
  - C. Escaped defects
  - D. Change request
5. An experiment performed to address the risk identified for a user story is called:
  - A. Risk response
  - B. Risk-based spike
  - C. Risk mitigation
  - D. All of the above

6. An approach where testers perform minimum test planning and maximum test execution is known as:
  - A. exploratory testing
  - B. automation testing
  - C. test-driven development
  - D. acceptance-driven development
7. Frequently integrating new and changed code is known as
  - A. Integrating continuously
  - B. Continuous integration
  - C. Integration control
  - D. Constant integration
8. Test-Driven Development (TDD) technique is performed as:
  - A. Red, green, black
  - B. Green, red, refactor
  - C. Green, red, register
  - D. Red, green, refactor
9. All are frequent verification and validation techniques, except:
  - A. Pair programming
  - B. Iteration planning
  - C. Unit testing
  - D. Iteration demos
10. Steps to perform while using TDD technique:
  - A. write test, write code, refactor
  - B. write code, write test, refactor
  - C. write code, refactor, write test
  - D. write test, refactor, write code
11. Continuous integration provides:
  - A. Slow feedback
  - B. No early detection of code issues
  - C. Frequent feedback
  - D. Delivers software only at the end

12. TDD focuses on Code whereas ATTD focuses on:
  - A. Development tools and practices
  - B. Business or customer
  - C. Release plan
  - D. Process tailoring
13. Spikes helps to
  - A. Increase velocity
  - B. Mitigate risk with uncertain technology/domain
  - C. Freeze estimates
  - D. Continuously build and integrate
14. During a problem detection session, you ask WHY five times because
  - A. People feel frustrated if asked a sixth time
  - B. Truth comes out only when asked why five times.
  - C. Gather data around the issue
  - D. To get to the root cause of an issue
15. When performing Risk analysis, which of the following is NOT a risk parameter:
  - A. Probability
  - B. Impact
  - C. Timing
  - D. Risk burndown chart
16. Which of the following changes are observed when a team adopts the shift-left testing approach?
  - A. Focus changes from detecting to preventing defects
  - B. Break the silos between the development and testing teams
  - C. Development and testing activities progress in parallel
  - D. All of the above
17. Choose the correct stages of ATTD process:
  - A. discuss, distill, develop, demo
  - B. discuss, develop, distill, demo
  - C. discuss, develop, demo, distill
  - D. distill, develop, demo, discuss

18. Which of the following testing is recommended to be automated on top priority?
  - A. User interface
  - B. Database stored procedures and triggers
  - C. Back-end code that deals with formulae and algorithms
  - D. Build scripts
19. All are Shift-left testing benefits, except:
  - A. Resolving testing bottlenecks during the end of the project
  - B. Getting quick customer feedback
  - C. Decrease the utilization of shared test environments
  - D. Fewer integration defects
20. Select the correct sequence of steps for problem resolution:
  - A. Identify solution, analyze, define, implement, review and confirm
  - B. Define, analyze, identify solution, implement, review and confirm
  - C. Identify solution, define, analyze, implement, review and confirm
  - D. Analyze, define, identify solution, implement, review and confirm

## Answers

1. A
2. D
3. C
4. C
5. B
6. A
7. B
8. D
9. B
10. A
11. C
12. B
13. B
14. D
15. D
16. D
17. A
18. C
19. C
20. B

## Quizzes

1. Retrospective meeting happens after which event in an iteration?
  - A. Iteration review meeting
  - B. Iteration planning meeting
  - C. Release planning meeting
  - D. Daily stand-up meeting
2. In retrospective, Gather data stage includes activities like \_\_\_\_\_.
  - A. triple nickels, control chart, locate strengths
  - B. timeline, color code dots, team strengths
  - C. triple nickels, color code dots, locate strengths
  - D. timeline, control charts, team strengths
3. Richard is conducting a retrospective meeting. As recommended by the Agile coach, Richard is planning on using the following agenda in the meeting:
  - A. Set the stage, generate data, gather insight, decide what to do, close the retrospective.
  - B. Set the stage, gather data, generate insight, decide what to do, close the retrospective.
  - C. Gather data, set the stage, generate insight, decide what to do, close the retrospective.
  - D. Gather data, set the stage, decide what to do, generate insight, close the retrospective.
4. Failure modes shared by Alistair Cockburn, includes all of the following except:
  - A. Fail conservatively
  - B. Inventing rather than researching
  - C. Making mistakes
  - D. Being consistent
5. An event where the team calls for an adhoc or impromptu retrospective meeting is:
  - A. Retrospective meeting
  - B. Adhoc retrospective meeting
  - C. Intraspective meeting
  - D. Daily stand-up meeting

6. \_\_\_\_\_ is a technique used to identify the root cause of a problem.
  - A. Pareto chart
  - B. Fishbone diagram
  - C. Control chart
  - D. Scatter diagram
7. In focus on / focus off exercise, the team should focus on \_\_\_\_\_ rather than advocacy.
  - A. Dialogue
  - B. Investigation
  - C. Understanding
  - D. Inquiry
8. Actions and goals that teams agree at the end of retrospectives should be SMART. The acronym stands for:
  - A. Specific, measurable, achievable, realistic, time-bound
  - B. Short, measurable, actionable, realistic, time-bound
  - C. Specific, measurable, amendable, realistic, time-bound
  - D. Short, measurable, achievable, random, time-bound
9. What is a control chart?
  - A. A type of a RACI chart
  - B. A chart that shows the root cause of a problem
  - C. A type of a fishbone diagram
  - D. A chart that shows the stability of a process
10. In SIDKY's agile maturity framework, what are the different levels to follow agile practices
  - A. Collaborative, evolutionary, integrated, adaptive, encompassing
  - B. Collaborative, exploratory, integrated, adaptive, encompassing
  - C. Constructive, exploratory, integrated, adaptive, encompassing
  - D. Consistent, evolutionary, integrated, adaptive, encompassing
11. Which of the following is a recommendation for one-on-one coaching?
  - A. Guarantee safety so that the team member is able to open up.
  - B. Create positive regard and show professionalism at all times.
  - C. Team up with the functional manager of the team member.
  - D. All of the above.

12. Retrospective is best described as:
- Review the software built by the team and not how the team worked and apply the learnings to the next iteration.
  - A forum to share achievements, celebrate and identify coaching needs.
  - Identify 5 things that went well and 5 things that did not go well or could have been better. Document these lessons learned and save in organizational document repository for use in future projects.
  - Review how the team worked and not on what was delivered. Take the learning on what could be improved and feed that as input to next iteration.
13. The activity of \_\_\_\_\_ is to analyze the current processes and make changes as per project requirements.
- Process Tailoring
  - Value Stream Mapping
  - Process analysis.
  - Creating product backlog
14. As an agile coach, you coach at two levels - Whole-team level and Individual level. Which level is it best to coach at the start and end of an iteration?
- Whole-team
  - Individual Level
  - Both levels
  - None of the above
15. Individual level coaching is best to provide at which stage of the sprint?
- Start of a sprint
  - End of a sprint
  - Middle of a sprint
  - Anytime when conflicts arise
16. What does Lean 5S stand for
- sort, set in order, shine, standardize, sustain
  - set in order, sort, standardize, sustain, shine
  - sustain, standardize, sort, set in order, shine
  - standardize, sustain, sort, set in order, shine

17. During inspection, you found that the 3 consecutively selected specimens of the manufactured product have dimensions of 5.78 cm. As per the contract, the client has mentioned specification limits of 5.55 cm to 5.85 cm. And the control limits are 5.7 cm to 5.8 cm. What should you do?
  - A. Reject the items as the measurement is above the lower control limit. Adjust the process.
  - B. Discard the specimens as they are too close to the upper control limit.
  - C. Accept the item since the measurement lies within the specification limits.
  - D. Accept the item since the measurement lies within the control limits and the rule of seven is not violated.
18. There is a problem reported during process analysis. A chart with several dots showing that the process is out of control, so which tool is in use here?
  - A. Pareto Diagram
  - B. Control chart
  - C. Burndown Chart
  - D. Kanban Chart
19. Virginia Satir model depicts:
  - A. The relationship between products, processes and people.
  - B. The change curve in transition from the current to the future stage.
  - C. The skill development requirements within the team.
  - D. The prescription for Agile adoption in an organization.
20. When closing a retrospective, which activity is used?
  - A. Circle of questions
  - B. Brainstorming
  - C. Helped, Hindered, Hypothesis
  - D. Mad, sad, glad

## Answer

1. A
2. C
3. B
4. D
5. C
6. B
7. D
8. A
9. D
10. A
11. D
12. D
13. A
14. A
15. C
16. A
17. D
18. B
19. B
20. C

## Quizzes

1. What are the core values of the PMI® code of ethics?
  - A. Responsibility, Respect, Fairness, Honesty
  - B. Responsibility, Respect, Fairness, Truth
  - C. Responsibility, Integrity, Confidence, Fairness, Honesty
  - D. Responsibility, Respect, Openness, Honesty
2. Bill is discussing the terms and conditions of a contract with a supplier. He observes that the supplier is happy to deal verbally, but when it comes to documentation he is not taking much of an interest. As a result, the contract documentation is very flaky and impeding the sign-off process from both sides. What should Bill do now?
  - A. Since you need a win-win outcome, agree to an informal way as this is how the supplier company works and is comfortable.
  - B. Start documenting all conversation with this supplier as meeting minutes and keep them as a record.
  - C. Back out of the contract.
  - D. Insist the supplier follows all project processes including formal contracts and sign-off. Also keep senior stakeholders informed.
3. Richard is working on a project to manufacture spare parts of a vehicle. However, the customer rejected the shipment due to the wrong size of parts as compared to the agreed size in the contract. What should you do?
  - A. The contract should be updated for the new size of the spare parts.
  - B. The sunk costs can be adjusted against project contingency reserves.
  - C. Quality control has been failed, resulting in the wrong size of spare parts manufactured. So take corrective actions.
  - D. Blame the manufacturing team.
4. PMI® code applies to all, except:
  - A. PMI® members.
  - B. Holds a PMI® certification but not a PMI® member.
  - C. In process to apply for a certification but not a PMI® member.
  - D. Neither involved with PMI® nor a PMI® member.

5. A position is opened on your project. One of your relatives approached you for the same and requested to refer his resume for this open position in your project. You should:
  - A. Submit the resume since the skillsets match but do not disclose that you are a relative.
  - B. Do not submit, as this will be a conflict of interest.
  - C. Submit the resume but disclose the relationship to the hiring department.
  - D. Secretly give it to one of your colleagues to submit the resume so that you can avail yourself of the referral benefit.
6. You are working on new bid for your company. One of your friend's companies is in competition. He approached you trying to get some information on the bid including financial information. The information is classified as 'company internal'. What do you do?
  - A. Decline the request politely.
  - B. Provide the information as he is your best friend.
  - C. Provide the information on condition that you will share some benefit out of it.
  - D. Provide partial information, which will not harm you or your organization.
7. You understand that one of your colleagues is filing for PMI® certification but does not have relevant experience. He is filling the application with wrong information. What should you do?
  - A. Remind him of PMI®'s code of ethics and professional responsibility.
  - B. Escalate to his manager.
  - C. Report to PMI®.
  - D. Leave it for the PMI® audit team to take care of it.
8. Richard, from another department, is deputizing while the assigned project manager is on long leave. While collecting project status, Richard finds discrepancy in status from past few weeks. The project is overspent, behind schedule, and actually in RED but shown Green on reports. What should Richard do?
  - A. Report to PMI®, as this is clear violation of PMI®'s code of ethics.
  - B. Since Richard is filling in, continue with the data of the previous report, as no one else noticed the discrepancy.
  - C. Update actual status to dashboard report and inform the management.
  - D. Ask the project manager about the discrepancies when he returns.

## Answer

1. A
2. D
3. C
4. D
5. B
6. A
7. A
8. C

# Appendix

## Advice, tips and tricks

The PMI-ACP® certification is an important step in your career to boost your proficiency in Agile practices. Like most strategic pursuits, apply the 5 R's technique:

- **Results** – First determine your ‘SMART’ goal. Be convinced that you want to get PMI-ACP® certified in a finite time (say 3 months).
- **Reason** – Second, have your own explanation why you want to get PMI-ACP® certified. What is your plan after getting certified? Maybe it is just to increase your knowledge in Agile, prove your proficiency, keep pace with the industry, search for a new job, or simply to meet the training targets set on your biannual goals and objectives.
- **Roadmap** – Come up with a plan how you are going to realize the results. Determine your position with respect to the eligibility criteria for the exam and see if you need to fill in any gaps. Set a target date that is feasible and in-line with your other professional and personal commitments. Define some intermediate milestones. If you need to move the milestones or the target, self-justify why you are doing so and whether the new dates are indeed achievable or not.
- **Review** – At periodic intervals review whether you are going as per the plan or not. Research the areas where you are losing marks. If you are finding a topic difficult to absorb, read and practice more. Talk to your colleague or supervisor or anyone you feel appropriate. Refer to some of the reference books I have listed. It’s important that you keep up the motivation; do not get bogged down and continue to move forward to your own target.
- **Resources** – Find out what resources you need. Since you are already reading this book, the primary resource is already with you. You might need to take a few leaves from your work during the preparatory phase. You might attend the 21-hour formal training course. You might need help from family (for the time you sacrifice!) and peer colleagues. You might benefit from forming a study group with aspirants in your similar situation.

In the following section I will give you some do’s and don’ts, based on my personal experience that you might consider helpful. This is the risky part, since every exam taker has his or her own style of approaching a goal. So, read it and absorb only the part that you can personally connect to. If it strikes a chord, great! If it doesn’t, don’t bother.

## Before the exam

- ✓ Do prepare a plan for your preparation and stick to it. If you have sufficient Agile project experience, you will notice that the subject matter for PMI-ACP® exam is not difficult, but it needs familiarity of the vocabulary and consistent practice. At the same time you cannot take it casually.
- ✓ Do consider forming study groups. If you find one in your organization, then it is probably the best. Otherwise lookout for regional meetup groups or ones on social media. Maintain a balance on the time you spend behind your preparations versus such activities.
- ✓ Do subscribe to virtual forums like groups on LinkedIn®. You will find experts and like-minded aspirants, in various stages of preparation, over there. Often questions are discussed. Some people share their personal experiences, which could be quite useful.
- ✓ Do connect the theory with your professional experience as that will help with learning and retention. Prefer this over memorization.
- ✓ Do fill up your application form carefully and truthfully. The section on your project experience can take time to fill (up to 2–3 days). Avoid jargons and acronyms in the free-text field for the project description. Use words that appear in Agile vocabulary that anyone can easily relate to during your application review. Contact your colleague or ex-supervisor if you have named them on your previous project details. Factor in the time needed for doing that if you have moved organizations.
- ✓ Do practice the full-length mocktests religiously. The PMI-ACP® exam last 3 hours – so not only does it test your proficiency and knowledge, it tests your patience, perseverance and sustained levels of concentration for 3 hours at a stretch. Most of you would have gotten out of the habit of taking long exams, so make sure that you are physically and mentally rehearsed going through the 3-hour rigor before the real exam.
- ✓ Do schedule your exam during the first half of the day. That's when you have the highest levels of energy.
- ✓ Do take a trip to the Prometric test center a few days before the exam. If you are planning to drive, then familiarize yourself with the route, traffic conditions and parking spots. Otherwise if you are using public transportation, check for the modes and the stops you need to take. If planned in advance, the test center administrator can also give you a walking tour. If the test center is really far off and two trips may not be feasible, then it is okay. But otherwise, this trip might just add to your comfort.
- ✗ Do not overwhelm yourself with arbitrary content over the Internet. They have varied qualities of content that might confuse you. Exercise caution if you are attempting mock exams from elsewhere –if they are not at the equivalent difficulty level as the final exam, you are likely to either get a false sense of elation and confidence or get demotivated.
- ✗ Do not worry too much about mathematical formulae. There are just a few of them (given below) and the number of mathematical questions on the real exam are also going to be very few.
- ✗ Do not schedule the exam too early, like several months ago. Chances are that you might lose momentum or even something else might crop up at the last moment.

- ✗ Do not panic if your application is picked up for audit. This is random and not a reflection of any suspicion from PMI® about your application. Respond to the audit request transparently and timely – everything should be fine.
- ✗ Do not worry if your preparation is interrupted temporarily with a high-priority need from your family or work. But do not get stressed out or feel guilty. You should carve out a plan that works best and helps you to make your certification journey a pleasing one.
- ✗ Do not try to reread or rehearse every material a day before the exam. Stay relaxed and focused. Get a good night's sleep.

## During the exam

- ✓ Do try to reach the exam center an hour early before the scheduled start. You will have to sign some paperwork, put away your belongings (some test centers provide lockers) and take the tutorial before the exam. The important thing is to stay relaxed.
- ✓ Do make sure that you are hydrated and had enough food that does not make you desperately hungry before the exam ends. At the same time do not overeat immediately before the exam as that could make you feel sleepy.
- ✓ Do make sure that the environment around you is comfortable. The area should be well lit, well ventilated and there should not be any noise or distractions from fellow test takers (from other subjects). Talk to the test center administrator if you have any concerns.
- ✓ Do keep a watch on the clock while you are going through the exam. You need to complete 120 questions in 180 minutes. This means that you should roughly take (slightly more than) a minute for every question on an average. So, in the best case you should have completed 45-50 questions in the first hour, another 45-50 in the next hour and the remaining questions and marked questions in the last hour.
- ✓ Do consider taking a break if you need one. Take permission from the test center administrator while you leave the room and reenter. Remember your clock keeps ticking during your break, so make it short and do not get distracted.
- ✓ Do choose the best answer, even if you are deciding to 'mark' it and revisit later. Chances are that, after several weeks of preparations, your first choice is going to be the best choice. When you review later, you can stick with the initial choice or change.
- ✓ Do try to arrive at the best option by the strategy of elimination (of the incorrect ones).
- ✓ Do read through ALL the options although you may have already predecided on an option. It is important to rule out the other options to be sure.
- ✓ Do pay attention to keywords like 'Always, Never, Most, Least, First, Last, Except, Not' as they can dramatically influence your choice of the right option.
- ✓ Do use different strategies for lengthy questions, spanning several sentences. If you see one, chances are that a lot of the text in the body of the questions may be extraneous information. You might want to ready the options first in such a case to anticipate what the question might be hinting at. Another strategy could be to read the last sentence that contains the question. This is where some practice will help.

- ✗ Do not try to guess whether a question is unscored question or not. It is neither possible nor relevant.
- ✗ Do not feel distracted if the test center administrator frequently strolls or watches over your back. He will certainly not know about your question, but is simply performing his vigilant duty. You will also be constantly video monitored.
- ✗ Do not resort to any disruptive behavior or unfair means during the exam because these might be grounds for termination of your examination session or grounds for dismissal. Refer to the exam policies and procedures in the PMI-ACP® handbook for more details.
- ✗ Do not leave any questions unanswered as there is no negative marking. Make your best guess.
- ✗ Do not rush through the questions. You might hear people claiming that they are done in 2 hours or so. You can simply ignore that. Work at your own comfortable pace; use all of the time you need; and most important, be sure of the answers that you are choosing. Remember there is no gold medal if you finish in record time.
- ✗ Don't jump into an answer if you find that technically correct from a stand-alone perspective. Check for relevance of the answer in the context of the question asked.
- ✗ Do not get stuck with any question for more than 4 minutes or so. If it's a hard question then it makes sense to take an educated guess, mark it and move on. Remember that all questions, irrespective of the level of difficulty, carries equal marks.
- ✗ Do not panic or get frustrated if you face a series of tough questions, especially at the beginning. The difficulty of the questions might vary, but rest assured that you are likely to get another series of easy-to-score questions later on.
- ✗ Do not 'mark' too many questions, leaving them for later. If you are out of time, then this might just add pressure. I would recommend a thumb-rule of marking no more than 10-15% of the questions.
- ✗ Don't be worried if selecting a particular option doesn't make it grammatically correct when fitted with rest of the sentence.

## After the exam

- ✓ Do return the scratch sheets that you used during the exam.
- ✓ Do take the score sheet printed out by the test center administrator with you.
- ✓ Do collect your id and belongings before you leave the exam center.
- ✓ Do celebrate your achievement. You have become certified after weeks of hard work and you certainly deserve it. Call your family, friends and colleagues. Flaunt it on your resume, email signatures, social media – wherever it's appropriate.
- ✓ Do share your experiences and mode of preparation.
- ✓ Do expect PMI® to send you a congratulatory note and a package with the hard copy of the certificate in a few weeks. Your name will also be entered into an online registry for all valid certification holders.
- ✓ Do download the soft copy of your PMI-ACP® certificate by logging into the PMI.org site.

- ✓ Do remember that your PMI-ACP® certificate is valid for 3 years. Scout around to work out a plan how you can gather 30 PDU's over the next 3 years to renew your credential. PMI® allows you to renew sooner, if you have already gathered and reported the PDU's. If you have multiple credentials from PMI® (like PMP®), then an activity could qualify for PDU's in multiple certifications simultaneously.
- ✓ Do read some of the brilliant reference books at your leisure, as they can also help you gather PDU's. If you have PMI® membership, refer to some of the member-only content available through their site.
- ✓ Do consciously try to apply the practices, tools and techniques that you have learned. Especially in contemporary organizations, we get to see software professionals working in hybrid environments where they use things from multiple Agile methods, mixed with traditional project management. As an Agile certified professional, you should be able to facilitate such an environment.
- ✗ Do not be disheartened if you failed the exam. Sometimes it might be because of overconfidence or lack of adequate preparation. You should be able to reflect what went wrong. Seek some advice from fellow practitioners and prepare with a blend of theoretical study augmented with practice tests. Remember that with serious preparation, most do pass the exam.
- ✗ Do not share any of the questions or examples to anyone outside. You have signed the nondisclosure agreement and doing so is a violation of PMI®'s code of ethics and professional conduct.

Good luck for your preparation and the exam!

## Acronyms at a glance

Acronym	Expansion	Context
PMI-ACP®	PMI® Agile Certified Practitioner (PMI-ACP)®	Name of the certification
ATDD	Acceptance Test-Driven Development	Writing acceptance tests before writing code
BART	Boundary, authority, role and task	Tool for process improvement in a team
BDD	Behavior-Driven development	Customer-oriented quality practice
CFD	Cumulative Flow Diagram	Visualization to track work in progress
CI	Continuous Integration	Agile tooling
CR	Cost reimbursable	Type of contract
CRACK	Committed, Responsible, Authorized, Collaborative and Knowledgeable	Attributes of a product owner
DEEP	Detailed appropriately, estimable, emergent, prioritized	Attributes of a product backlog
DSDM	Dynamic system development method	An iterative and incremental method of software development
FDD	Feature-Driven Development	An Agile methodology
FP	Fixed Price	Type of contract
INVEST	Independent, Negotiable, Valuable, Estimable, Small, Testable	Attributes of a user story
IRR	Internal Rate of Return	An economic model for project selection
JIT	Just-in-time	A type of planning used in Agile
MMF	Minimally marketable features	Smallest piece of functionality
MoSCOW	Must-have, Should-have, Could-have, Won't-have	Value-based prioritization technique used in Agile
MVP	Minimum viable product	Product with minimum features, but still useful for users
NPV	Net Present Value	An economic model for project selection
PBI	Product Backlog Item	Each item on the product backlog
PDCA	Plan Do Check Act	Deming's cycle for continuous improvement
PESTLE	Political, Environmental, Social, Technological, Legal, Economic	Risk categorization
PMBOK®	Project Management Body of Knowledge	PMI®'s guide for project managers

(continued)

Acronym	Expansion	Context
PMI®	Project Management Institute	Premier institute based in the United States, which is also the certifying body for the PMI-ACP® exam
PO	Product Owner	A role in Scrum
RAD	Rapid Application Development	A precursor of Agile methods
ROI	Return on Investment	An economic model for project selection or selection of a feature for implementation
SAFE®	Scaled Agile Framework	Framework for scaling Agile for the enterprise
SMART	Specific, Measurable, Achievable, Relevant, Time-bound	Attribute of a user story or a goal from a retrospective
SOW	Statement of work	Type of contract
T&M	Time and material	Type of contract
TDD	Test-Driven Development	A technique where tests are written before code
TIA	Transparency, Inspection and Adaptation	Three pillars of Scrum
TIMWOOD	Transport, Inventory, Motion, Waiting, Overprocessing, Overproduction, defect	Seven wastes in Lean
TPS	Toyota Production System	Origin of Lean
W5H	What, Why, Who, When, Where, How	Contents of an Agile charter
WIP	Work in progress	Aim to limit in Kanban
XP	Extreme Programming	An Agile methodology
3C's	Card, Conversation, Confirmation	Aspects of a user story

## Formulae in a page

Present Value  $PV=FV / (1+r)^n$

Where FV = future value, r = interest rate and n = number of time periods.

NPV higher the better

IRR higher the better

BCR higher the better

ROI higher the better

Payback period lower the better

Channels of communication =  $n * (n - 1) / 2$ ,

where n is the number of entities in communication.

### Earned Value Management

EV = Earned Value, PV = Planned Value, AC = Actual costs

Schedule Variance SV = EV – PV

Cost Variance CV = EV – AC

Schedule Performance Index SPI = EV / PV

Cost Performance Index CPI = EV / AC

SV < 0 or SPI < 1 means project is behind schedule

CV < 0 or CPI < 1 means project is over budget

SV = 0 or SPI = 1 means project is on schedule

CV = 0 or CPI = 1 means project is on budget

SV > 0 or SPI > 1 means project is ahead of schedule

CV > 0 or CPI > 1 means project is under budget

### Little Law:

Work in progress (WIP) = Lead Time \* Throughput.

Where Throughput = average rate at which work departs or is completed  
and Lead Time = average time an item spends in the system

Takt time = Available time for production / customer demand

Where available time is the total number of hours employees are working  
minus any time for meetings, down times and breaks.

Risk severity or risk exposure or Expected Monetary Value (EMV) = Risk Impact X Risk Probability

# Mock Exam I

1. The Managing Director (MD) of the organization stops by the task board of the team and makes a suggestion of an important feature that the development team should deliver in the current iteration. What should the development team do?
  - A. Since it is coming from the MD, it must be done at any cost. So drop an item of equal size from the backlog.
  - B. Say yes to the MD and then ask the team members to work overtime to achieve their target.
  - C. Ask the product owner so that he can discuss the value and priorities with the MD.
  - D. Ignore it, the MD will most likely forget what he said a few weeks later.
2. A newly formed development team is working on Sprint zero. In terms of doing the following activities, which is false?
  - A. Team completes the entire architecture and high-level design for the project, leaving out the low-level design.
  - B. Develop the detailed project plan.
  - C. Deliver a few stories.
  - D. All of the above.
3. Who makes the final call on priority order in the Product Backlog?
  - A. The Development Team
  - B. The Scrum Master
  - C. The Product Owner
  - D. Someone in senior leadership like the MD or the CEO

4. With respect to the roles on a Scrum team, choose the odd one out?
  - A. Scrum Master
  - B. Product Owner
  - C. Development Team
  - D. Project Manager
5. The Development Team is expected to have all the skills needed to:
  - A. Complete the project by the given deadline and budget shared upfront with the sponsor.
  - B. Do analysis and development work, but leave out all forms of testing since that is handled by another specialized team.
  - C. Turn the Product Backlog items into potentially shippable product increments.
  - D. Master all state-of-the-art technology practices and tools available.
6. What is the main way that a Scrum Master contributes to maximizing the productivity in the development team?
  - A. By maintaining a risk-adjusted Product Backlog in priority order.
  - B. By making sure hygiene is maintained on meeting – agendas, start & end times, capturing and sending out minutes, etc.
  - C. By facilitating Development Team decisions and removing impediments.
  - D. By providing news about the newest technology trends in the market.
7. All of the following are Scrum artifacts except:
  - A. Product backlog
  - B. Gantt chart
  - C. Sprint backlog
  - D. Burndown chart
8. During an estimation session each team member is asked to provide an estimate. Which of the following is correct?
  - A. The team member provides estimates for only the story that will be assigned to him.
  - B. The developer provides a development estimate, the analyst provides an analysis estimate and the tester does his part. Ultimately all the estimates are aggregated.
  - C. The team members provide a relative estimate in units of ideal days.
  - D. Participation of a team member is voluntary as the Scrum Master can fill in wherever necessary.

9. A project stakeholder wants to have a look at how the Agile team is progressing in the middle of an iteration. As a member of the Agile team, you can guide him to:
  - A. The most recent weekly status report.
  - B. The sprint backlog.
  - C. The defect log.
  - D. The combined burnup and burndown charts.
10. XP teams take collective ownership of code. For such a team, \_\_\_\_\_ and \_\_\_\_\_ are the key.
  - A. Definition of done and pair programming.
  - B. Trust and collaboration.
  - C. Velocity and co-location.
  - D. Onsite customer and test-driven development.
11. Barry is a team member currently in a sprint planning session. After hearing about the requirement from the product owner, he estimates the amount of effort required by taking account that he will be working on this story and nothing else. He assumes that he will not face any interruptions. Which unit of estimate is he using?
  - A. Story points
  - B. T-shirt sizes
  - C. Ideal days
  - D. Either A or C
12. What is the primary role of a Product Owner?
  - A. The PO is basically a project manager who balances scope, time, cost and risk.
  - B. Maximizing the Return on Investment (ROI) of the software developed.
  - C. People management for the Team.
  - D. Avoiding distracting and keeping stakeholders at bay.
13. Which of the two ceremonies are executed after all development for a sprint and beginning of the next one?
  - A. Sprint review and sprint retrospective
  - B. Sprint review and sprint planning
  - C. Daily stand-up and sprint review
  - D. Sprint retrospective and sprint planning

14. Kanban board is an example of:
- Toyota production system
  - Information refrigerator
  - High-tech and low-touch system
  - Information radiator
15. What happens during a Sprint Review?
- Review of what the team could do more or less off during the next sprint.
  - Figure out the scope for the next sprint.
  - End of the sprint demo for everyone to solicit feedback on the work done in the sprint.
  - It is an opportunity to brainstorm and do a root cause analysis of work items that could not get done.
16. How do we know when a sprint is over?
- When all items in the sprint goal have met their definition of done.
  - When the Product owner accepts all the work that was committed in the sprint planning meeting.
  - When the timebox expires.
  - None of the above.
17. While inspecting a release burndown chart, it is observed that the bar graph moves below its X-axis. Choose the best conclusion.
- This is normal. Scope could have gotten added by the product owner.
  - This is normal. The developers would have underestimated the complexity of the story.
  - This is abnormal and indicates poor data quality being plotted on the burndown chart. The bar graph can touch the X-axis, but not go below it.
  - This is abnormal. The team should have completed what was committed by them.
18. Under what condition can a sprint be abnormally terminated?
- When the PO determines that it no longer makes sense to carry on with a sprint.
  - The team has overcommitted and the sprint scope is too large to be achieved.
  - A production defect needs to be addressed by priority.
  - There is another project for which some analysis needs to be completed by the SME's in the current team.

19. During a planning session, the product owner and the team sit down together and sort the stories from the backlog into must-have, should-have, could-have and won't-have. The must-haves top the chart and along with those a few should-haves get selected for implementation during the iteration. Which prioritization technique did the team follow?
- A. Kano model analysis.
  - B. Weighted prioritization technique.
  - C. Simple ranking technique.
  - D. MoSCoW.
20. In Agile vocabulary, a spike is a:
- A. Sudden increase in the quantum of work received.
  - B. Sudden increase in the quantum of risks.
  - C. Sudden increase in the resource demand.
  - D. A task that the team undertakes to experiment on a hypothesis or a new technology.
21. Fill in the blanks for the following Agile principle.  
Build projects around \_\_\_\_\_ individuals. Give them the environment and \_\_\_\_\_ they need and \_\_\_\_\_ them to get the job done.
- A. cross-functional, training, trust
  - B. empowered, support, believe
  - C. self-motivated, support, believe
  - D. motivated, morale boost, trust
22. An XP team realizes that a story is more complex than estimated earlier and so it cannot be completed in the current iteration. Which option should the team exercise?
- A. At the next daily stand-up, propose that the “definition of done” condition be relaxed to allow the partially completed story to look close to being completed.
  - B. Extend the iteration by 3–4 days, as you cannot let the team’s velocity go down.
  - C. Discard the code and put the story back to the backlog for future prioritization and implementation in a successive sprint.
  - D. Keep the code commented so it does not do any harm and tell the customer you will pick up and complete in the next iteration.

23. Some teams use a hardening sprint ahead of a release to:
- Train the operations team so that they can support the product post-release.
  - Complete some of the final tasks related to productionizing of the code.
  - Perform acceptance testing for all the previous sprints that were part of the release.
  - Ask all programmers to check-in all the code in version control.
24. An Agile team is using relative sizing to estimate for stories on the backlog. What are the most common units of estimates used?
- Days / weeks / months
  - Story points
  - Ideal days
  - Either B or C
25. Bill has worked hard over the last few days and finds that the build is broken because Richard has checked in code without properly unit testing it. It will mean that Bill will have to wait until Richard comes back and fixes the issue. Bill is furious at Richard and he makes statements like, "I know Richard. He is always careless and doesn't bother how others get affected by his actions."
- Which stage of conflict do you think is reflected in Bill's language?
- Level 1: Problem to Solve
  - Level 2: Disagreement
  - Level 3: Contest
  - Level 5: World War
26. The two highest levels of conflict are Level 4: Crusade where there is hardly any direct speaking terms and Level 5: World war where the conflict is escalated to a level that is beyond repair and resolutions.
- As a manager encountering the situation, which are the best approaches you will follow to resolve conflicts?
- For Level 4: use shuttle diplomacy until the intensity of the conflict is lowered and team members can be brought into a table discussion. For Level 5: separate the team members such that they do not cause harm to each other or to the environment.
  - For Level 4: use problem solving to get to the bottom of the issue. For Level 5: ask one party to compromise on a stand that they have rigidly held.
  - For level 4: separate the team members such that they do not cause harm to each other or to the environment. For Level 5: bring in a third party and take the two team members to battle out in the court.
  - For Level 4: remind the two members that they need to collaborate and reach consensus, even if that means that they will have to sacrifice. For Level 5: avoid the situation since nothing can be done about it.

27. What is the formula for Risk severity? And how do you expect risks to change during a project?
- Risk severity = Risk probability + Risk impact. We expect risks to be highest at the beginning and decrease over time.
  - Risk severity = Risk probability x Risk impact. We expect risks to be highest at the beginning and decrease over time.
  - Risk severity = Risk probability x Risk impact. We expect risks to be lowest at the beginning and increase over time.
  - Risk severity = Risk probability x Risk impact. We expect risks to be highest at the beginning and remain static until the project is over.
28. The product owner is not able to commit enough time for the Scrum team. He is however, very supportive and leading the cause for the project. Who could be the best choice of a proxy user?
- Technical lead of the project who knows the ins and outs of the product.
  - UX designer because they have close proximity to the business and knows how the UI is expected to behave.
  - A business analyst reporting to the product owner since she will be able to articulate the user stories in plain business language that is free from technical jargon.
  - A customer care representative who interacts with the real users on a daily basis and resolves support tickets.
29. Which is the odd line out of the following?
- Responding to change over following a plan.
  - Customer collaboration over contract negotiation.
  - Customer interactions over processes and tools.
  - Working software over comprehensive documentation.
30. A reflection workshop is also called:
- Sprint review
  - Sprint retrospective
  - Backlog grooming session
  - None of the above

31. Richard joins as an Agile coach and observes that there are a few Scrum teams working on a single product that is used by financial planners. The teams are struggling to arrive at a common “definition of done.” What should Richard do?
  - A. Richard should give each development team freedom to choose their definition of done. Reconcile differences only during the hardening sprint.
  - B. Richard should give each development team freedom to choose their definition of done, as far as there is convergence and common ground at the time of integration such that the product is potentially releasable.
  - C. Richard should ignore the situation. It’s too messy to get involved in day-to-day work of the development.
  - D. Richard should get hands-on, laying out the definition of done himself and teach all development teams how to follow them.
32. Agile teams use personas that are imaginary user roles to provide a real-life flavor of the users interacting with the system. While building a persona, which of the following relevant information should they include?
  - A. Age and gender
  - B. Educational and Professional background
  - C. A name and a picture
  - D. All of the above
33. Agile teams practice value-based delivery. While determining and delivering value, who are we targeting?
  - A. Users
  - B. Developers
  - C. Product owners
  - D. Testers
34. Alistair Cockburn has introduced the Crystal family of methodologies, which consists of Crystal clear, Crystal yellow, crystal red, crystal maroon. What are the core differences between them?
  - A. From left to right, they denote progressively increasing complexity of projects.
  - B. From left to right, they denote progressively increasing criticality of projects.
  - C. From left to right, they denote progressively increasing size of teams working on projects.
  - D. All of the above.

35. A team hires you as an Agile coach to see if the team's efficiency could be enhanced and the velocity improved. What could be your recommendation to improve velocity?
- Have the team commit to fewer stories every sprint, so the probability of getting them completed in time are more.
  - Reduce the daily-stand-up meetings from 15 to 10 minutes.
  - Suggest bringing in the business representative to sit together with the development team.
  - Compare velocities of similar projects running in the same organization and present them to the team.
36. Barry joined as an Agile coach and he wants to improve the way the team conducts retrospective meetings. He states that there are 5 stages for effective retrospectives. They follow the sequence of:
- Set the Stage, Gather Data, Generating Insights, Decide What to Do, Wrap up.
  - Set the Stage, Generating Insights, Gather Data, Decide What to Do, Wrap up.
  - Set the Stage, Decide What to Do, Generating Insights, Gather Data, Wrap up.
  - Set the Stage, Gather Data, Decide What to Do, Generating Insights, Wrap up.
37. The Scrum team owns the sprint burndown chart. What is the primary significance of the chart?
- Use as a base for weekly status report for senior management.
  - An Agile team is characterized with information radiators on team walls. A sprint burndown chart is a relevant artifact for putting up on the team wall.
  - Team can view their daily progress and adapt based on the situation.
  - Keep other stakeholders at bay. Those who are interested in knowing the status can view the sprint burndown chart and not bother the development team.
38. The acronym TIMWOOD is used to describe the 7 wastes in Lean. The letters T, M and D stand for:
- Transport, Machine, Defects
  - Turnaround time, Motion, Defects
  - Transport, Machine, Deliberate
  - Transport, Motion, Defects

39. The Japanese words Muda, Kanban and Kaizen respectively mean:
- A. Waste, signboard, continuous improvement
  - B. Waste, billboard, continuous integration
  - C. Improvement, signboard, continuous removal of waste
  - D. None of these
40. A new team member Billy, fresh from college, joins the team and sees that at every workstation two developers are sitting next to each other. One of them is typing code and the other is looking on and giving some suggestions at times. Billy thinks that privacy could be lost and discusses this with his mentor. His mentor explains that the team is following XP methodology and are involved in \_\_\_\_\_.
- A. Sharing best practices sitting next to each other.
  - B. Pair programming.
  - C. One is coding and the other is deciding on test cases based on the code written.
  - D. Coaching session for coding skills.
41. The \_\_\_\_\_ is also called “the voice of the customer”?
- A. Development manager
  - B. Scrum Master
  - C. Product Owner
  - D. Sponsor
42. An Agile team is in its formative stage. One of the first few things that they want to do is determine the length of an iteration. Which is the most important factor to make this decision?
- A. Determine the estimate of the longest story, convert from story points to man-days and then choose the iteration size to accommodate that.
  - B. Look up historical data from other projects and teams.
  - C. Discuss with project stakeholders on how long they can go without demonstrating progress or giving feedback.
  - D. Follow guidelines from the Scrum Master since he is the most seasoned player in the team and has had a varied experience running Scrum teams elsewhere.
43. The commitments made by the product owner to the team include the following EXCEPT?
- A. Bring a prioritized list of features from the backlog to the planning meeting.
  - B. Clarify requirements as and when asked by the team.
  - C. Resist any temptation of changing scope midway through a sprint.
  - D. Mandatorily attend every daily-standup meeting.

44. The product owner creates an elevator speech to articulate the vision of a product to the Agile team and its stakeholders. The elevator speech is expected to contain all of the following attributes EXCEPT:
- Who is the target customer?
  - What is the key benefit that the customer will get by using the product?
  - Location and the technology where the product will be developed and tested.
  - What differentiates it from its competitors?
45. All the following are Agile methodologies EXCEPT:
- Test-driven development
  - Feature-driven development
  - Extreme Programming
  - Scrumban
46. Who is responsible for prioritization of stories, epics and features in the product backlog?
- Product owner
  - Product owner with inputs gathered from the team
  - ScrumMaster
  - Development team
47. The Scrum team has committed for a sprint goal. Midway during the sprint, the team discovers that there are some new tasks that need to be done before the committed stories are completed. However, given the time constraint, the team feels it cannot be done. What are the things the team should do now?
- Abandon the sprint.
  - Bring it up during the daily-standup and then discuss proactively with the product owner.
  - Hope for the best and let the stakeholders know during the sprint review that some stories were not completed.
  - Find someone to blame.
48. The marketing team is looking for firm commitments from an Agile team based on the estimates that came out of the Affinity estimation session held by the team. What could possibly be wrong in that approach?
- Affinity estimation is a very quick estimation technique used for release planning and generally precision of estimates is not the goal.
  - The marketing team should direct all their requirements to the product owner and not approach the Agile team directly.
  - Agile estimates are relative measure of size. They should not be treated as commitments.
  - A and C.

49. At the time of release planning, an epic was estimated to have 13 story points. However, during iteration planning, when the epic was broken down into stories and tasks, the sum of the estimates came to about 15 story points. Choose the most appropriate option below.
- A. This is likely to happen as the estimates don't necessarily add up.
  - B. This is likely to happen as the estimates are done by different people at different times.
  - C. This is likely to happen as the estimates are less accurate at a release level.
  - D. This is a mistake, as it appears that somewhere there was a scope creep, that is, addition of 2 story points.
50. All the following could belong to the definition of done of a team EXCEPT:
- A. Code has been checked into version control.
  - B. Code has passed through the integration test cases and regression suite.
  - C. Acceptance test cases have passed.
  - D. Daily Scrum meetings have been attended.
51. An Agile team is coming together for the first time. They have no prior experience working together, but would like to estimate an initial velocity to target. All the following options are possible EXCEPT:
- A. Use historical values as the working environment and the technology used is the same as a previous project.
  - B. Run an iteration and observe the velocity.
  - C. Make a forecast by breaking stories into tasks and see what fits.
  - D. Use the velocity from any arbitrary project team. The level of accuracy does not matter since the team is new.
52. During a series of conflicts, you get to hear one party blaming the other by generalizing statements like, "They are always late - no surprises in that," "He has forgotten to check-in the file and again! Careless as ever!" Referring to Lea's conflict model, which stage do you think the team members are in?
- A. Problem to solve.
  - B. Arbitration.
  - C. Crusade.
  - D. World war.
53. Which of the following statements is not true?
- A. Higher the IRR the better, higher the BCR the better.
  - B. Higher the IRR the better, lower the payback period the better.
  - C. Higher the NPV the better, higher the IRR the better.
  - D. Higher the NPV the better, higher the payback period the better.

54. Leaving low-priority requirements at a high level, but sufficiently detailing out the high priority (and immediate) ones is called \_\_\_\_\_.  
A. Incremental development.  
B. Progressive elaboration.  
C. Version control.  
D. Continuous improvement.
55. Retrospectives can be held:  
A. After an iteration.  
B. After a release.  
C. After an unexpected and a significant event in the project.  
D. Any of the above.
56. What does the acronym MMF stand for?  
A. Maximum Marketable Feature  
B. Minimal Marketable Feature  
C. Maximum Measurable Feature  
D. Must-have and Marketable Function
57. Which of the following do you NOT expect to see on an information radiator for an Agile team?  
A. Gantt chart  
B. Task board  
C. Burnup chart  
D. Velocity trends
58. For an emergency reason Richard, the product owner could not make it to the sprint planning meeting. Who do you think could be in a position to play his role for the time being?  
A. The self-organized team.  
B. The development manager.  
C. The Scrum Master.  
D. The CEO who is closely aligned to the project.
59. Which of the following statements is false?  
A. Agile projects do just-in-time planning.  
B. Agile projects balance progress and flexibility.  
C. Agile projects do not require a PMO.  
D. Agile projects value collaboration over documentation.

60. Team A has a velocity of 20 story points and Team B has 40 story points over a 3-week iteration. What does this mean?
- Team B is twice more efficient than Team A.
  - Team B has double the capacity (team size) than Team A.
  - Team B is more mature, uses sophisticated tools and achieves more in the same time.
  - Nothing. Velocity of two teams cannot be compared.
61. The three levels of active listening are:
- Level I - Internal Listening, Level II - Focused Listening, Level III - Global Listening.
  - Level I - Focused Listening, Level II - Internal Listening, Level III - Global Listening.
  - Level I - Internal Listening, Level II - Global Listening, Level III - Focused Listening.
  - Varies based on the circumstances.
62. An Agile team has an average velocity of 25. During a sprint planning session, they have come up with estimates for a list of stories in priority order as follows:
- Story 1 estimate of 12 story points  
Story 2 estimate of 3 story points  
Story 3 estimate of 8 story points  
Story 4 estimate of 5 story points  
Story 5 estimate of 2 story points  
Story 6 estimate of 1 story points  
Story 7 estimate of 1 story points
- What is the choice that the team makes?
- Choose stories 6, 7, 5, 2, 4 and split the larger ones 1 and 3 so that maximum number of stories can be accommodated.
  - A team's velocity is subject to change. Also estimates are not absolute.  
Choose all stories and complete whatever is possible. After all, customer will be pleasantly surprised if the team overachieves.
  - Club stories that are dependent on each other and deliver them together.
  - Choose stories 1, 2, 3, 5 – the highest priority ones that add up to the team's velocity.

63. After the story writing workshop the team has come up with a set of 80 story cards that need to be very quickly estimated such that the release plan can be built. The product owner is interested in getting this completed in less than 2 hours. Which estimation technique is best suited for this purpose?
- Work breakdown structure or bottom-up estimation.
  - Planning Poker.
  - Affinity estimation.
  - Delphi.
64. The DEEP acronym is used to describe the characteristics of a product backlog. The acronym stands for
- Detailed Appropriately, Estimated, Emergent, Prioritized.
  - Detailed Appropriately, Economic, Emergent, Prioritized.
  - Defined properly, Estimated, Emergent, Prioritized.
  - Defined properly, Estimated, Enlisted, Probabilistic.
65. Passing of acceptance test cases is an example of:
- Definition of ready
  - Definition of done
  - Collective ownership
  - Teamwork
66. The INVEST acronym is used to describe the characteristics of user stories. The letters I, V and S in the acronym stands for:
- Interesting, Verifiable, Small
  - Independent, Validatable, Small
  - Independent, Valuable, Specific
  - None of the above
67. Agile releases could be one of:
- Feature-driven or Date-Driven.
  - Date-driven or Priority-driven.
  - Team-driven or feature-driven.
  - Both release dates and constituent features are variable and negotiated on the fly.

68. Sarah is joining an Agile team. On the first day she observes that the team has a task board that contains lots of sticky notes denoting tasks in various stages of progress. She is confused about the small numbers written next to column headers of the task board and asks her manager Jane about their significance. Jane explains that the numbers depict:
- Velocity for each column in the task board.
  - Number of resources assigned for each column in the task board.
  - WIP limit.
  - Maximum number of escaped defects allowed per column.
69. XP programmers are required to continuously submit their code into the code repository and run a 10-minute build to assess whether anything has broken or not as a result of the newly made changes. This practice is called:
- Continuous integration.
  - Continuous improvement.
  - Version control.
  - Informative team space.
70. The Lean team has understood the benefits of creating value stream maps. After a bit of effort they prepared a value stream map and proceeds to calculate the cycle time for each step and the total lead time to handover value to the business user. What is the most important next step?
- Continuously improve on process efficiencies.
  - Amplify learning.
  - Identify non-value added activities and eliminate them.
  - Organize daily stand-up meetings.
71. The project steering board is having a meeting to evaluate and select one of the two projects being presented by their sponsors.
- Project A has IRR of 6% and requires an investment of 100K USD
- Project B has IRR of 7.5% and requires an investment of 150K USD
- Which project should be chosen and what is the opportunity cost?
- Project A, 100K USD
  - Project A, 150K USD
  - Project B, 100K USD
  - Project B, 150K USD

72. The \_\_\_\_\_ is best placed to author user stories.
- Development team since they know the technical intricacies of the features.
  - Customer or business representative because they can articulate business requirements in plain language (no technical jargon).
  - The project manager because he knows what it takes to balance scope, time and cost.
  - The tester since the acceptance test cases needs to be written at the back of the story card.
73. When is it okay for a team to extend an iteration by 4–5 days to complete what they promised?
- Use a groupdecision-making technique and agree at a daily stand-up meeting.
  - Once the Scrum Master approves.
  - Iteration length should not be changed.
  - Instead of extending the iteration, think of ‘crashing’ the iteration by putting in more resources or requesting overtime and weekend work.
74. As per Alistair Cockburn, Shu-Ha-Ri is a learning technique that is applied to software development methodologies. The words Shu Ha Ri means:
- Follow the rule, break the rule and be the rule respectively.
  - Break the rule, follow the rule and be the rule respectively.
  - Be the rule, break the rule and follow the rule respectively.
  - Follow the rule, be the rule and break the rule respectively.
75. 5 Why's is an example of a/an:
- Estimation technique
  - Retrospective technique
  - Conflict resolution technique
  - Facilitation technique
76. In the situational leadership model, the different leadership styles in ascending order of team maturity are as follows:
- Selling, Telling, Supporting, Delegating
  - Telling, Delegating, Participating, Selling
  - Delegating, Directing, Coaching, Supporting
  - Telling, Selling, Participating, Delegating

77. Value stream mapping is a technique that has its origin in Lean. Why do we use value stream mapping?
- Without a visualized workflow, conversations with the customers are difficult.
  - To identify and eliminate wastes in the process.
  - To charter the future roadmap.
  - To energize the development team.
78. Active listening consists of all the following EXCEPT:
- Paying attention to the nonverbal signs of the speaker.
  - Providing feedback on what is understood.
  - Interrupting the speaker to express your personal views and perspectives.
  - Deferring judgment.
79. User stories have enough requirements that serve as a reminder to the team and they can converse to drill down to the specifics during coding. How do the developers confirm that the requirement is met?
- Discuss with the users, write down the acceptance test cases behind the card. and execute them.
  - There is always more chances, so the team can make assumptions, demo them. and incorporate feedback later.
  - Developers expect the product owner to maintain a checklist separately.
  - Since the user stories are not sufficient, developers need to augment with comprehensive documentation behind the scenes.
80. User stories should be valuable to \_\_\_\_\_.
- The development team
  - The Agile coach
  - The organization
  - The user or customer
81. The different stages of Test-Driven Development are
- 1) Red - when the test cases fail.
  - 2) Green - when the test cases succeed with barely minimum code.
  - 3) Refactor - when the code is evolved by considering design patterns, code quality etc.
- What is the right sequence?
- Green, Red, Refactor.
  - Red, Refactor, Green.
  - Red, Green, Refactor.
  - None of the above as the blue stage is missing.

82. XP teams conduct spike tasks. The product owner realizes that there is no direct value to the customer in conducting such tasks, but yet permits them in the iteration backlog because:
- Through spikes teams are able to gain knowledge of an unknown technology.
  - Through spikes teams are able to prove a hypothesis.
  - Through spikes teams are able to mitigate a risk.
  - All of the above.
83. With respect to size, which is the correct order?
- Epic, theme, story, task.
  - Story, feature, theme, subtask.
  - Story, task, subtask, feature.
  - Epic, feature, subtask, theme.
84. The Scrum Master in a team plays the following roles EXCEPT:
- Servant leader
  - Shepherd
  - Line manager
  - Bulldozer of impediments
85. In Scrum who takes the responsibility to prioritize stories?
- Scrum Master.
  - Product owner with the help of the whole team.
  - Exclusively product owner.
  - Whoever is knowledgeable about the stories.
86. The product owner is looking at the backlog, shuffling priorities, adding more epics and features, and removing some that are no longer necessary. The task he is doing is called:
- Backlog grooming
  - Product roadmap creation
  - Project charter creation
  - Backlog review
87. An Agile team consists of the following attributes:
- Self-organized
  - Generalized specialist
  - Multilingual
  - A and B

88. \_\_\_\_\_ is a unit of estimates for user stories.
- A. Velocity
  - B. Weeks
  - C. Story points
  - D. Work breakdown structure
89. A persona is:
- A. A real customer or user.
  - B. Imaginary representation of a user role.
  - C. Any stakeholder who can provide system requirements.
  - D. A business analyst or a domain specialist.
90. Regarding ideal days and calendar days, all of the following statements are correct EXCEPT:
- A. Calendar days are the usual days at work and includes interruptions like breaks and meetings.
  - B. Ideal days are the days of work minus the interruptions like breaks and meetings.
  - C. Calendar days are valid units of estimate in Agile, since the definition of ideal days varies from one developer to another.
  - D. Ideal days are valid units of estimate in Agile, since the worth of work done on a calendar day varies from one developer to another.
91. Spot the statement that is incorrect as per the Agile Manifesto:
- A. Individuals and interactions over processes and tools
  - B. Customer collaboration over vendor management
  - C. Working software over comprehensive documentation
  - D. Responding to change over following a plan
92. Which of the following could be the biggest cause for failure in an Agile project?
- A. Lack of availability of the customer to collaborate closely with the team.
  - B. A distributed team.
  - C. Some team members who are not yet well versed in devops practices.
  - D. Resources that have fractional allocation to multiple projects at the same time.
93. You get to see all of the following practices in a, XP team except:
- A. Continuous build and integration.
  - B. Checking in code into a single repository.
  - C. Onsite customer facilitating daily stand-up meetings.
  - D. Test-driven development.

94. Which of the following statements regarding technical debt is false?
- The quantum of technical debt can be measured by counting the number of days of effort required to address it.
  - Technical debt can be introduced at any time, during initial development, during maintenance and enhancements.
  - XP teams continuously refactor code to reduce technical debt.
  - All of the above are true.
95. PMI®'s code of ethics applies to:
- PMI® members.
  - PMI® certification seekers.
  - PMI® volunteers and chapter members.
  - A, B and C.
96. When should individual development team members signup for implementing a particular story?
- At the time of estimation, when they are submitting the estimates.
  - Once the sprint goal has been agreed at the end of the planning meeting.
  - During the daily stand-up meeting.
  - At the last responsible moment and based on capacity of the team. All items are owned by the entire development team.
97. The Agile team has started working on an iteration. On the third day, a business representative comes up to you and requests another feature to be included in the same iteration. What should the Agile team do?
- Accommodate the feature since otherwise the business representative will not accept the iteration results.
  - Accommodate the feature since otherwise the business representative will escalate that the team is not adaptable to change.
  - Accommodate the feature by putting it into the product backlog and asking the product owner to check its ROI relative to other stories in the backlog.
  - Accommodate the feature as it is a small change and self-organized team knows how to manage last-minute requirements.

98. An Agile team is working on the software for life-saving medical equipment. The product has already been in the market for about 2 months, when the product team detects a defect in the software that could be fatal to the patients being monitored. Fixing the product and rolling out the solution to all the clients who have purchased the product will be very costly and affect the balance sheets badly. What is the most important thing that the company should do?
- A. Wait and watch, as the clients have not discovered the defect and have not been affected.
  - B. Since it is software for a life-saving medical apparatus, immediately warn all clients and stop their use.
  - C. Immediately sanction a project to fix the software and roll out to all clients. This is estimated to take 4–5 months.
  - D. Wait for the next planned release that is 6 months away and prioritize this production defect fix over anything else.
99. To eliminate duplication in code, the word DRY is used. It stands for \_\_\_\_\_:
- A. Don't repeat yourself.
  - B. Don't refactor your code.
  - C. Do review your product.
  - D. None of the above.
100. Agile teams do emergent architecture and design. At the end of every iteration, they deliver \_\_\_\_\_.
- A. Shippable product increment.
  - B. Vertical slice of the cake.
  - C. A and B.
  - D. Horizontal slice of the cake.
101. An Agile team is currently reviewing the proposals submitted by prospective vendors. The outcome of the review is to shortlist and award the contract to the vendor that is considered best to work on the project. Harry, a member of the team comes to know that BigFive Consulting Company, which is owned by his relative, has also bid for the project. In this situation Harry should:
- A. Keep it to himself and patiently see what goes on.
  - B. Keep it to himself and recommend the rest of the team to go with BigFive Consulting Company since you know them all and trust their capabilities.
  - C. Disclose it and stay out of the seller selection process.
  - D. Pass on some insider information to BigFive, so that they are at an advantage during the negotiation process.

102. Which of the following is not an attribute of a product backlog?
- A. Prioritized
  - B. Large
  - C. Detailed appropriately
  - D. Measurable
103. The Agile team is sitting together in a room. Harry asks a quick question on the build configuration and Sally responds where Harry could find it. In between, Richard, who was busy writing code, overhears and cautions that the configuration file at that location has an issue and Harry should use the one at an alternate location. Harry was able to get what he needed in no time and continued with his tasks. This type of communication between co-located teams is called?
- A. Verbal communication.
  - B. Osmotic communication.
  - C. Information radiators.
  - D. Informal communication.
104. On the back of the story card the acceptance test cases are found. Who specifies the acceptance test cases?
- A. Customer
  - B. The whole team
  - C. Test manager
  - D. Scrum Master
105. Which of the following represents the richest and most effective mode of communication in a team?
- A. Recorded webinar
  - B. Video conferencing
  - C. Audio conferencing
  - D. Face-to-face meeting accompanied by a whiteboard session.
106. To launch a product in a foreign country, one needs to pay a facilitation fee required by the municipal department to get the required no objection certificate. Going by PMI®'s code of ethics and professional conduct, one should:
- A. Not pay the fee since it amounts to bribe and violates the code.
  - B. Pay the fee.
  - C. Check with the legal team whether the fee is justifiable and ethical and then decide.
  - D. Revoke the decision to launch the product in a country that asks for such a fee.

107. Harry and Sally have been fighting for a while on the proposed design options. Harry thinks Sally's option will be very difficult to implement and will cost lots of money upfront. Sally thinks that isn't the case as some basic components could be reused from the existing code. She also thinks that Harry is stubborn and refusing to listen to her justifications. Both approaches ask you to resolve the conflict. You think that both Harry and Sally have positive intent, so you ask Sally to present a small prototype that demonstrates her design. You also ask Harry to be patient and be attentive to what Sally demonstrates and all constructive feedback should be registered. The conflict resolution technique you followed was:
- A. Problem Solving
  - B. Avoiding
  - C. Compromising
  - D. Forcing
108. In a planning poker session, the cards used to provide estimates are numbered as:
- A. T-shirt sizes S, M, L, XL, XXL, etc.
  - B. Odd number 1, 3, 5, 7, 9, 11, etc.
  - C. Fibonacci series like 1, 2, 3, 5, 8, 13, 21, 34, etc.
  - D. Arithmetic progression like 5, 10, 15, 20, 25, 30, etc.
109. Richard has recently joined company ABC as a senior designer. While working on the project, he faintly recollects that he had seen such a design solution in his ex-company. So he calls up his old buddy and asks him to email the design document from his previous company to his personal id. Is this action correct?
- A. Yes, since Richard is reusing the design that saves time and cost.
  - B. Yes, since Richard is showing his prowess in networking.
  - C. No, since this is a violation of intellectual rights and unethical.
  - D. No, since he should have not still been speaking terms with colleagues in his ex-company.
110. Which of the following activities does a servant leader NOT do?
- A. Remove impediments.
  - B. Reiterate the vision of the project.
  - C. Come up with a detailed project plan at the end of the planning poker session.
  - D. Help in logistics and facilitation.

111. A team determines its velocity to be 30 story points in a 3-week iteration. Given that there are 300 stories in the backlog, how long will the project take to complete?
- A. 30 weeks.
  - B. 30 weeks provided the scope remains unchanged during this period.
  - C. 30 weeks provided the scope doesn't change and the estimates don't change.
  - D. 30 weeks provided the scope, estimates and the velocity of the same remains constant.
112. Richard is tasked with evaluating a few proposal received from vendors. One of the vendors met Richard over lunch to explain their value proposition and also handed over a small token of appreciation for Richard's time. Going by the gift and entertainments policy in the company, Richard should:
- A. Deny the gift from the vendor and tell him that his proposal will be rejected for trying to bribe him.
  - B. Accept the gift because it is not expensive.
  - C. Accept the gift as it is not inappropriate, disclose it in the organization and continue to fairly assess rest of the proposals.
  - D. Call up his manager before leaving the meeting to let him decide whether the gift should be accepted or denied.
113. Which of the following conflict resolution techniques results in a lose-lose outcome?
- A. Problem Solving
  - B. Avoiding
  - C. Compromising
  - D. Forcing
114. Which of the following conflict resolution technique results in a win-lose outcome?
- A. Problem Solving
  - B. Avoiding
  - C. Compromising
  - D. Forcing

115. A team consumes the data produced by the software written by another team. The ‘producer’ team will be ready on Day 8, but to be on the safe side, the ‘receiver’ team inserts a buffer of 3 days and plans a start on Day 11. These 3 days between systems are called?
- A. Management reserve
  - B. Feeding buffer
  - C. Backup
  - D. Dependency adjustments
116. Planning poker technique is NOT:
- A. An estimation technique
  - B. A group decision-making technique
  - C. A variation of the Wideband Delphi technique
  - D. A sprint retrospective technique
117. The Agile team is during the second last stage of the retrospective meeting where the action items are being decided. Who will take ownership of the action items?
- A. The whole team
  - B. The product owner
  - C. The Scrum Master
  - D. Whoever raised the topic in the first place
118. In MoSCoW prioritization technique, ‘S’ and ‘C’ standfor:
- A. Should have, could have
  - B. Shouldn’t have, could have
  - C. Should have, couldn’t have
  - D. Shouldn’t have, couldn’t have
119. An Agile coach is tasked on suggesting ways to enhance the velocity of the team. Which of the following is not an option he states?
- A. Remove non-value added tasks from the team.
  - B. Refactor code and remove technical debt.
  - C. Ask the customer to stay aloof and not interfere with the team at work.
  - D. Invest behind devops tools for version control, continuous build and integration.
120. Which of the following will not help a distributed team?
- A. A kickoff meeting at the beginning of the project.
  - B. Sensitivity and awareness of cultural diversity of the team in multiple locations.
  - C. Rotations of the team members if travel budget permits.
  - D. Making teams sit in groups of specialism, like the BA’s together, developers together, testers together.

# Mock Exam II

1. \_\_\_\_\_ is the minimum set of features in a product that the users can start using and get benefit without waiting for more.
  - A. Delighters
  - B. Story maps
  - C. Walking skeleton
  - D. MMF
2. During value-based prioritization of user stories, Wiegers' technique considers all the following aspects except
  - A. Cost
  - B. Risk
  - C. Value
  - D. Testability
3. Which of the following is part of Agile Manifesto?
  - A. Contract negotiation over following a plan
  - B. Working software over comprehensive documentation
  - C. Process and tools over individuals and interactions
  - D. Responding to change over processes and tools
4. In the 100-point method for prioritization of user stories:
  - A. Each participant is given a set of 100 stories to prioritize.
  - B. Participants are given 100 minutes to sort out the prioritization of a list of stories.
  - C. Participants are given 100 points that they can randomly allocate to stories based on their perceived importance to them.
  - D. Each participant is asked to pick the 4 most important stories and asked to divide 100 points between them.

5. Which of the following best describes the value of all the future cash inflow and outflow in today's value by factoring in the rate of interest?
  - A. Net Present Value
  - B. Discounted value
  - C. Payback value
  - D. Future value
6. As per the Lean philosophy all of the following are categorized as wastes except:
  - A. Defects
  - B. Transport
  - C. Overprocessing
  - D. Communication that lacks richness
7. A senior executive appoints a product owner for an Agile team. He explains that the key responsibility of the product owner is to:
  - A. Make sure that the Agile team is operating efficiently and effectively.
  - B. ROI is maximized during every iteration.
  - C. Team has a sustainable pace and is not getting burned out.
  - D. The number of escaped defects reaching the customer is as minimal as possible.
8. While analyzing a risk, the team came up with the following figure. Probability = 65%, Impact = \$1000\$, Frequency = once in a week. What is the severity of this risk?
  - A. \$65
  - B. \$650
  - C. 0.65
  - D. 0.00065
9. As per Pareto's 80/20 principle:
  - A. 80% of the defects are removed in the last 20% of the time left on the project.
  - B. 80% of the users use 20% of the features in the product.
  - C. 80% of the system errors can be removed by resolving 20% of the defects.
  - D. 80% of the work in the team is done by 20% of the team members.

10. A servant leader:
- A. Is aware of his and his team member's emotions and controls them.
  - B. Is an expert in people management and lays down ground rules that the team members must obey.
  - C. Is attentive to the needs of the team and helps to remove impediments.
  - D. Monitors and controls affairs of the project by using a lot of metrics that the team needs to capture and plot on a daily basis.
11. What is the Internal Rate of Return (IRR)?
- A. It is a metric that is used to calculate the amount of an investment.
  - B. It is a metric that is used to calculate the profitability of an investment.
  - C. It is a metric that is used to determine whether the source of return is from internal or external sources.
  - D. It is a metric that is used to compare prevailing interest rates.
12. What is the purpose of a risk burndown graph?
- A. Track risk impact over iterations.
  - B. Track risk probability over iterations.
  - C. Track risk severity over iterations.
  - D. Track risk frequency over iterations.
13. Stakeholder management is important for an Agile team because:
- A. Having stakeholders that engage and participate in the project is a critical success factor.
  - B. Without that there is likely going to be scope creep.
  - C. They need to be plotted on a power-interest grid.
  - D. They need to be plotted on an engagement assessment matrix.
14. Which of the following practices if followed persistently and continuously increases the quality of the product?
- A. Information radiators
  - B. Verification and validation
  - C. Affinity estimation technique
  - D. BART analysis

15. Sidky has defined SAMI (Sidky Agile Maturity index) that has five evolutionary stages of Agile maturity in an organization. In the right sequence, they are as follows:
- Collaborative, engaging, integrated, adaptive, encompassing.
  - Collaborative, evolutionary, integrated, adaptive, encompassing.
  - Integrated, collaborative, evolutionary, adaptive, encompassing.
  - Collaborative, evolutionary, integrated, encompassing, adaptive.
16. Choose the most correct response:
- Two projects A and B have IRR -5% and -12% respectively. While catering for a budget cut, Project B is likely to get the axe and not Project A.
  - IRR is the interest rate in which NPV of cash flows is equal to zero.
  - ROI of all projects is higher if Agile is used instead of waterfall.
  - Both A and B.
17. An Agile team is busy working with the product owner to shuffle the product backlog items based on value and risk severities that were identified so far. The team provides the inputs, but the product owner has the last say on the decisions made and keeps the accountability. The resulting list is called \_\_\_\_\_ :
- Risk register
  - A DEEP backlog
  - Risk-adjusted product backlog
  - Iteration backlog
18. What are the three parameters of the Agile triangle?
- Value, quality, constraints
  - Cost, time, scope
  - Value, cost, customer satisfaction
  - Value, cost, quality
19. On the branch of a decision tree, you see a decision has a 60% chance of earning a \$1000 profit, but also a 40% chance of a \$2000 loss. What is the EMV of this branch on the decision tree?
- \$200 (loss)
  - \$600 (profit)
  - \$800 (loss)
  - None of the above

20. The Agile team has just completed the sprint review and the feedback on the product increment was mostly positive, but a few new features have been called out. What do you think the team should do first after the review meeting?
- Start implementation for the new features requested.
  - Update the backlog and estimate for the new features requested.
  - Complete stories that were left out in the sprint.
  - Spend time to reflect on currently used processes and how they can be improved in the retrospective meeting.
21. Bill is a Java programmer and joins an Agile team that uses XP. He is new to Agile, so he tries to find out the way of working that is prevalent on the team. He is explained that the code is integrated:
- Finally, before the planned release date.
  - Many times a day, almost after every check-in.
  - Every Monday, Wednesday and Friday.
  - Once in an iteration when it has been reviewed and unit tested.
22. A product owner decides that the amount of risks in the project has escalated so much that it does not seem feasible to continue with the project. There is no visibility of profitability in sight. Termination of such a project is which kind of risk response?
- Avoid
  - Mitigate
  - Transfer
  - Accept
23. A user story reads: As a borrower of a book from the library, I would prefer to search a book quickly.
- The user story is not good because:
- It doesn't seem to be specific or valuable from the borrower's standpoint.
  - It does not quantify what 'quickly' means. Without a response time it's difficult to measure.
  - It is not estimable since the acceptance criteria is not specified.
  - It is too small and not detailed enough.

24. The 4th stage of a retrospective is “Decide what to do.” As a part of this stage:
- Action items are added to the product backlog and the product owner is asked to determine the ROI and priority.
  - The Scrum Master takes notes and allocates them to whoever is best skilled to carry out the action items.
  - The retrospective leader starts the “Helped, Hindered, Hypothesis” activity to determine if the retrospective itself was useful.
  - Team members self-volunteer to take specific actions from the next sprint itself.
25. Which of the following is the best Agile team?
- An Agile team with specialists.
  - An Agile team that avoids conflicts.
  - An Agile team that collaborates and self-organizes continuously.
  - An Agile team that has no one to blame if things go wrong.
26. During sprint execution, Wilson notices that a story was missed and needs to be implemented. What would he do?
- Quickly estimate, design, and complete the implementation, even if that means working overtime.
  - Ask the product owner to add the story to the product backlog for future prioritization and planning.
  - Pick up the item during the retrospective to determine the root cause of why the item was missed during the planning stage.
  - Extend the iteration deadline to accommodate the missed story.
27. By maintaining a constant iteration length, the team:
- Establishes an operating rhythm.
  - Creates a predictive delivery schedule where the scope is variable.
  - Allows the team to measure a trend of their velocity, thereby improving future projections.
  - All of the above.
28. During an iteration planning meeting, the product owner has just read out a story and provided some initial set of clarifications. The team is now going to use planning poker to estimate the story. The estimates produced in round one looks like 1, 2, 3, 2 and 8. What should happen now?
- Go with 2 since maximum people voted for it.
  - Take the average of the 5 estimates.
  - Take the worst case 8 as the estimate.
  - Have the team members who voted for 1 and 8 explain their rationale and repeat the voting round.

29. One of the core practices in XP is ‘Small releases’. Following are the advantages except:
- Deliver value early and quickly.
  - Mitigate risks of a ‘big-bang’ integration.
  - Adapt to changes incrementally.
  - Limit work in progress.
30. Kaizen is a Lean principle. The literal meaning of the Japanese word Kaizen is:
- Continuous integration
  - Continuous improvement
  - Frequent validation and verification
  - Billboard
31. Which of the following is the best definition of ‘definition of done’?
- A term defined when the project is completed and ready to be shipped to production.
  - A term defined by the team to determine when a user story is completed and ready for shipping to a customer.
  - A term defined to indicate acceptance of features by the end user.
  - A term defined to indicate when the Scrum team can take credit for their accomplishment and demo their deliverables.
32. Harry is a member of the Agile team. He is not a tester, but is interested to randomly check a few things about the system behavior without a lot of up-front planning. He begins with the charter and spends an hour or so trying different things that otherwise are not documented as user stories. Harry is conducting:
- Refactoring
  - Peer reviews
  - Acceptance testing
  - Exploratory testing
33. Which of the following statements is NOT true?
- It is cheaper and easier to terminate an Agile project midway than a waterfall-based project.
  - Agile project have a continuous focus on quality and planning.
  - Fixed price contracts are best suited in Agile.
  - There is no need of heavy change management processes to make and track changes in an Agile project.

34. A looselyengaged stakeholder requests John the Scrum Master, to show him the latest weekly status report to check the project health and the remaining amount of work in the project. Instead, John takes the stakeholder to the team wall where a few pertinent updates are posted continuously. To address the stakeholder's query, John specifically points out to
- Burndown chart
  - Sprint backlog
  - Task board
  - Velocity trend
35. A persona in an Agile project is:
- The proxy user who can provide requirement in absence of the product owner.
  - The person who provides acceptance of the product increment at the end of every iteration.
  - An imaginary representation of a user role to collect requirements from his or her perspective.
  - An onsite customer or anyone he/she assigns to be co-located with the team to provide clarifications on the fly.
36. A product roadmap contains all of the following except:
- Milestones of each release
  - Estimates of epics and themes
  - Contents of each releases
  - Depiction of value-driven delivery to the customer
37. During iteration planning stories are broken down into tasks that are entered into the iteration backlog. The tasks neither should not be too long nor too small to cause a tracking overhead. The thumb-rule of the length of each tasks is:
- 4-16 hours
  - 0-8 hours
  - One story point
  - Less than half a day
38. Which of the following is not a valid reason to update the product backlog?
- Change in the composition of the development team
  - Addition of new stories or risks
  - Change in priorities
  - Finding from previous sprints

39. Which is the fastest way to generate a lot of good quality requirements?
- A. Surveys
  - B. Facilitated workshops
  - C. Wisdom of crowd
  - D. Dot voting
40. Thumb voting is a group decision-making technique. Holding a thumb sideways indicates:
- A. Agreement
  - B. Disagreement
  - C. Neutrality
  - D. Strong support
41. At the end of the iteration, the team observes that they have completed only 50% of a story that was initially estimated for 12 story points. How many story points from this story would count toward the team's velocity?
- A. 0
  - B. 6
  - C. 12
  - D. 18
42. The customer has provided a bunch of requirements to the Agile team. But they are not sure what the collection of the requirements will finally look like. They asked the team if they could complete the entire design and give them a preview. Since up-front design is not encouraged, the Agile team instead produced a:
- A. Spike
  - B. Prototype
  - C. Persona
  - D. Definition of done
43. 'Remember the future' and 'Prune the product tree' are examples of \_\_\_\_\_ and used to \_\_\_\_\_.
- A. Estimation techniques, determine relative size of stories
  - B. Prioritization techniques, determine relative priorities of stories
  - C. Brainstorming techniques, solve problems
  - D. Innovation games, collect requirements

44. As per the estimation convergence / cone of uncertainty graph, estimates produced at the beginning of the project is called \_\_\_\_\_ while that near the end of the project are called \_\_\_\_\_.
- Budget, definitive
  - Ballpark, accurate
  - Rough order of magnitude, definitive
  - Rough order of magnitude, precise
45. During a 3-week iteration, the team completed 3 stories of 5 story points each, 2 stories of 12 story points each and completed 50% of two stories of 14 story points each. What is the team's velocity for this iteration?
- 39
  - 53
  - 67
  - None of the above
46. Apart from story points, which of the following could be used as unit of estimates for Agile?
- Calendar days
  - Coffee-cup sizes
  - Person months
  - Feature points
47. Jeremy, an Agile developer practices picks up a story from the sprint backlog. He begins with writing the automated unit tests before writing the code. Jeremy is following the practice of:
- Test-first development
  - Pair programming
  - Continuous integration
  - Feature-driven development
48. Which is the best definition of escaped defect?
- A defect that has simply escaped the attention of the tester.
  - A defect that should have been caught during exploratory testing.
  - A defect that went undetected and landed with the customer.
  - A defect that uncovers inefficiencies in the processes that needs to be rectified in the next iteration.

49. During iteration planning, the Agile team comes across a story that has an iteration length that is almost 90% of the velocity of the team. What is the best suggestion that you can give to the team in this situation?
- A. Reject the story since it is not small enough.
  - B. Split the story.
  - C. Extend the iteration length.
  - D. It is not advisable to compare estimates of a story with the team's velocity.
50. Use the Earned Value Management technique to determine the status of the project. The parameters are EV = \$4000, PV = \$5000 and AC = \$6000.
- A. Project is behind schedule and within budget.
  - B. Project is behind schedule and has cost overrun.
  - C. Project is ahead of schedule and within budget.
  - D. Project is ahead of schedule and has cost overrun.
51. For the same parameters given in the previous question (#50), what is the Schedule performance index (SPI)?
- A. 0.8
  - B. 0.66
  - C. 0.83
  - D. 1.25
52. Richard has been appointed as an Agile coach. The team is newly formed, so he has to explain a lot of Agile practices. He asks the team to practice Just-In-Time (JIT) planning as that is followed in Agile. What is the main reason that Richard cites to support the practice of JIT planning?
- A. A JIT plan is easier to create and maintain by the project manager.
  - B. JIT planning helps to accommodate changes far more easily instead of using change control principles.
  - C. JIT planning keeps the team on their toes and helps to constantly maintain focus among the team members.
  - D. JIT planning helps to keep stakeholders at bay, since they cannot see the overall picture.
53. The sponsor of an Agile project approaches the Scrum Master and asks him about the burn rate of the team per sprint. The team consists of 6 members each of whose billing rate is \$50 per hour. Assuming a 40 hour week and an iteration length of 2 weeks, what is the burn rate per sprint?
- A. \$36,000
  - B. \$20,000
  - C. \$30,000
  - D. \$24,000

54. An iteration started with 10 user stories to deliver. In the middle of iteration, a team member got sick and was not available to work. During a daily stand-up meeting, this was raised to the Scrum Master to seek advice as team thinks they cannot deliver all 10 user stories in the iteration. What should be the Scrum Master's advice to team?
- A. Work overtime to catch up on the lost time.
  - B. Fastrack if possible and extend the iteration.
  - C. Complete what can be done and the pending items should be put in the backlog for future iterations.
  - D. Reduce the scope of iteration from 10 user stories to 8 user stories and deliver as per the revised commitment.
55. A team's average velocity is 40 story points per 2-week iteration. There are 600 story points left in backlog. How many iterations are needed to complete the backlog?
- A. 30
  - B. 25
  - C. 20
  - D. 15
56. Who facilitates the sprint review?
- A. Sponsor
  - B. Product owner
  - C. Anyone from the self-organized team
  - D. Scrum Master
57. A team's average velocity is 45 story points per 2-week iteration. There are 490 story points left in backlog. How many weeks are needed to complete the backlog?
- A. 22
  - B. 20
  - C. 10
  - D. 11
58. Affinity estimating is the process of:
- A. Averaging the best and worst case estimates.
  - B. Checking that the stories in the same functional areas are of equivalent magnitude.
  - C. Checking that the stories of the same estimated size are of equivalent complexity.
  - D. Checking that the stories of the same estimated size are of the same technology.

59. What does the term “Done Done” mean in Agile projects?
- A. Unit testing completed, all tests passed.
  - B. Accepted by the sponsor.
  - C. Development done, ready for exploratory testing.
  - D. Ready for Production release and available to the end user.
60. All tasks that are to be completed before the final release of the product are called:
- A. The iteration backlog
  - B. The project backlog
  - C. The sprint backlog
  - D. The product backlog
61. As far as whole-team coaching is concerned, the Agile coach is most active during:
- A. Beginning of the sprint.
  - B. End of the sprint, during the retrospective.
  - C. In the middle of the sprint.
  - D. During sprint planning and retrospectives.
62. Which of the following is an Agile Manifesto value?
- A. Individuals and interactions over comprehensive documentation.
  - B. Working software over following a plan.
  - C. Customer collaboration over contract negotiation.
  - D. Working solutions over processes and tools.
63. Agile projects unleash creativity and innovation by:
- A. Engaging customers in frequent interactions and shared ownership.
  - B. Recognizing that individuals are the ultimate source of value and creating an environment where they can make a difference.
  - C. Making continuous flow of value our focus.
  - D. Group accountability for results and shared responsibility for team effectiveness.
64. Which of the following Agile Manifesto values deals with working closely with business or client?
- A. Individuals and interactions over processes and tools.
  - B. Working software over comprehensive documentation.
  - C. Customer collaboration over contract negotiation.
  - D. Responding to change over following a plan.

65. Which of the following Agile principles shows “Architecture and design emerge from a collaboration between teams”?
- The best architectures, requirements and designs emerge from self-organizing teams.
  - Business people and developers must work together daily throughout the project.
  - Build projects around motivated individuals. Give them the environment and support they need and trust them to get the job done.
  - Continuous attention to technical excellence and good design enhances agility.
66. Which of the following artifacts helps to bring product owner and team together collaboratively?
- Iteration Plan
  - The Product Backlog
  - The Iteration Backlog
  - Burndown chart
67. During iteration planning meeting, who is responsible to commit to deliver selected user stories in the iteration?
- Product Owner
  - Agile project manager
  - Scrum Master
  - The team
68. Which of the following is the least desirable practice in the case of a distributed team?
- Setting ground rules that a team in a particular time zone will have to extend their working hours to ensure overlap.
  - Use collaboration tools and videoconferencing whenever practical.
  - Have some time overlap between remote teams for handoffs and daily interactions.
  - Maintain common coding rules and tools for continuous integration.
69. What is expected from a traditional Project Manager on Agile projects?
- People management.
  - Responsible to pick up and estimate user stories for next iteration.
  - Direct team on how to work, track their progress.
  - None of the above.

70. What are the five XP values?
- Communication, feedback, simplicity, courage and respect
  - Commitment, openness, simplicity, courage and respect
  - Commitment, openness, focus, courage and respect
  - Commitment, feedback, simplicity, courage and respect
71. An Agile leader is planning the seating arrangement for the team. He makes sure that everyone can see each other. The benefit of such a seating arrangement is that:
- The leader will be able to exercise authority.
  - The leader is making optimum use of available space.
  - The team will be able to see what the other person is doing.
  - This helps in osmotic communication.
72. The three pillars of empirical process control are:
- Planning, Adaption, Retrospective
  - Inspection, Transparency, Adaptation
  - Planning, Inspection, Consistency
  - Collaboration, Value-driven, Kaizen
73. Which of the following is a valid prioritization method for an Agile project?
- Sidky maturity model
  - Monopoly money
  - Kanban
  - Value stream mapping
74. The daily stand-up meeting was scheduled to start at 9 a.m. However the team waited till 9:08 a.m. before all participants came into the meeting room. Morning greetings exchanged between the participants. By then the clock showed 9:12 a.m. There was an issue reported by a team members and team gets into brainstorming and spent another 10 minutes. Finally, the meeting was over at 9:37 a.m.

Calculate the process cycle efficiency of this process.

- 73%
- 57%
- 52%
- 68%

75. What should be the severity order of the following four risks in descending order?
- Risk A has an impact of 0.3 and a probability of 0.2.
- Risk B has an impact of 0.4 and a probability of 0.2.
- Risk C has an impact of 0.3 and a probability of 0.5.
- Risk D has an impact of 0.5 and a probability of 0.8.
- A. D, C, B and A  
B. D, B, C and A  
C. D, C, A, B  
D. D, B, A, C
76. Agile projects deliver reliable results by:
- A. Engaging customers in frequent interactions and shared ownership.  
B. Recognizing that individuals are the ultimate source of value and creating an environment where they can make a difference.  
C. Making continuous flow of value our focus.  
D. Group accountability for results and shared responsibility for team effectiveness.
77. One of the key stakeholders suggested changing the priority of a user story by making it number one on the backlog. The story was earlier placed third on the prioritized backlog. He is very influential and powerful in the department. How should you act on the suggestion made?
- A. Accept the suggestion, change the prioritization order and inform all stakeholders.  
B. Simply decline. Inform him that product backlog has already been prioritized and no more changes can be made.  
C. Inform and discuss this with product owner.  
D. Explain why this is placed at number 3 in backlog and importance of other top user stories to deliver early.
78. Which artifact is the best to display when releases of the product will be ready and what all features will be included in those releases?
- A. Developer team  
B. Product backlog  
C. Product owner  
D. Product roadmap

79. There are a number of projects running where your company is losing money. To reduce the losses, company decides to review and terminate a project. Consequently, 3 projects were shortlisted for review. Which project should be terminated first?

Project 1 has an internal rate of return of -7%

Project 2 has an internal rate of return of -3%

Project 3 has an internal rate of return of -5%

- A. Terminate project 1
  - B. Terminate project 2
  - C. Terminate project 3
  - D. Terminate all projects, all have negative IRR and are losing money
80. To track and report the status of schedule and cost, which tool is best to use?
- A. S-curve graph
  - B. Gantt chart
  - C. Burndown and burnup chart
  - D. Project plan
81. You called a TV engineer to repair your faulty TV set. You spent 10 minutes explaining the problem with the TV set. It took 4 hours for the engineer to repair the TV set and then you take another 10 minutes to check if the issue is fixed or not before the engineer leaves the site.
- In the whole exercise, what is the process cycle efficiency for the engineer and you? Assume that the engineer only values the repair time, whereas you value only the time explaining the issue and checking the TV set.
- A. 92.3% for engineer, 7.7% for you
  - B. 93.7% for engineer, 6.3% for you
  - C. 95.8% for engineer, 4.2% for you
  - D. 98.3% for engineer, 1.7% for you
82. Agile project charter is different than a traditional project charter because:
- A. Agile projects do not require a charter.
  - B. While creating an Agile project charter, what approach to be used is not clear.
  - C. The scope is less clearly defined on Agile projects.
  - D. Agile projects typically are small, so a small charter is enough.

83. Why is the presence of the customer representative made mandatory in Agile projects?
- The customer representative is the main judge for business value.
  - The project leader needs to build personal rapport with the customer representative.
  - The customer representative can dictate the project plan and suggest course corrections.
  - All of the above.
84. When an item is blocked, Kanban teams gather around and collectively work to remove the obstacle. This is prioritized over picking up any new piece of work and ensures continuity of flow through the system. This technique is called:
- Collective ownership
  - Self-organization
  - Swarming
  - Group decision-making
85. All are the following are helpful when performing risk management except:
- Risk-Based Spikes
  - Risk-Adjusted Backlogs
  - Risk Burndown Charts
  - Risk Owner
86. During a project audit, it is determined that the vendor is artificially inflating the estimates of the user stories. They are on a time-and-materials contract, so the longer they stay on in the project, the more revenue they generate. On getting to know such a practice, what should you do?
- Report to PMI®.
  - Halve the estimates produced.
  - Report the unethical conduct to the appropriate parties.
  - Drag the vendor to the court.
87. Wideband Delphi technique is best described as:
- A group-based estimation approach
  - A value-driven estimation approach
  - A negotiating estimation approach
  - A team-based estimation approach

88. Story points are used as one of way to estimate Agile projects. These story point estimates are:
- Absolute
  - Relative
  - The sum of the features in release
  - A fraction of the velocity of the team
89. Planning poker allows multiple rounds of estimates. Which other technique allows a similar approach?
- Shu-Ha-Ri
  - Wideband Delphi
  - Triple nickel
  - Circle of questions
90. On an Agile project, you get to see estimates of a user story expressed as:
- Completed by November 15th 2016.
  - Completed within 3 months from when the user story was started.
  - Completed before the start of the next user story.
  - Completed within 40 to 60 hours.
91. On a burndown chart, the top of the bar moved lower from one iteration to the next. What does that imply?
- The team corrected some of the underestimates of the past.
  - The team completed work in the previous iteration.
  - Scope got added into the backlog.
  - Scope got removed from the backlog.
92. Which of the following qualifies to be a good MMF?
- An online grocery shopping cart that allows you to view and save the items you want to buy and complete the purchase process.
  - A bicycle having 2 wheels along with supporter, decorative lights, a water bottle space.
  - A cell phone that allows you to make and receive calls, click photos and allows you to connect with social media and other Internet world.
  - A camera that allows you to take photos and then access the Web to add descriptions and share them with friends.

93. It is observed that the bottom of the bar in the burndown chart is raised above the X-axis. What does that mean?
- Scope has been removed.
  - Scope has been added.
  - This could be a mistake in plotting.
  - Team is tracking ahead of the estimated velocity.
94. Drawing a tree, the participants are asked to add related features as leaves closer to the trunks and dependent features higher on the tree. This activity is called:
- Leaves and trunks
  - Features and dependencies
  - Define the scope tree
  - Prune the product tree
95. During an internal project audit your project is marked as RED and highlighted as noncompliant as it does not have a detailed plan. You are asked to prepare the project plan and submit within 3 days instead of having plan for next 2 iterations. What should you do?
- Ask the team to create a plan based on experience.
  - Ignore them, as this is an internal audit and has no adverse effect on you and the project.
  - Conduct a meeting with them explaining the Agile methodology and progressive planning approach.
  - Contact your management and ask for project exception from the audit.
96. You are into the 6th month of the project, which has an estimated schedule completion of 1 year from start. Referring to the latest project status report submitted by you, your sponsor wants to understand why you show that the project will be completed a month earlier than the scheduled project completion date. What data should you present in support of your report?
- Velocity
  - Risk burndown chart
  - Cumulative Flow diagram
  - Risk-based spikes
97. In an Agile project charter, you will not find the:
- Detailed project scope
  - Estimated project cost
  - Expected ROI
  - Project objective

98. In a control chart, a process is expected to be out of control:
- When the measured parameter is below the lower control limit.
  - When the measured parameter is above the upper control limit.
  - When the rule of seven is violated.
  - Any of the above.
99. Kanban boards reflect WIP limits against each stage of the workflow. The drawbacks of WIP include the following:
- Hides bottlenecks.
  - Results in context switching.
  - Delayed feedback.
  - All of the above.
100. Project cost calculation must include:
- $\text{Total cost} = (\text{Time} \times \text{Resource rate}) + \text{other project costs}$
  - $\text{Total cost} = (\text{Team velocity} \times \text{average labor rate}) + \text{additional project costs}$
  - $\text{Total cost} = (\text{average team size} \times \text{average labor rate}) + \text{non-labor project costs}$
  - $\text{Total cost} = (\text{team size} \times \text{hourly rate}) + \text{additional project costs}$
101. You are managing a project and the labor cost per month for the whole team is 30,000 USD. The fixed cost for infrastructure procurement is estimated at 10,000 USD. Based on prioritized product backlog items and team velocity, the team will need 20 iterations of 1 month each to complete the work. Post backlog items are successfully delivered and a 1-month warranty period is requested for the team to remain intact before the project is closed and the team released. What would be the total cost of the project until completion?
- \$5,90,000
  - \$6,60,000
  - \$6,30,000
  - \$6,40,000
102. What do you expect from a servant leader?
- Tracks tasks on the Kanban board.
  - Empowers the team.
  - Collects requirements and gather user stories.
  - Hosts the iteration review meeting.

103. Which of the following is not a characteristic of high performing Agile teams?
- A. Constructive disagreement
  - B. Plan driven
  - C. Empowered
  - D. Self-organizing
104. Which of the following is not appropriate to be discussed in a daily stand-up meeting?
- A. The application developer is on vacation, so the code changes are on hold.
  - B. Build failed for the transaction validator. This is expected to be fixed by today evening.
  - C. Code upgrade for the payment module is completed.
  - D. That configuration fix made by Harry last week has caused a significant improvement in our batch jobs. However there is room for a bit more improvement.
105. An Agile coach is building a high-performance team. Which of the following techniques can she adopt?
- A. Make all decisions on behalf of the team, saving their time.
  - B. Demonstrate expertise by solving problems hands-on.
  - C. Performing individual coaching interventions in the middle of the sprint when team members approach with problems.
  - D. Intervene at every possible hint of conflict within the team.
106. In a distributed team, which is the most effective tool to use for communication between team members?
- A. Email
  - B. Wiki
  - C. Skype
  - D. Audio playback
107. A product owner MUST attend a planning poker estimation session. Without his presence:
- A. The session will not be moderated.
  - B. The team will have a tendency to overestimate.
  - C. The team will not get the necessary clarifications regarding the stories getting estimated.
  - D. There will be no timekeeping.

108. You are managing a complex program across the globe and team members are from different regions. You have a large number of team members working on projects and reporting to the respective project manager and then each project manager is reporting to you. Currently you have 10 different project managers on a program. To have an effective communication, how many communication channels will be there between you and project managers?
- A. 10
  - B. 45
  - C. 55
  - D. 110
109. Which of the following Emotional Intelligence pairings is correct?
- A. Self-management relates to self-control.
  - B. Self-awareness relates to empathy.
  - C. Social skills relate to influence.
  - D. Social awareness relates to self-confidence.
110. Which is a correct pairing of adaptive leadership and team phases?
- A. Directing and Storming, Coaching and Forming, Supporting and Norming, Delegating and Performing
  - B. Directing and Forming, Coaching and Storming, Supporting and Norming, Delegating and Performing
  - C. Coaching and Forming, Supporting and Storming, Directing and Norming, Delegating and Performing
  - D. Coaching and Forming, Supporting and Storming, Directing and Delegating, Performing and Norming
111. You should be flexible while leading and managing a team as an Agile coach and improve emotional intelligence. There are different aspects of emotional intelligence, divided into quadrants. What are they?
- A. Self, Team, Regulate, Recognize
  - B. Self, Others, Regulate, Optimize
  - C. Self, Team, Regulate, Optimize
  - D. Self, Others, Regulate, Recognize
112. Which of the following is not a Kanban principle?
- A. Limit WIP
  - B. Visualize work
  - C. Make processes explicit
  - D. Limit feedback loops

113. Which of the following is not a Lean principle?
- A. Eliminate waste
  - B. Empower the team
  - C. Optimize learning
  - D. Defer decision
114. You are a program manager and taking an interview for a PMP certified project manager position in your organization. This position is for a different project that will be led by a different program manager. During the interview process, you find the person violating the standards of PMI® code of ethics and professional conduct. However, you find him a suitable candidate for the position. What you should do?
- A. Confront the person.
  - B. Report this to PMI® to get it appropriately investigated, as you have a suspicion, but no concrete evidence.
  - C. Ignore it and do not recommend him to be hired him for the project manager position.
  - D. Ignore it and recommend him for hiring as he will not be working with you, so it is of no harm to you.
115. What are the success criteria for a methodology while performing process analysis?
- A. The project got stopped, sponsorship remained intact and the team would work the same way again.
  - B. The project got stopped, leadership remained intact and the team would work the same way again.
  - C. The project got shipped, sponsorship remained intact and the team would work the same way again.
  - D. The project got shipped, leadership remained intact and the team would work the same way again.
116. One thing to avoid when choosing a new Agile practice over an existing process is:
- A. Accepting the claims of new practice without validation.
  - B. Taking time to research the validity of the benefits claimed for the new practice.
  - C. Testing the approach on a small scale before committing to it on the project.
  - D. Discontinuing the activities that have led to the underlying problems we want to address.

117. In focus on / focus off activity, what is focused on rather than an argument?
- A. Inquiry
  - B. Conversation
  - C. Dialogue
  - D. Understanding
118. As per principle of systems thinking, Agile works well when a project is:
- A. Highly-complex requirements and highly-complex technology
  - B. Low-complex requirements and low-complex technology
  - C. Highly-complex requirements and highly-complex technology
  - D. Medium-complex requirements and medium-complex technology
119. An Agile team's velocity is 18. The team is referring to the following stories in priority order on the product backlog:
- Story 1 - 4 Points
- Story 2 - 1 Points
- Story 3 - 5 Points
- Story 4 - 2 Points
- Story 5 - 13 Points
- Story 6 - 5 Points
- Story 7 - 5 Points
- What is the best choice of stories for the next iteration assuming that stories cannot be split any further?
- A. Story 1, 2, 3, 4, 6
  - B. Story 1, 2, 5
  - C. Story 1, 2, 3, 4
  - D. Story 3, 5
120. Which of the following is not a good idea to have in a brainstorming session?
- A. Send meeting invites with a clear agenda in advance.
  - B. Have an experienced facilitator lead the session.
  - C. Allow people to vent their frustrations and criticisms openly.
  - D. Have a diverse group so as to consider many different perspectives.

# Mock Exam II

1. What are the core values of the PMI® code of ethics?
  - A. Responsibility, Respect, Fairness, Truth
  - B. Responsibility, Respect, Fairness, Honesty
  - C. Accountability, Integrity, Respect, Fairness
  - D. Accountability, Responsibility, Respect, Honesty
2. Kano, Wiegers' and MoSCOW are techniques used for:
  - A. Disaggregation
  - B. Risk analysis
  - C. Value-based prioritization
  - D. Collecting requirements from customers
3. The letters V, S and T in the acronym INVEST (that is used to describe user stories) stands for?
  - A. Valuable, small, testable
  - B. Valuable, smart, time-bound
  - C. Verifiable, small, testable
  - D. Valuable, specific, timely
4. An Agile coach is suggesting ways for the team to increase their velocity. Which of the suggestions are valid?
  - A. Increase headcount of the team if budget permits.
  - B. Engage the customer closely, if possible let him/her be co-located with rest of the team.
  - C. Remove technical debt by refactoring code continuously.
  - D. All of the suggestions above are valid.

5. Team members are observed to be frequently conflicting with each other, even on petty issues. Referring to Bruce Tuckman's team formation model, at which stage do you think the team is in?
  - A. Forming
  - B. Storming
  - C. Norming
  - D. Adjourning
6. During an iteration, the team has committed to deliver 20 story points. As the end of the iteration nears, it appears that 4 story points cannot be completed during the iteration. Which option is the team most likely to exercise?
  - A. Extend the iteration by a few days.
  - B. Relax the definition of done.
  - C. Terminate the sprint, because the estimated velocity cannot be achieved.
  - D. Complete whatever is possible and carry over the balance to the product backlog.
7. Referring to the Agile planning onion, which of these are in the correct sequence?
  - A. Strategy, product, portfolio, iteration, daily
  - B. Portfolio, product, release, iteration, daily
  - C. Portfolio, release, product, iteration, daily
  - D. Portfolio, daily, strategy, iteration, release
8. Midway during an iteration, a team member had to go on emergency leave for personal reasons. The team is on the verge of missing the committed sprint goal. What should be the course of action now?
  - A. Agile teams are self-organized, so the others should rally around and makeup for the absent team member.
  - B. Agile teams are self-empowered, so they should remove the scope from the sprint goal.
  - C. Agile teams are cross-functional, so the Scrum Master should help in coding and testing activities.
  - D. Agile teams maintain sustainable pace, so they deliver what is possible during the sprint and leave the rest to be put back into the product backlog.
9. What are the first three steps to conduct a retrospective?
  - A. Set the stage, gather data, generate insights.
  - B. Gather the team, brainstorm, make decisions.
  - C. Introduce, collaborate, actions.
  - D. Set the stage, generate data, gather insights.

10. Which of the following statements related to different levels of coaching are true?
- A. Whole team coaching happens in the middle of the sprint, while individual coaching happens at the beginning and end of the sprint.
  - B. Whole team coaching happens at the planning stage of the sprint, while individual coaching can happen throughout the whole sprint.
  - C. Whole team coaching happens in the planning and retrospective sessions of the sprint, while individual coaching happens at the middle of the sprint.
  - D. Whole team coaching happens throughout the whole sprint, while individual coaching can happen at the middle of the sprint.
11. The formula for Little's Law states:
- A.  $WIP = Lead\ Time * Throughput$ .
  - B.  $WIP = Lead\ Time / Throughput$ .
  - C.  $WIP = Lead\ Time + Throughput$ .
  - D. Higher the WIP, greater is the flow through the system.
12. An Agile team agrees on a 3-week iteration and a planned velocity of 40 story points per iteration. The team starts with a backlog of 400 story points. In the middle of the project, 40 story points get removed and an additional 120 story points get added. How long will the project team take to complete the project?
- A. 39 weeks
  - B. 36 weeks
  - C. 33 weeks
  - D. 36 weeks provided the average velocity of the team remains at 40 throughout the project
13. Spikes are conducted to:
- A. Mitigate risks
  - B. Make better estimates
  - C. Gain confidence
  - D. All of the above
14. Who can terminate a sprint midway?
- A. Product owner
  - B. Scrum Master
  - C. Development team
  - D. Anyone in the Scrum team, but not someone who is outside the team

15. Sequence the following in descending order of size:
  - A. Themes, tasks, stories
  - B. Epics, features, stories, sub-stories
  - C. Epics, stories, tasks, subtasks
  - D. Feature, tasks, stories
16. Lyssa Adkins has provided some recommendations to follow during one-on-one coaching. Which of the following is not one of them?
  - A. Meet team members a half-step ahead
  - B. Partner with functional managers
  - C. Create positive regard
  - D. Feedback and follow-up
17. “We are going too slow. Let us remove the lower priority stories #12 and #23 from the backlog.” Who do you think has the right of saying this?
  - A. The development team since they are observing the velocity trends.
  - B. The Scrum Master since he facilitates the daily Scrum meetings and needs to escalate the impediments to the product owner.
  - C. The Product Owner since he needs to balance ROI and determine what gets delivered when.
  - D. The Project Manager since his job is to track scope, time and cost.
18. How do Agile teams achieve knowledge sharing?
  - A. Through team participating in all ceremonies.
  - B. Through practices like pair programming and continuous integration.
  - C. Through use of osmotic communication and technologies across virtual teams.
  - D. All of the above.
19. The vertices of the Agile triangle are labeled as:
  - A. Quality, Value, Constraints
  - B. Quality, Scope, Time
  - C. Quality, Value, Scope
  - D. Time, Cost, Scope
20. Which of the following is NOT a criterion for determining the length of an iteration for an Agile team?
  - A. Maintaining focus and sense of urgency
  - B. Length of the largest story in the release
  - C. Risk and uncertainty in the requirement
  - D. Overhead of iterating

21. A story map is meant to show the stories that are to be delivered over time. The time parameter is shown in the horizontal (X) axis. What is there on the vertical (Y) axis?
- Priority of the story.
  - Estimate of the story.
  - ROI of the story.
  - None of the above.
22. \_\_\_\_\_ is a low-fidelity prototype that shows a mockup for a set of screens, containing the basic layout of the different widgets on it.
- Persona
  - Wireframe
  - Spikes
  - Story map
23. A value stream map used to show:
- Release date and mapping to business benefits.
  - Product backlog items mapping to risk.
  - Current process flow.
  - Estimates per user story in product backlog.
24. The velocity of a Scrum team is observed to be slightly below the average velocity computed over the last three sprints. The Scrum Master is concerned and asks the team to reflect and come up with a corrective action. Which do you think is a valid action?
- All stories need to be reestimated to arrive at better estimates.
  - Redo the definition of story point.
  - Increase the length of the iteration.
  - There is no need to be overly concerned. Such variations are naturally going to happen.
25. Which of the following is not a valid statement in the Agile Manifesto?
- Individuals and interactions over processes and tools.
  - Working software over comprehensive documentation.
  - Customer negotiation over contract collaboration.
  - Responding to change over following a plan.

26. A distributed Agile team is more likely to use \_\_\_\_\_.
- Work breakdown structure
  - An electronic Kanban board for tracking work in progress
  - A command and control style of leadership
  - A project manager to monitor and control day-to-day tasks.
27. Agile contracts are characterized by:
- Ability to define scope upfront.
  - Ability to squeeze the vendor to do more for less.
  - Ability to respond to change without the need of change control procedures.
  - Ability to deliver by a fixed time and at a fixed cost.
28. All of the following hinder effective communication in a team space EXCEPT:
- Teams seated by their skillsets, like developers together, testers together, etc.
  - Information radiators that have not been regularly updated.
  - Developers using headphones to listen to music.
  - Developers using webcams for communicating with their distant team members.
29. One uses “shuttle” diplomacy by carrying thoughts from one group to the other until they are able to de-escalate the conflict situation. At which level of conflicts do we see the use of shuttle diplomacy?
- Level 1: Problem to solve
  - Level 2: Disagreement
  - Level 3: Contest
  - Level 4: Crusade
30. Bill and Harry belong to a XP team and are paired up for a programming session. They pick up a story from the backlog and observe the acceptance criteria mentioned at the back of the story card. They code the acceptance test cases first and then write their modules in such a way to make the test cases pass. Which technique are they using?
- Continuous integration
  - Peer code reviews
  - Test first development
  - Refactoring

31. The \_\_\_\_\_ is the summation of labor costs for the team. This is the cost that the team incurs during each iteration.
- Planned Value
  - Burn rate
  - Earned value
  - Indirect cost
32. Sailboat, 20/20 vision and prune the product tree are innovation games that Agile teams use to:
- Collect requirements
  - Determine release plan
  - Perform retrospective
  - Perform estimation
33. All of the following are true about ground rules EXCEPT:
- They are abided by all team members.
  - They are unwritten rules.
  - They set clear expectations of what is or is not acceptable behavior.
  - They are enforced by the Agile coach and all team members have to follow them.
34. A Kanban board reflects columns marked with a WIP limit of 5 for analysis and 7 for coding. This means that
- There are 5 analysts and 7 developers on the team.
  - Coding cannot start until all the 5 work items are done with analysis. Similarly testing cannot start until all 7 are finished coding.
  - The team can progress on a maximum of 5 work items for analysis and 7 work items for coding at any time. Any work item beyond that needs to wait.
  - It should take a maximum of 5 days to complete analysis and 7 days to complete coding for a work item. Anything beyond that signifies that the work item is too complex and it must be further broken down.
35. A team member, while trying to gather more details around a user story, is not able to get hold of a particular user. He has attempted several times, but seems like the user is unable to provide his time to the team member. What should the team member do first?
- Escalate to the product owner and ask him to appoint a proxy.
  - Escalate to the Scrum Master as he is supposed to remove the impediments.
  - Escalate to the Team during the daily stand-up meeting.
  - Remove the item from the backlog and continue with the rest.

36. The \_\_\_\_\_ is responsible for updating the Task board.
- Tester (when test cases pass)
  - The Team (as they progress)
  - The Scrum Master (after the daily Scrum)
  - The Product owner (after the sprint review)
37. A senior member of the team Henry is negotiating with a third-party vendor on the applicable rates on the contract. Henry is passionately hearing the vendor's concerns and trying to relate to it. Which skill is Henry using?
- Active listening
  - Servant leadership
  - Emotional intelligence
  - Empathy
38. One of the very important stories in the sprint backlog has not passed acceptance testing. The whole team has swarmed around and tried to isolate the defect, but they have not yet been successful. The sprint is almost coming to an end and the review is in another 2 days from now. It is unlikely that the 'definition of done' will be met for this particular user story. What should the team members be thinking of now?
- As the story is very important, they should extend the sprint deadline and defer the sprint review meeting.
  - They should deliver the software as is (with the story that failed) and ask the customer not to use it, until it is fixed in the next sprint.
  - They should consult with the Agile coach on the best way forward.
  - They should deliver only the stories that have met the definition of done. All other stories that are incomplete should be removed from delivery.
39. It seems that the number of escaped defects has been rising over the last 3 iterations. As a Scrum Master what should you do?
- Identify which developer(s) is/are not doing things properly and schedule one-on-one meetings with them.
  - Do nothing, but wait to vent it out in the upcoming retrospective meeting.
  - Ask the team to print out the chart showing the escaped defects trend and post it on the team wall.
  - Get the team to address the issue collectively.

40. You have been appointed as an Agile coach in a fairly large department. On an initial survey you notice that there are several projects implementing Agile in their own way and sometimes in different ways. Their definition of story points and velocities are also different. The team members also have varied maturity levels. What should you be doing?
- A. Ignore. You have been recently appointed and it will take some time to understand the ways of working in different teams.
  - B. Express no concern. It is completely acceptable that the team implements Agile and tailor it in a way that suits them the best.
  - C. Express deep concern. Pull up the Agile PMO and ask them why they have not been able to address the issue of inconsistency.
  - D. Express deep concern. Ask each of the teams to email you their metrics every Friday morning.
41. The keyword SMART is used to denote attributes of a well-defined user story. The letters S and T stand for?
- A. Smart, testable
  - B. Specific, testable
  - C. Short, timeboxed
  - D. Specific, time-bound
42. In Agile, prioritization is done on the basis of:
- A. Risk
  - B. Value
  - C. A and B
  - D. Complexity
43. Which of the following are NOT benefits of pair programming?
- A. Collaboration within the team
  - B. Collective code ownership
  - C. Feedback on coding on the fly
  - D. Refactoring
44. Agile teams have large walls where they display artifacts and different metrics showing progress. These are collectively called:
- A. Caves and commons
  - B. Information refrigerator
  - C. Information radiator
  - D. Status reports

45. Which of the following is NOT a group-based technique used to arrive at a decision?
- Nominal group technique
  - Delphi
  - Control charts
  - Wisdom of crowd
46. Undocumented knowledge that team members gather by working in close proximity to each other is called:
- Informative workspace
  - Expert in earshot
  - Confidential information
  - Tacit knowledge
47. Which of the following is NOT a core practice in XP?
- Test-Driven Development
  - Continuous integration
  - Value Stream mapping
  - Collective Code ownership
48. Which of the following are valid project selection methods?
- Discounted payback period, Net present value, ROI, Benefit cost ratio
  - Planning poker, Benefit cost ratio, internal rate of return, payback period
  - Monopoly money, feasibility, value-based prioritization
  - ROI, NPV, IRR, MMF
49. Earned value management technique can be used on Agile projects, especially for tracking release. EVM is an example of:
- Lagging metric
  - Leading metric
  - Both A and B
  - None of the above.
50. Velocity is \_\_\_\_\_ across iterations for a given team on a given project. Velocity is \_\_\_\_\_ across teams or projects.
- Comparable, comparable
  - Comparable, not comparable
  - Not comparable, comparable
  - Not comparable, not comparable

51. During the first half of the iteration planning meeting, the product owner mentions that Feature A should be implemented since it has the highest ROI. The team argues that they think that Feature B would give the maximum benefit to a section of users as they found out during previous conversations. What should happen now?
- The team should use the ‘force’ technique of conflict resolution and go with the Feature Benefit.
  - The team should use the ‘smoothing’ technique of conflict resolution.
  - The team should use the ‘withdraw’ technique of conflict resolution and go with Feature A, since the product owner has the last say as far as the ROI of a feature is concerned.
  - The team should use the ‘compromise’ technique of conflict resolution and do a little bit of both Features A and B.
52. The responsibility of creating the product roadmap primarily rests with:
- The product owner
  - The empowered team
  - The Scrum Master
  - The onsite customer
53. The responsibility of fixing defects found during acceptance testing lies with:
- The programmer who coded it.
  - The programmer who paired and reviewed the code.
  - Anyone on the team.
  - A subject matter expert.
54. The Product owner declined an invite for the sprint planning meeting indicating his unavailability. What should happen now?
- The Sprint planning meeting cannot happen without the PO, so it should be rescheduled.
  - The Scrum Master should substitute for the PO and refer to the existing Product Backlog. Any questions from the team should be taken offline.
  - The team is self-organized, so they should determine the sprint backlog themselves.
  - The sprint should be used only for spikes and technical tasks instead of business features.
55. One of the values of XP is collective ownership. What does the team collectively NOT own?
- Quality of the deliverable.
  - Code.
  - Product backlog.
  - Coding conventions.

56. The team is unable to decide whether it makes sense to buy an off-the-shelf from the vendor or go about building it themselves. Both options have its merits and demerits. As a Scrum Master what would be your recommendation to the team?
- Consult with the product owner of what he is willing to sponsor.
  - Conduct a spike to evaluate both options.
  - Do a fist of five voting.
  - None of the above.
57. As per Stacey's matrix, Agile projects are best suited where there is:
- Agile projects can be applied in all of the below situations.
  - High disagreement on requirements and high uncertainty of technology.
  - High agreement on requirements and high certainty of technology.
  - Moderate agreement on requirements and some uncertainty on technology.
58. As an outcome of the team retrospective, the team members decide to procure the Teamcity software to automate their build process. This is an example of:
- Agile tooling
  - Refactoring
  - Information radiator
  - Emotional intelligence
59. If an XP coach asks the team to be DRY, he/she means that:
- Team should check-in and integrate their code many times a day.
  - Team should not duplicate the same code at multiple places.
  - Team should follow test-driven deployment.
  - Team should be disciplined in their practices.
60. A release burndown chart should show a downward trend to show progress. However, if there is an upward movement, it implies that:
- One or more team members is absent and the team has slowed down.
  - This is a glitch in data collection and it should be fixed during charting.
  - User stories were added to the backlog.
  - The team has been working on analysis, spikes and prototypes more than delivering business functionality in recent times.

61. The team has identified a new stakeholder of the project. However, the stakeholder has low power and low influence. The stakeholder requests the Scrum Master for an invite in the daily stand-up meeting such that he catches up with the latest of the project. The Scrum Master:
- Agrees, but tells the stakeholder that he needs to participate actively in the meeting.
  - Agrees, but tells the stakeholder that he needs to listen in, but not allowed to speak in the meeting.
  - Disagrees, but tells the stakeholder to wait for the next review meeting to see if his expectations have been fulfilled or not.
  - Ignores the request stating that this is not a legitimate request.
62. The Scrum team is in a formative stage. It is learned that the team will not be co-located. What are the options available to the team?
- Be persistent with the demand of co-location without which the project will fail.
  - Invest in collaboration tools and technologies like interactive chats, audio and video conferences.
  - Explore possibility of rotating team members such that each gets a flavor of the culture and working at the other location.
  - B or C.
63. During a sprint planning session, the team is looking at the following stories from the backlog sorted in descending order of priority. They also have the estimate of each story as mentioned below.

Story A - 12 story points

Story B - 6 story points

Story C - 2 story points

Story D - 5 story points

Story E - 7 story points

Story F - 15 story points

Story G - 8 story points

Story H - 6 story points

Story I - 2 story points

Assuming the team velocity of 20 story points and that no story can be further split, what is the most likely backlog for each sprint?

- Sprint 1: ABC, Sprint 2: DEG, Sprint 3: FI, Sprint 4: H
- Sprint 1: ABC, Sprint 2: DEF, Sprint 3: GHI
- Sprint 1: ABC, Sprint 2: DEG, Sprint 3: F, Sprint 4: HI
- None of the above

64. If you happen to hire for a new Agile team, you should prefer:
- Developers
  - Specialists in the technologies to be used
  - Generalists with cross-functional skillsets
  - People who exhibit adaptive leadership skills
65. During the sprint planning session, the PO asks who will be developing a particular story, because he would like to have a conversation with that developer privately. What would happen?
- A developer comes forward and volunteers.
  - It is not known who will develop a story at the planning stage. But this will be reflected in the task board during the iteration when the story is picked up for development.
  - Ask the PO to attend the daily stand-up meeting to keep a tab on who is working on which story.
  - The Scrum Master should be providing the requested information to the PO.
66. Levels two, three and five in Lea's conflict model represent:
- Disagreement, contest, world war
  - Problem to solve, contest, world war
  - Problem to solve, contest, crusade
  - Disagreement, contest, crusade
67. All of the following are brainstorming techniques except:
- Quiet Writing
  - Round-Robin
  - Free-for-all
  - Triple nickels
68. All of the following are techniques to gathering data during retrospectives except:
- Mad, sad, glad
  - Timeline
  - Circle of questions
  - Team radar

69. During the iteration planning meeting, the Agile teams commit to deliver stories A, B, C and D having estimates of 20, 12, 8 and 4 story points. However the team could complete stories A, B, C and 50% of D. What is the team velocity?
- A. 38
  - B. 40
  - C. 42
  - D. 44
70. ESVP is used during \_\_\_\_\_ while Weigers' method is used during \_\_\_\_\_.
- A. Retrospectives, estimation
  - B. Retrospectives, prioritization
  - C. Meeting etiquettes, prioritization
  - D. Planning, estimation
71. The current size of the Agile team is increasing from 9 to 15. As a result, it is observed that the team is unable to complete their daily stand-up meetings within the stipulated 15 minutes. As a Scrum Master, which option out of the following are you most likely to explore?
- A. Extend the meeting from 15 to 25 minutes to accommodate everyone.
  - B. Ask team members to talk about blockers only and leave the other two questions.
  - C. Ask only the senior team members to talk.
  - D. Divide the team into two subteams and have two separate daily stand-ups. The team division should be such that they are mostly independent.
72. Agile teams are self-organized and empowered to make decisions. Which of the following core value in the Agile Manifesto best relates to this?
- A. Individuals and interactions over processes and tools.
  - B. Working software over comprehensive documentation.
  - C. Responding to change over following a plan.
  - D. None of the above.
73. The steps of TDD are as follows:
- A. Write code, test code, fix defect, retest
  - B. Write test, write code, refactoring
  - C. Green, red, refactor
  - D. Write code, refactor and test

74. The sponsor of an Agile project:
- A. Represents the user community
  - B. Defines the product roadmap
  - C. Approves the project plan
  - D. Provides funding for the project
75. Amplify learning is a principle of \_\_\_\_\_, while system metaphors are used in \_\_\_\_\_.  
A. Lean, XP  
B. Kanban, Scrum  
C. DSDM, XP  
D. Scrum, Lean
76. Although the acceptance test cases have passed, the team realizes that the code violates a few coding standards, which might make it difficult to maintain over the long term. This is because of some last-minute tactical changes done by the team to complete the user story. Such an issue is an example of:  
A. Violation of definition of done.  
B. Introduction of technical debt.  
C. Violation of ground rules.  
D. Violation of collective ownership.
77. In the hardening sprint, one expects the team to:  
A. Continue adding features that add business value  
B. Complete testing of whatever is there and make it ready for deployment to production  
C. Refactor the code  
D. Perform process improvements as per the last retrospective
78. As time progresses, in an Agile project you expect:  
A. Cycle time to be shorter  
B. Estimates to be shorter  
C. Velocity to be shorter  
D. Iterations to be shorter

79. The \_\_\_\_\_ manages the product backlog while the \_\_\_\_\_ manages the iteration backlog.
- Scrum Master, developer
  - Product owner, Scrum Master
  - Product owner, team
  - Product manager, team
80. A Product owner is or could be invited in all of the following meetings except:
- Iteration planning
  - Daily stand-up
  - Iteration review
  - Iteration retrospective
81. The Y-axis of an iteration burndown chart depicts \_\_\_\_\_.
- Time
  - Story points
  - Number of features completed
  - Burn rate / cost of resources
82. All of the following are valid units of estimation in Agile projects except:
- Story points
  - Ideal days
  - T-shirt sizes
  - Person-days
83. Your team agreed on a velocity of 25 story points per iteration. The Agile PMO pointed out that another team working on a project of similar complexity is more productive with a velocity of 40 story points per iteration. What should you do?
- Agree to go with 40 and convince the team that overtime might be necessary to catch up.
  - Stick to 25 and convince the PMO that velocities of two teams cannot be compared to each other.
  - Hire an Agile coach to see how to reach 40.
  - Use an alternate estimation technique.

84. Which of the following are valid promises made by the product owner to the team and vice versa?
- PO promises not to change the scope in the middle of the sprint, the team commits to deliver what is mentioned on the sprint goal.
  - PO promises to be available for any questions the development team might have, the team commits to implement any changes introduced in the middle of the sprint.
  - PO promises to bring in a prioritized list of backlog, the team promises to bring in their list of risks and technical tasks that compete in priority over the business requirements.
  - PO promises to deliver a world class product, the team commits to use the most sophisticated technologies available at the market.
85. An Agile project charter contains all of the following except:
- Description of the purpose of the project.
  - A detailed project plan.
  - Identified stakeholders and the intended customer base.
  - Rough timelines when the project is likely to be delivered.
86. In the context of Agile project management, which characteristic is the odd one out in the below?
- Iterative and incremental delivery
  - Focus on individuals and interactions
  - Tracking and monitoring with high-tech, low-touch tools
  - Value-based prioritization
87. Which of the following is going to be least effective in increasing velocity of the team?
- Increase involvement of the customer.
  - Remove technical debt by continuously refactoring code.
  - Shield the team from interferences.
  - Use an alternate technique for estimation.
88. An Agile coach practices whole team coaching during \_\_\_\_\_ and individual coaching at \_\_\_\_\_.
- Sprint planning, middle of sprint.
  - Middle of sprint, throughout the sprint.
  - Sprint planning and retrospective, middle of sprint.
  - Throughout the sprint, retrospective.

89. A team of 5 members has an average velocity of 20 story points. They need to deliver a backlog of 120 story points at iterations of 2 weeks duration. Assuming that weekly labor rate of each team member is \$100\$ what would be the estimated budget of the project? Consider only labor costs.
- A. \$4000
  - B. \$5000
  - C. \$6000
  - D. \$7000
90. The following are characteristics of exploratory testing EXCEPT:
- A. Simultaneous learning and testing.
  - B. Testing with focus on execution rather than up-front planning.
  - C. Writing acceptance tests before writing code.
  - D. Used in conjunction with other forms of testing like automation, regression, usability and acceptance, etc.
91. One should use daily stand-up meetings to do all of the following EXCEPT:
- A. Keep up peer pressure and commit to each other.
  - B. Highlighting issues and bottlenecks.
  - C. Collaborate effectively with each other.
  - D. Provide a status update to the Scrum Master or Product Owner.
92. Agile teams sometimes use extreme personas to collect stories. Extreme personas are helpful since:
- A. Unlike other forms of personas, they are imaginary characters that one can relate to easily.
  - B. Considering extreme personas help to discover stories that otherwise would have been missed.
  - C. Extreme personas are used when all other forms of story writing is found to be ineffective.
  - D. None of the above.
93. Which of the following is not a preferred unit of estimation for Agile stories?
- A. Function points
  - B. Story points
  - C. Ideal days
  - D. T-shirt sizes

94. The technique of breaking up an epic into a story, a story into a task and a task into a subtask is called:
- Decomposition
  - Simplification
  - Disaggregation
  - Splitting
95. The progress midway in an iteration is monitored best using:
- Working software, as per the Agile Manifesto.
  - Release burndown chart.
  - Task board.
  - Conducting demos midway between the sprints.
96. An Agile team space is characterized by a zone where maximum osmotic communication takes place and another zone where privacy prevails and the team members can take care of their needs for separation. This arrangement is called?
- Information radiators
  - Caves and commons
  - Private and public areas
  - Informative team zones
97. You are invited to screen a few proposals from a few vendors. While doing so, you notice that one of the proposals is from a company owned by your relative. What should you do?
- Ignore and try to evaluate as fairly as possible.
  - Contact your relative and ask them to tweak the proposal to make it sound more competitive.
  - Influence the rest of the proposal evaluators that your relative's company is the best as you know them personally.
  - Disclose it to the appropriate authorities and stay out of the selection process.
98. Which of the following is the least-recommended way to determine the initial velocity of a team?
- Refer to historical values.
  - Make a guess.
  - Run an initial iteration as a pilot, measure and use the velocity of that.
  - Use another team's velocity.

99. In which stage of a retrospective are the techniques like 5 Why's, Fishbone and Force field analysis used?
- Set the stage
  - Gather data
  - Generate insights
  - Decide what to do
100. XP teams use the technique of \_\_\_\_\_ to enhance code quality, while keeping its behavior unchanged.
- Refactoring
  - TDD
  - Spikes
  - Pair programming
101. For sprint planning, the following should participate actively:
- Customers, analysts and developers
  - Scrum Master, product owner and analysts
  - Whole project team
  - Sponsor, onsite customer, Development lead, testing leads
102. How do Agile teams manage scope?
- Prevent scope creep during the project.
  - Lock down scope during a sprint.
  - Allow scope changes to the backlog only before a sprint.
  - B and C.
103. Which of the following statements regarding velocity is not correct?
- Velocity helps to correct and adjust inaccuracies in estimates.
  - Velocity differs from team to team.
  - Velocity can differ from one iteration to another iteration.
  - It is impossible to determine the initial velocity, unless the team has actually worked in the project.

104. As an Agile coach, you keep reminding the team to standup during the daily Scrums, update the storyboard before leaving for the day and complete the tasks they have committed during the daily Scrum meeting. This is a description of which failure mode of Agile coaching?
- A. The Expert
  - B. The Nag
  - C. The Opinionator
  - D. The Seagull
105. During osmotic communication between teams, we have to be careful of drafts that are\_\_\_\_\_.
- A. Unwanted chatter on topics that are not useful in the context of the current working environment.
  - B. Gush of air from the window.
  - C. Negative publicity.
  - D. Conflicts between the storming phases of the team.
106. The pillars of Scrum are:
- A. Plan, Do, Check, Act
  - B. Honesty, respect, fairness, responsibility
  - C. Transparency, Inspection and Adaptation
  - D. Green, red, refactor
107. During the estimation session, the team wants to compare the estimate of a new story with a small story and a medium story that has already been estimated to 1 and 5 story points. This is commonly referred to as:
- A. Affinity estimation
  - B. Analogous estimation
  - C. Wideband Delphi
  - D. Triangulation
108. Which of the following is true for a user story card?
- A. The story card is not a requirement specification, but a reminder to have a conversation between the developer and the customer.
  - B. The story card can be torn apart after the definition of done is achieved.
  - C. The acceptance criteria are written at the back of the card.
  - D. All of the above are true.

109. Which of the following Scrum artifacts acts as a communication bridge between the developer and the product owner as far as priorities go?
- Product backlog
  - Release burndown charts
  - Cumulative burndown and burnup charts
  - Product increment
110. From a risk burndown chart, we get to see:
- New risks or existing risks whose severity has changed.
  - Whether the team is able to address risks properly and the cumulative risk severity is showing a downward trend.
  - Both A and B.
  - How many spikes have been performed in the team.
111. During the Scrum meeting, Richard the Scrum Master notices there is some disagreement between Bill and Harry on the timing to change a run-time configuration of the software. The conflict was assessed at Level 1. What should Richard do?
- Openly blast Bill and Harry in the Scrum meeting, reminding them that such conflicts are not healthy in a self-organized team.
  - Do nothing. Since it is a Level 1 conflict, Richard expects Bill and Harry to resolve it on their own.
  - Immediately after the Scrum meeting, take Bill and Harry to another room and try to mediate to resolve the problem.
  - Escalate to Bill and Harry's line managers.
112. Mute mapping is a technique used for categorizing ideas. Which of the following is true?
- All phone lines are muted so that the speaker can continue without interruption.
  - It is used during sprint review.
  - Participants are not allowed to speak while they move related cards (topics) together and put unrelated cards separate.
  - The ideas with the maximum votes win and the others are discarded.

113. Fractional assignment is not suitable for Agile projects since:
- A. Lot of time is wasted because of context switching.
  - B. People do not get bored because they are involved in a variety of tasks.
  - C. Productivity suffers.
  - D. A and C.
114. During which Scrum ceremony are risk audits held?
- A. Sprint planning
  - B. Sprint execution
  - C. Sprint review
  - D. Sprint retrospective
115. If co-location is not possible, which of the following is NOT a good practice in distributed teams?
- A. It is advisable to bring them team together at the beginning to conduct a kick-off meeting or get teams to work together for 1 or 2 iterations and get used to each other's styles of working.
  - B. Distribute the team as per job specification – such that all analysts are in one location, all developers are in another location and all testers in the third location. Such kind of horizontalization will increase osmotic communication where team members can learn from each other.
  - C. Invest behind communication technologies like interactive chats, webcams, audio and video conferences, collaboration tools, electronic task boards like Jira and online planning poker sites.
  - D. Explore if work times can be adjusted such that there is some overlap between team members located in different time zones.
116. The product owner brings all stakeholders in a common place with an intent to reach consensus on the priorities of the items on their wish list. He tells everyone to distribute 100 points across all features that are deemed valuable to them. They may even choose to give all 100 to only one feature, if that is the only one they are interested in. Once the choices are made, the product owner sums up the votes and lists the features in descending order of priority. What is the name of this prioritization technique?
- A. Planning Poker
  - B. Delphi
  - C. 100-point method
  - D. Weigers' method

117. Which of the following roles could an Agile PMO play in a project?
- A. Help in resource management, especially shared resources.
  - B. Help in rolling up management reporting.
  - C. Help in vendor and contract management.
  - D. All of the above.
118. By tracking velocity trends, a team can:
- A. Gauge the rate of progress
  - B. Estimate how much longer it will take to complete
  - C. Correcting estimation errors
  - D. All of the above
119. Bob is a newbie in an Agile team. He is studying how the team is working and sieving through the artifacts that teams track to measure their progress. While looking at a burndown chart, he observes that the bar chart, instead of going down has actually risen in the current iteration, from where it was in the past. He is confused and runs to Jessica for a clarification. What is Jessica likely to explain?
- A. Jessica explains that there is a mistake in the burndown chart, as the bar graphs should always show a downward trend.
  - B. Jessica explains that the team has corrected the estimates of a few stories based on better understanding that they have gathered recently. In the past, there was an underestimate.
  - C. Jessica explains that the product owner has recently added a bunch of new stories to the backlog, hence the top has moved up.
  - D. Jessica explains that the rise in the bar graph is because the team's progress has been slow in the last few days, as a colleague has been ill.
120. A Kanban team uses an expedite lane on their Kanban board to:
- A. Slot in work items that exceed the WIP limit, but must get done on a best effort basis.
  - B. To tackle critical and urgent work like production issues, but are again subject to their own WIP limits.
  - C. To find bottlenecks in the rest of the lanes on the Kanban board.
  - D. The word expedite shows that the team is working expeditiously – reacting to tasks and changes as swiftly as possible at all times.

# Answers

## Answers – Mock Exam I

1. C	31. B	61. A	91. B
2. D	32. D	62. D	92. A
3. C	33. A	63. C	93. C
4. D	34. D	64. A	94. D
5. C	35. C	65. B	95. D
6. C	36. A	66. D	96. D
7. B	37. C	67. A	97. C
8. C	38. D	68. C	98. B
9. D	39. A	69. A	99. A
10. B	40. C	70. C	100. C
11. C	41. C	71. C	101. C
12. B	42. C	72. B	102. D
13. A	43. D	73. C	103. B
14. D	44. C	74. A	104. A
15. C	45. A	75. B	105. D
16. C	46. B	76. D	106. C
17. A	47. B	77. B	107. A
18. A	48. D	78. C	108. C
19. D	49. A	79. A	109. C
20. D	50. D	80. D	110. C
21. C	51. D	81. C	111. D
22. C	52. C	82. D	112. C
23. B	53. D	83. A	113. C
24. D	54. B	84. C	114. D
25. C	55. D	85. B	115. B
26. A	56. B	86. A	116. D
27. B	57. A	87. D	117. A
28. C	58. C	88. C	118. A
29. C	59. C	89. B	119. C
30. B	60. D	90. C	120. D

## Answers – Mock Exam II

1. D	31. B	61. D	91. B
2. D	32. D	62. C	92. A
3. B	33. C	63. B	93. A
4. C	34. A	64. C	94. D
5. A	35. C	65. A	95. C
6. D	36. B	66. B	96. A
7. B	37. A	67. D	97. A
8. B	38. A	68. A	98. D
9. C	39. B	69. D	99. D
10. C	40. C	70. A	100. A
11. B	41. A	71. D	101. D
12. C	42. B	72. B	102. B
13. A	43. D	73. B	103. B
14. B	44. C	74. D	104. D
15. B	45. A	75. A	105. C
16. D	46. B	76. A	106. C
17. C	47. A	77. C	107. C
18. A	48. C	78. D	108. C
19. A	49. B	79. A	109. A
20. D	50. B	80. A	110. B
21. B	51. A	81. A	111. D
22. A	52. B	82. C	112. D
23. B	53. D	83. A	113. C
24. D	54. C	84. C	114. B
25. C	55. D	85. D	115. D
26. B	56. B	86. C	116. A
27. D	57. A	87. A	117. B
28. D	58. C	88. B	118. D
29. D	59. D	89. B	119. A
30. B	60. D	90. D	120. C

## Answers – Mock Exam III

1. B	31. B	61. B	91. D
2. C	32. A	62. D	92. B
3. A	33. D	63. A	93. A
4. D	34. C	64. C	94. C
5. B	35. C	65. B	95. C
6. D	36. B	66. A	96. B
7. B	37. A	67. D	97. D
8. D	38. D	68. C	98. D
9. A	39. D	69. B	99. C
10. C	40. B	70. B	100. A
11. A	41. D	71. D	101. C
12. D	42. C	72. A	102. D
13. D	43. D	73. B	103. D
14. A	44. C	74. D	104. B
15. C	45. C	75. A	105. A
16. D	46. D	76. B	106. C
17. C	47. C	77. B	107. D
18. D	48. A	78. A	108. D
19. A	49. C	79. C	109. A
20. B	50. B	80. D	110. C
21. A	51. C	81. B	111. B
22. B	52. A	82. D	112. C
23. C	53. C	83. B	113. D
24. D	54. A	84. A	114. D
25. C	55. C	85. B	115. B
26. B	56. B	86. C	116. C
27. C	57. D	87. D	117. D
28. D	58. A	88. C	118. D
29. D	59. B	89. C	119. B
30. C	60. C	90. C	120. B

## Exam Questions

**These practice exam questions will help you review the material in this chapter. You should still try answering them even if you're not using this book to prepare for the PMI-ACP certification. It's a great way to figure out what you do and don't know, which helps get the material into your brain more quickly.**

1. You're a project manager on a team building network firmware for embedded systems. You've called a meeting to give a demo of the latest version of code the team has been working on for a control panel interface to a very technical group of business users and customers. This is the fifth time that you've called a meeting to do a demo like this. And for the fifth time, the users and customers asked for specific changes. The team will now go back and work on a sixth version, and you'll repeat the process again.

Which of the following **BEST** describes this situation?

- A. The team does not understand the requirements
- B. The users and customers don't know what they want
- C. The project needs better change control and requirements management practices
- D. The team is delivering value early and continuously

2. Which of the following is NOT a Scrum role?

- A. Scrum Master
- B. Team Member
- C. Project Manager
- D. Product Owner

3. Joaquin is a developer, and his software team is in the process of adopting agile. One of the project's users wrote a brief specification that describes exactly what she wants for a new feature, and Joaquin's manager assigned him to work on that feature. What should Joaquin do next?

- A. Demand a meeting with the user, because agile teams recognize that face-to-face conversation is the most efficient and effective method of conveying information
- B. Read the specification
- C. Ignore the specification, because agile teams value customer collaboration over comprehensive documentation
- D. Start writing code immediately, because the team's highest priority is to satisfy the customer through early delivery of valuable software

4. Which of the following is **TRUE** about working software?

- A. It does what the users need it to do
- B. It meets the requirements in its specification

# Exam Questions

- C. Both A and B
- D. Neither A nor B

5. Which of the following statements BEST describes the Agile Manifesto?

- A. It describes the most effective way to build software
- B. It contains practices that many agile teams use
- C. It contains values that establish an agile mindset
- D. It defines rules for building software

6. Scrum projects are divided into:

- A. Phases
- B. Sprints
- C. Milestones
- D. Rolling wave planning

7. You are a developer at a social media company working on a project to build a new feature to create a private site for a corporate client. You need to work with your company's network engineers to determine a hosting strategy, and come up with a set of services and tools that the engineers will use to manage the site. The network engineers want to host all of the services internally on your network, but you and your teammates disagree and feel that the services should be hosted on the client's network. Work on the project has come to a halt while everyone tries to come to an agreement. Which agile value BEST applies to this situation?

- A. Individuals and interactions over processes and tools
- B. Working software over comprehensive documentation
- C. Customer collaboration over contract negotiation
- D. Responding to change over following a plan

8. Donald is a project manager on a team that follows separate phases for each project, starting with a requirements phase followed by a design phase. Some work can begin on the code before the requirements and design are finished, but the team typically doesn't consider any work to be complete until those phases are finished. Which term BEST describes Donald's projects?

- A. Iterative
- B. Rolling wave planning
- C. Waterfall
- D. Scrum

## Exam Questions

9. Keith is the manager of a software team. He's made it clear that mistakes are not to be tolerated. A developer spent several hours building "proof of concept" code to test a possible approach to a complex problem. When he eventually discovered from the experiment that the approach wouldn't work, Keith yelled at him in front of the whole team and threatened to fire him if he did it again.

Which agile principle **BEST** applies to this situation?

- A. The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.
- B. Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.
- C. Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.
- D. Continuous attention to technical excellence and good design enhances agility.

10. What's the highest priority of an agile team?

- A. Maximizing the work not done
- B. Satisfying the customer by delivering valuable software early and often
- C. Welcoming changing requirements, even late in development
- D. Using iteration to effectively plan the project

11. Which of the following statements is NOT true about the daily standup?

- A. The length is kept short by having everyone stand for the duration of the meeting
- B. It's the same thing as a status meeting
- C. It is most effective when everyone listens to each other.
- D. It's an opportunity for every team member to get involved in planning the project.

12. Which of the following **BEST** describes the agile mindset with respect to simplicity?

- A. Maximizing the work not done
- B. Satisfying the customer by delivering valuable software early and often
- C. Welcoming changing requirements, even late in development
- D. Using iteration to effectively plan the project

13. A'ja is a project manager on a team that is just starting their agile adoption. The first change they made to the way they work was to start holding daily standup meetings. Several team members have approached her to say that they don't like attending. And despite the fact that

# Exam Questions

she's getting some valuable information from the team at each standup, A'ja is concerned that the extra lines of communication might not be worth damaging the team cohesion.

**What is the BEST thing for A'ja to do?**

- A. Stop holding the daily standup and find another way to adopt agile.
- B. Make and enforce a rule that every attendee must put away his or her phone and pay attention.
- C. Follow up with people individually after the meeting to get more detailed status.
- D. Work with the team on changing their mindset.

**14. You're a developer on a software team. A user has approached your team about building a new feature, and has provided requirements for it in the form of a specification. She is very certain of exactly how the feature will work, and promises there will be no changes. Which agile value BEST applies to this situation?**

- A. Individuals and interactions over processes and tools
- B. Working software over comprehensive documentation
- C. Customer collaboration over contract negotiation
- D. Responding to change over following a plan

**15. Which of the following is NOT a benefit of welcoming changing requirements?**

- A. It gives the team a way to explain a missed deadline
- B. The team builds more valuable software when customers aren't pressured not to change their minds
- C. There's more time and less pressure so the team can make better decisions
- D. Less code is written before changes happen, which minimizes unnecessary rework

**16. Which of the following is NOT part of an agile team's mindset towards working software?**

- A. It contains the final version of all features
- B. It is the primary measure of progress
- C. It is delivered frequently
- D. It is an effective way to get feedback

**17. Which of the following is NOT true about iteration?**

- A. The team must finish all planned work by the end of an iteration
- B. Iterations have a fixed deadline
- C. The scope of work performed during an iteration may change by the time it ends
- D. Projects typically have multiple sequential iterations

*Answers*~~Exam Questions~~

Here are the answers to the practice exam questions in this chapter. How many did you get right? If you got one wrong, that's okay—it's worth taking the time to flip back and re-read the relevant part of the chapter so that you understand what's going on.

## 1. Answer: D

Did this situation sound negative, like something was going drastically wrong? If it did, you may want to think about your own mindset! This was actually a pretty accurate description of a very successful agile project that uses an iterative methodology. It only sounds like the project is running into problems if you approach it with a mindset that considers change and iteration to be a mistake rather than a healthy activity. If you see the project this way, then you'll be tempted to "blame" the team for not understanding the requirements, or the users for not knowing what they want, or the process for not having adequate controls to prevent and manage changes. Agile teams don't think about things like that. They know that the best way to figure out what the users need is to deliver working software early and frequently.

## 2. Answer: C

Project managers are very important, but there's no specific role in Scrum called "project manager." Scrum has three roles: Scrum Master, Product Owner, and Team Member. The project manager will fill one of those roles on a project that uses Scrum, but will often still have the "Project Manager" job title.

## 3. Answer: B

*When your team follows an agile methodology that has specific roles, the role that you fill doesn't always match the title on your business card, especially when your team is just starting to adopt the methodology.*

It's true that agile teams value customer collaboration, believe face-to-face conversation is the most effective method of conveying information, and place the highest priority on delivering software. However, the user took the time to write the specification, and the information in it could be very helpful in either writing code or having a face-to-face conversation.

## 4. Answer: D

*When someone takes the time to write down information they think is important, it's very UN-collaborative to ignore it.*

When agile teams talk about working software, they mean software that they consider "done" and ready to demonstrate to the users. But there's no guarantee that it fulfills the users' needs or that it meets the specific requirements in a specification. In fact, the most effective way to build software that genuinely helps users is to deliver working software frequently. The reason is because the early versions of working software typically **don't fully meet the users' needs**, and the only way for everyone to figure that out is to get it into the hands of the users so they can give feedback about it.

*This is why agile teams value early and continuous delivery of working software.*

# Answers

## ~~Exam Questions~~

### 5. Answer: C

The Agile Manifesto contains the core values shared by effective agile teams. It doesn't define a "best" way to build software or a set of rules that all teams should follow, because people on agile teams know that there's no "one size fits all" approach that works for all teams.

### 6. Answer: B

Scrum teams work in sprints, typically (but not always) 30 days long. They plan the next 30 days of work (assuming the length is 30 days) at the start of the sprint. At the end of the sprint, they demonstrate working software to the users, and also hold a retrospective to review what went well and find ways to improve.

### 7. Answer: C

The project is suffering because the team is having trouble collaborating with their customer. In this case, the network engineers are the customer, because they're the ones who will be using the software. This is a situation where it would be easy to take a contract negotiation approach, laying out specific terms and documents to describe what will be built so that software development work can begin. But it's more effective to genuinely collaborate with them and work together to discover the best technical solution.

### 8. Answer: C

A waterfall project is divided into phases, typically starting with requirements and design phases. Many waterfall teams will begin "pre-work" on code once the requirements and design have reached a stable point, even if they're not yet complete. However, this is definitely not the same thing as iteration, because the team doesn't change the plan based on what they learned building and demonstrating working software.

### 9. Answer: B

Agile projects are built around motivated team members. Keith is taking actions that undermine the whole team's motivation by undercutting a team member who's taking a good risk and genuinely trying to make the project better.

## ~~Exam Questions~~

### **10. Answer: B**

Flip back and reread the first principle of agile: “Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.” The reason this is the highest priority is because agile teams are focused first and foremost on delivering software that’s valuable. All of the other things we do on projects—planning, design, testing, meetings, discussion, documentation—are really, really important, but it’s all in service of delivering that valuable software to our customers.

### **11. Answer: B**

While some teams treat the Daily Standup as a status meeting where each team member gives an update to a boss or project manager, that’s not really its purpose. It works best when everyone listens to each other, and uses it to plan the project together as a team.

### **12. Answer: A**

Agile teams value simplicity, because simple designs and code are much easier to work with, maintain, and change than complex ones. Simplicity is often called “the art of maximizing the work not done” because—and this is especially true of software—the most effective way to keep something simple is often to simply do less.

### **13. Answer: D**

The reason that the team isn’t paying attention during the daily standup is because they don’t really care about it or buy into it as an effective tool, and mainly want it to end as quickly as possible so they can get back to their “real” jobs. When teams have this mindset, it’s likely that they will eventually stop attending the meeting altogether, and the agile adoption is much less likely to be successful. The daily standup practice will be more effective if the team understands how it helps each of them, both individually and as a team. That mindset shift can only be accomplished through open and honest discussion about what’s working and what isn’t. That’s why working with the team on changing their mindset is the best approach to this situation.

### **14. Answer: B**

It certainly makes sense to read and understand the specification. But the most effective way to truly ascertain whether or not the team really understands what she intended is to deliver working software to her, so that she can see how the requirements she documented were interpreted and work with the team to determine what works well and what needs to change.

# Answers

## ~~Exam Questions~~

### 15. Answer: A

There are a lot of great reasons that agile teams welcome changing requirements. When customers are encouraged to change their minds (rather than discouraged from it), they give better information to the team, and that leads to better software. And even when people keep their mouths shut about changes, they almost always eventually get exposed in the end, so when the team gets them early it gives them more time to respond—and the earlier the changes arise, the less code has to be reworked.

However, changes are never an excuse for poor planning or missed deadlines. Effective agile teams generally have an agreement with their users: the teams welcome changing requirements from users, customers, and managers, and in return they aren't blamed for the time it takes to respond to those changes, because everyone recognizes it's still the fastest and most effective way to build software. So nobody really sees welcoming changing requirements as giving the team a way to explain a missed deadline, because the deadlines should already be adjusted to account for the changes.

### 16. Answer: A

Working software is delivered frequently so that the team can get frequent feedback and make changes early. That's why working software should never be assumed to contain the final version of any requirement. That's why it's "working" software, not "finished" software.

### 17. Answer: A

Iterations are timeboxed, which means that the deadline is fixed and the scope varies to fit it. The team starts each iteration with a planning meeting to decide what work will be accomplished. But if it turns out that they didn't get the plan right and work takes longer than expected, then any work that didn't get done is pushed to the next iteration.

## Exam Questions

**These practice exam questions will help you review the material in this chapter. You should still try answering them even if you're not using this book to prepare for the PMI-ACP certification. It's a great way to figure out what you do and don't know, which helps get the material into your brain more quickly.**

**1. The Scrum Master is responsible for all of the following except:**

- A. Helping the team understand what goes on during the Daily Scrum
- B. Giving the Product Owner guidance in effectively managing the product backlog
- C. Helping the team understand customer requirements
- D. Giving the rest of the organization guidance on understanding Scrum and working with the team

**2. Which of the following is NOT an attribute of a product backlog item?**

- A. Status
- B. Value
- C. Estimate
- D. Order

**3. Juliette is a Product Owner on a Scrum project in a health care organization. She was called into a meeting with a steering committee made up of her company's senior managers because she decided to include a planned health privacy feature in the most recent sprint. At the meeting, the senior managers told her in the future that she must consult with the whole committee before making business decisions like that.**

**Which of the following BEST describes Juliette's role?**

- A. She is in a servant-leadership role
- B. She is not committed to the project
- C. She needs to concentrate on focus and courage
- D. She does not have the authority to adequately fill her Product Owner role

**4. When is the increment considered done?**

- A. When the timebox expires
- B. When every item to be delivered meets its definition of done
- C. When the team holds the sprint review and demonstrates it to the users and stakeholders
- D. When the team holds the sprint retrospective

## Exam Questions

5. Which of the following is an example of collective commitment?

- A. Everyone on the team feels personally responsible for delivering the entire increment, not just their individual parts of it
- B. Everyone on the team always stays late and often works weekends
- C. Everyone on the team is responsible for delivering an important part of the project
- D. Everyone on the team participates in the sprint planning and retrospective meetings

6. Which of the following is NOT a Scrum event?

- A. Sprint review
- B. Product backlog
- C. Retrospective
- D. Daily Scrum

7. Amina is a Scrum Master on a team that is working on adopting Scrum. She wants to make a change to help her team get better at self-organizing. Which of the following is the best area to focus their improvement effort?

- A. Daily Scrum
- B. Sprint planning
- C. Sprint retrospective
- D. Product backlog

8. When is a Scrum sprint over?

- A. When the team finishes the work
- B. When the team completes the sprint retrospective
- C. When the timebox expires
- D. When the team completes the sprint review

## Exam Questions

9. Each person on the team answers all of the following questions during the Daily Scrum except:

- A. What roadblocks are in my way?
- B. What planned work did I fail to accomplish?
- C. What will I do between now and the next Daily Scrum?
- D. What have I done since the last Daily Scrum?

10. Barry is a developer at an online retailer. His project manager told him the deadline for the current feature that he's working on is three weeks from now, even though Barry made it clear that he would need four weeks, and there were no specific deadlines or external pressures that require it to be done earlier than that. Barry's team is starting to adopt Scrum. Which of the Scrum values will make the team's Scrum adoption difficult or less effective?

- A. Openness
- B. Respect
- C. Courage
- D. Focus

11. Sandeep is a product owner on a Scrum team working on a telecommunications project. The business users let him know about a major regulatory change in one of his regular meetings with them. Handling this regulatory change is now a very high priority for the team, and will need to be the main objective of the next sprint.

Which of the following is used to describe the main objective of the next sprint?

- A. The increment
- B. The sprint backlog
- C. The sprint goal
- D. The sprint plan

12. What aspect of empirical process control theory involves frequently examining the different Scrum artifacts and making sure the team is still on track to meet the current goal?

- A. Examination
- B. Adaptation
- C. Transparency
- D. Inspection

## Exam Questions

**13. What is an increment in Scrum?**

- A. The items from the sprint backlog that the team actually completes during the sprint
- B. The items from the product backlog that the team plans to complete during the sprint
- C. The result of decomposing the sprint backlog items
- D. A statement that describes the objective of the sprint

**14. Which of the following helps Scrum teams focus?**

- A. Multitasking
- B. Holding a Daily Scrum
- C. Writing a sprint goal
- D. Holding a retrospective

**15. Danielle is a Product Owner on a Scrum team. She's talking to one of her business users, who gives her a new requirement. Which of the following should Danielle do next?**

- A. Update the product backlog
- B. Hold a sprint planning session
- C. Update the sprint backlog
- D. Bring up the new requirement at the next Daily Scrum

**16. Which of the following BEST describes how the team determines what work needs to be done during the sprint?**

- A. The Product Owner works with the business users to determine which items go into the product backlog
- B. The team decomposes sprint backlog items into tasks
- C. The team chooses which product backlog items to include in the sprint backlog
- D. The team decides on the sprint goal

**17. Which of the following does NOT take place during a sprint review?**

- A. The product backlog is updated to reflect what will probably be in the next sprint
- B. The team collaborates with business users on what they will work on next
- C. The working software the team built during the sprint is demonstrated
- D. The team looks back at the sprint and creates a plan to improve

~~Exam Questions~~

Here are the answers to the practice exam questions in this chapter. How many did you get right? If you got one wrong, that's okay—it's worth taking the time to flip back and re-read the relevant part of the chapter so that you understand what's going on.

**1. Answer: C**

It's the Product Owner's job to help the team understand customer requirements, not the Scrum Master's. The other three answers are good examples of the Scrum Master's servant leadership role.

**2. Answer: A**

The product backlog does not contain any information about the status of a task. This makes sense—none of the items on in the product backlog are currently being worked on, so they all have the same status of not having been started yet.

**3. Answer: D**

One of the most common problems that Scrum teams run into is that the person in the Product Owner role does not have the authority to decide on behalf of the company what features the team will build during the sprint, or accept them as done on behalf of the company.

**4. Answer: B**

The increment is done when every item to be delivered by the team meets its definition of "done." Every item in the sprint backlog has a definition of "done" that the team uses to determine when it's ready to release to the users. The Product Owner can only accept an item on behalf of the company if it meets its definition of "done"—any item that isn't "Done" done when the timebox expires must be pushed to the next sprint.

**5. Answer: A**

Collective commitment means that everyone on the team feels a personal sense of responsibility to deliver not just the piece that he or she is working on, but to do what it takes to help the team deliver the whole increment at each sprint.

Just because everyone on a team works long hours, that doesn't mean they feel a genuine commitment to it. In fact, they might resent the project and the organization for interfering with their lives, and only work the extra hours out of pressure to keep their jobs.

~~Answers~~~~Exam Questions~~

6. Answer: B

The product backlog is a Scrum artifact, not an event.

7. Answer: A

Self-organizing teams take responsibility for their own planning to meet their objectives, assign work themselves (rather than depending on a single manager or project manager to make those assignments), and fix problems with the plan as they come up. Of all of the practices listed as answers, the Daily Scrum is the only one that impacts the way the team plans their work and executes that plan.

8. Answer: C

One reason the Daily Scrum is so important is that it's part of the transparency-inspection-adaptation cycle. The team inspects the plan every day, and adjusts it as they uncover new information about the project.

The sprint is over when the timebox expires. The same is true of any timeboxed event. Answer D seems correct because the sprint retrospective is typically the last thing that the team does during the sprint. But if the timebox expires before the team has a chance to hold their retrospective, the sprint still ends. (And that's a good opportunity for the Scrum Master to help them understand how to plan better next time.)

9. Answer: B

The Product Owner is allowed to cancel the sprint before the timebox is over. But this can waste a lot of the team's energy, and cause people in the company to lose trust in the team, so it should be extremely rare.

The purpose of the Daily Scrum questions is to give everyone a good idea of how each person on the team is progressing, so they can help identify problems with the current plan that need to be fixed. But none of the questions are about failures—that could create a negative and possibly embarrassing environment, and detract from the environment of openness.

10. Answer: B

The project manager is having trouble with the Scrum value of respect. Barry gave an honest assessment of the work that needed to be done, but the project manager ignored it and demanded a shorter deadline even though there was no business need to apply the extra pressure. That's disrespectful.

It's also extremely demotivating!

11. Answer: C

When the team holds their sprint planning meeting at the start of the sprint, the first thing they do is to decide on the sprint goal, a brief description of the objective of the sprint that will be met by completing backlog items.

## Answers

# ~~Exam Questions~~

### 12. Answer: D

The core of empirical process control theory—the theoretical underpinning for Scrum—is the transparency-inspection-adaptation cycle. In the inspection step, the Scrum team members frequently examine the scrum artifacts, as well as their current progress towards the sprint goal. They try to detect any differences between where they are and where they expected to be, so that they can take action (which is what adaptation is all about).

### 13. Answer: A

The increment is what the team actually delivered during the sprint. The items that the team intended to complete at the beginning of the sprint often don't exactly match up with the work they actually did. That's a good thing—it means the team used the information they learned along the way to change direction. The increment is the product of what actually happened, and the team doesn't know exactly what the current sprint's increment will contain until they've delivered it.

↑  
We learned earlier that Scrum is an incremental methodology. It's the delivery of successive increments that makes it incremental.

### 14. Answer: B

The sprint goal helps the team focus on the specific objective that they planned on accomplishing during the sprint.

Retrospectives and Daily Scrums can be very useful, but holding meetings is not typically a tool that teams use to help focus.



### 15. Answer: A

The product backlog is the single source for product requirements, and it's maintained by the Product Owner. When the Product Owner discovers a new requirement, she adds it to the product backlog.

Answers

## ~~Exam Questions~~

16. Answer: B

Scrum teams determine what work will be done during the sprint by decomposing backlog items into tasks. The other answers are also things that the team does during sprint planning, but it's not how the team determines what work they're going to do.

17. Answer: D

During the sprint review, the team meets with the business users and customers to review what they've done and collaborate on what the next sprint will accomplish. They'll review the increment, which typically involves demonstrating the working software that they built. They'll also discuss the backlog and update it to show the items that they'll probably work on in the next sprint. The sprint review isn't for looking back at what happened and making improvements—that's what the sprint retrospective is for.

The updated backlog only reflects the probable items that will be worked on during the next sprint. That's not the same thing as committing to build certain items—the team will come up with the sprint backlog during sprint planning, and the Product Owner can make changes to it during the sprint.



DID YOU GET SOME OF THE QUESTIONS WRONG? THAT'S **ABSOLUTELY OKAY!** JUST KEEP TRACK OF THEM, AND MAKE SURE TO GO BACK AND RE-READ THE PARTS OF THE CHAPTER THAT COVERED THEM.

When you get a question wrong now, that actually makes it more likely that you'll get a question on the same topic right when you take the exam!

## Exam Questions

**These practice exam questions will help you review the material in this chapter. You should still try answering them even if you're not using this book to prepare for the PMI-ACP certification. It's a great way to figure out what you do and don't know, which helps get the material into your brain more quickly.**

1. Burndown charts are used for all of the following except:

- A. Helping the team understand how many points have been delivered in a given sprint
- B. Helping the team understand how many points are left to be delivered before the end of a sprint
- C. How many points each team member has delivered
- D. Whether or not the team will deliver everything they committed to in a given sprint

2. The total number of story points delivered in a sprint is called the sprint \_\_\_\_\_

- A. Increment
- B. Review
- C. Ideal time
- D. Velocity

3. Jim is a Scrum master on a Scrum project in a media company. His team has been asked to build a new advertising presentation component. They've been working together for 5 sprints and have seen increased velocity over the past two sprints. The team gets together on the first day of the sixth sprint for a planning session. In that session they use a method where the team discusses the features that will be built with the Product Owner, provide estimates on cards, and adjust their estimates as a group until they converge on a number they all agree to.

Which of the following **BEST** describes the practice they are using?

- A. Planning poker
- B. Convergence planning
- C. Sprint planning
- D. Analogous estimation

## Exam Questions

**4. What acronym can be used to describe good user stories?**

- A. INSPECT
- B. ADAPT
- C. INVEST
- D. CONFIRM

**5. Velocity can be used for all of the following except:**

- A. To measure team productivity over multiple sprints
- B. To compare teams to each other and find out who's more productive
- C. To understand how much a team can do when they're estimating a sprint
- D. To understand if the team is committing to too much or too little

**6. Which tool is used to visualize scope changes?**

- A. Velocity Bar Charts
- B. Burn-up Charts
- C. Cumulative Flow Charts
- D. Scope Histograms

**7. How are user stories commonly written?**

- A. As a <persona> I want to <action>, so that <benefit>
- B. As a <resource>, I want to <goal>, so that <rationale>
- C. As a <role> I want to <action>, so that <benefit>
- D. None of the above

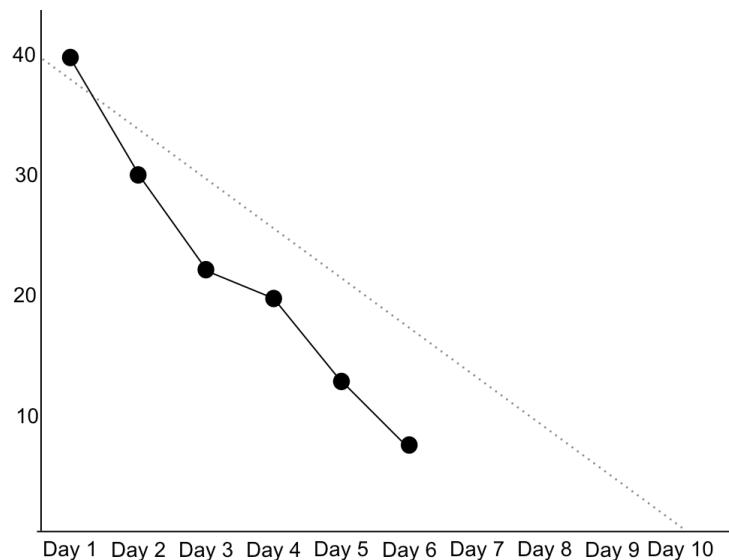
**8. Which of the following BEST describes a taskboard?**

- A. The Scrum Master uses them to see if the team is following the plan
- B. They are used to identify new tasks during a sprint
- C. They show the total number of points accomplished in a sprint
- D. They show every task in the sprint backlog and its current state

## Exam Questions

9. Which of the following BEST describes Derby and Larsen's retrospective method:

- A. Set the stage, gather information, decide what to do, document decisions
- B. Check in, create timelines, interpret the data, decide where to focus, measure
- C. Set the stage, gather data, generate insights, decide what to do
- D. ESVP, Color Code Dots, Short Subjects



10. What can you tell about this sprint by looking at the burndown chart above?

- A. The sprint is ahead of schedule
- B. The sprint is behind schedule
- C. The project is in trouble
- D. The velocity is too low

11. What is the difference between a burndown and a burn-up chart?

- A. Burndown charts subtract story points from the total number committed while burn-up charts start at 0 and add the story points to the total as they're completed
- B. Burndown charts have a line for scope that tells you how much is added or deleted as you go
- C. Burn-up charts have a trend line to show you the constant rate of completion
- D. Burn-up charts and burndown charts are the same

## Exam Questions

12. Which of the following is the BEST tool for determining the root cause of a problem?

- A. Personas
- B. Velocity
- C. Fishbone diagrams
- D. Short Subjects

13. A Scrum team for medical software company took all of the user stories in their product backlog and arranged them on the wall according to how important the functionality is to a successful product. Then they used that information to determine which features to work on first. What term best describes the practice they were using?

- A. Release planning
- B. A walking skeleton
- C. Velocity planning
- D. Story mapping

14. The process of identifying requirements based on user stories is often referred to as

- A. Card, Call, Confession
- B. Story, Conversation, Product
- C. Card, Conversation, Confirmation
- D. Card, Test, Documentation

15. ESVP stands for

- A. Executive, Student, Vice President
- B. Explorer, Student, Vacationer, Prisoner
- C. Explorer, Shopper, Vacationer, Practitioner
- D. Explorer, Shopper, Vacationer, Prisoner

16. Your Scrum team began measuring velocity over the past 3 sprints and recorded the following numbers: 30, 42,

23. What can you tell about the team from these measurements?

- A. The team is still determining its story point scale
- B. The team is becoming less productive and actions must be taken to correct this
- C. The velocity is evening out over multiple sprints
- D. The velocity has not been measured correctly

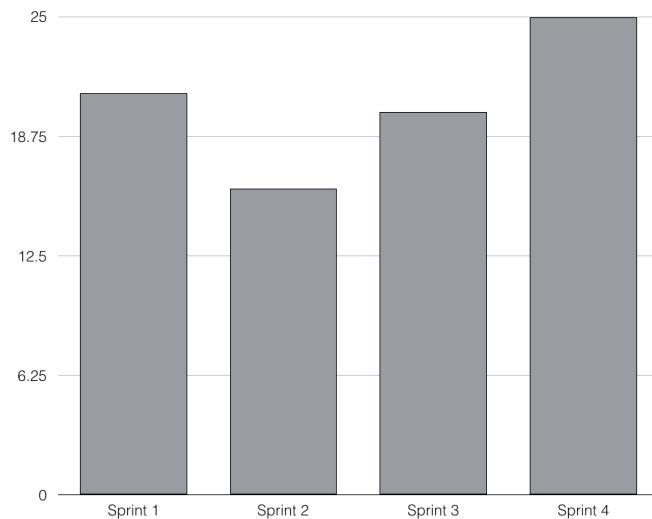
## Exam Questions

17. Which of the following **BEST** describes a tool for identifying a representative software user and describing his or her needs and motivations?

- A. Ishikawa diagrams
- B. User Identification Matrices
- C. Personas
- D. Story Mapping

18. Scrum Planning tools help Scrum teams make project decisions...

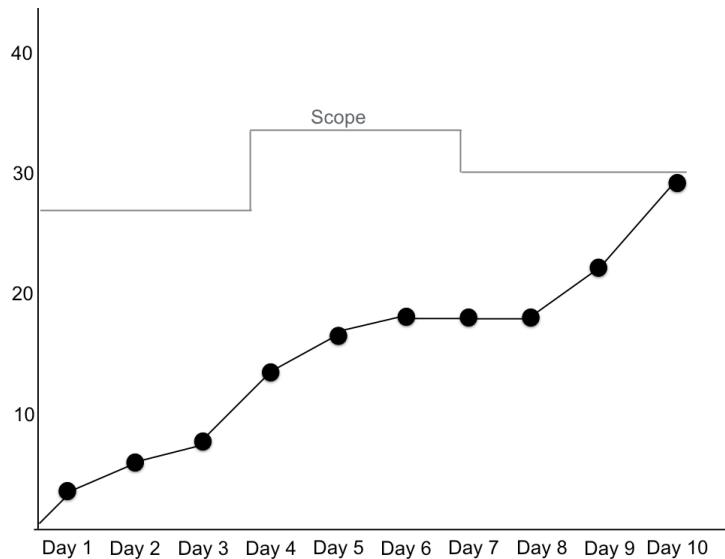
- A. As early as possible
- B. Just in time
- C. At the last responsible moment
- D. Responsively



19. What can you learn about this project from looking at the velocity bar chart above?

- A. The project has too much velocity
- B. The team is delivering more story points as the project goes on
- C. Too many scope changes are happening
- D. The project is running behind

## Exam Questions



20. What can you learn about this project by reading the burn-up chart above?

- A. Some story points were added to the project scope on day 4 and some were removed on day 7
- B. The team is adding stories to the scope each day of the sprint
- C. The team is not making progress
- D. Stories were added to the project on day 4 and that caused a delay on day 8

## ~~Exam Questions~~

Here are the answers to the practice exam questions in this chapter. How many did you get right? If you got one wrong, that's okay—it's worth taking the time to flip back and re-read the relevant part of the chapter so that you understand what's going on.

### 1. Answer: C

Burndown charts help the whole team see how much they've accomplished and how much is left to do. They do not show individual team member productivity.

### 2. Answer: D

Teams measure the total number of points they deliver in each sprint as velocity. Velocity can be measured across multiple sprints to help teams get better at estimating and committing to work. Velocity is often used to show the effect of process changes as well.

### 3. Answer: A

The team is planning using planning poker. They are doing sprint planning, but since the question was specific about how they were planning, that's not the best answer. They're also doing analogous estimation, but that's not the BEST answer for this question because it is not a generally accepted Scrum practice. Convergence planning is a made-up name, so don't be confused by counterfeit practice names like these.

### 4. Answer: C

The acronym INVEST stands for Independent, Negotiable, Valuable, Estimatable, Small, and Testable. A good user story should be all of these things.

### 5. Answer: B

Since velocity is the sum of all of the story points estimated in a given sprint, it can only be used within one team. Another team would have a different scale since their story point values would come from their sprint planning discussions.

# Answers

## ~~Exam Questions~~

6. Answer: B

Burn-up charts show scope as a separate line on the chart and make it easy to see when scope is added or removed.

7. Answer: C

The correct template for a user story is As a <role>, I want to <action> so that <benefit>. Although the other answers were close, there's a big difference between resources, personas and roles. Roles help you to identify the various perspectives that will need to be accounted for in the application.

8. Answer: D

Taskboards show everyone on the team the status of each task that's in the sprint backlog. It's a way to make sure that everyone has the same information about what's available to work on, what's in progress, and what the team has been completed.

9. Answer: C

Retrospectives start by setting the stage and making sure that the whole team is included in the conversation. Then the team reviews the information they can gather from the sprint. Once everybody agrees on the facts, they use that information to generate insights on what might be causing problems for the team. Once they've identified the problem, they can figure out what they want to do to try to fix the issue.

10. Answer: A

The dotted line shows a constant burn rate for the sprint. It's normal for the number of points to fluctuate and be to the left of the line at some points and to the right of it at others. In this case, the actual completion line is far to the left of the dotted line and that indicates that team is burning story points faster than the constant rate necessary for on time completion.

11. Answer: A

Burndown and burn-up charts track the same information, the rate at which the team is completing story points. Burndowns track that rate by subtracting completed points from the total each day. Burn-ups track it by adding the number of points to the total each day.

## ~~Exam Questions~~

12. Answer: C

Ishikawa diagrams are tools that are used to categorize common root causes for defects and issues in projects and help you to determine which issues fit into which categories. They're often used to help you find out where you might improve the way you work so that you can fix process problems.

13. Answer: D

The team was mapping their stories so that they could determine the best sequence for delivering them.

14. Answer: C

Card, Conversation, Confirmation is a good way to remember that user stories cards are just reminders to talk to the people who have the information you need for building a story. This is one way Scrum teams value face-to-face communication over comprehensive documentation. They try to write down only what they need out of the conversations they have about each user story card.

15. Answer: D

ESVP is used as a means of checking in with each team member at the start of a retrospective. By asking each team member to tell if they are approaching the retrospective as an explorer, shopper, vacationer, or prisoner, the team can engage each team member in the conversation and let everybody know each person's mindset from the beginning of the discussion.

16. Answer: A

It's very common for teams to have a lot of variance when they're first figuring out the scale they'll use for estimation. It's important not to be alarmed with velocity numbers vary. The goal of measuring velocity is to make the team aware of how much they are doing with each sprint so they get better at figuring out how much to take on in future planning sessions.

17. Answer: C

Personas are fake users that the team creates to help them understand how a user might be feeling when they use the software they're building.

## Answers

# ~~Exam Questions~~

18. Answer: C

Scrum teams know that making too many decisions up front, when you don't know as much about the situations that will come up in a project, can cause more problems than it solves. That's why they focus on making decisions at the last responsible moment.

19. Answer: B

This team is delivering more points with each successive sprint. That's a great trend to observe over a project. It can mean that the team is continuously improving as they work.

20. Answer: A

Since burn-up charts show the scope line separately from the burn-up line, it's easy to see when stories are re-estimated, added, or taken away from scope (as opposed to being completed as part of daily work).

## Exam Questions

**These practice exam questions will help you review the material in this chapter. You should still try answering them even if you're not using this book to prepare for the PMI-ACP certification. It's a great way to figure out what you do and don't know, which helps get the material into your brain more quickly.**

**1. Which of the following is NOT true about how XP teams plan their work?**

- A. XP teams often self-organize by having team members pull their next tasks from a pile of index cards
- B. XP teams use week-long iterations
- C. XP teams focus on code, so they do very little planning
- D. XP is iterative and incremental

**2. How do XP's values and practices help teams embrace change?**

- A. By helping them build code that's easier to modify
- B. By placing strict limits on how users request changes
- C. By enforcing a change control process
- D. By limiting the amount of contact between the business users and the team

**3. Amy is a developer on a team that builds mobile apps for commuters. They've adopted XP, but instead of using weekly cycles, quarterly cycles, and slack, they hold a Daily Scrum, do sprint planning, and hold retrospectives. Which of the following BEST describes Amy's team?**

- A. They do not do adequate planning
- B. They are in the process of adopting XP
- C. They use a hybrid of Scrum and XP
- D. They are transitioning from XP to Scrum

**4. Which of the following are NOT common to both XP and Scrum?**

- A. Roles
- B. Iterations
- C. Respect
- D. Courage

# Exam Questions

5. Which of the following is a valid way for XP teams to do estimation?

- A. Planning poker
- B. The planning game
- C. Traditional project estimation techniques
- D. All of the above

6. Evan is a project manager on an XP team. He noticed that over the last few weekly cycles, everyone had their headphones on and listened to music all day while coding. Evan is concerned that the lack of osmotic communication is making the workspace less informative. He called a team meeting to explain XP's informative workspace practice, and suggested that they adopt a rule against wearing headphones at work.

Which BEST describes this situation?

- A. The team is not performing the informative workspace practice
- B. Evan has a responsibility to help the team adopt XP, and is demonstrating servant-leadership
- C. Evan needs to improve his understanding of the XP values
- D. The team is using a hybrid of Scrum and XP

7. Which of the following is true about test-driven development?

- A. Unit tests are written immediately after writing the code that they test
- B. Writing unit tests first can have a profound impact on the design of the code
- C. Test-driven development is used exclusively by XP teams
- D. Writing unit tests causes the whole project to take longer because the team spends more time writing code, but it's worth it for the extra quality.

8. What is involved in continuous integration?

- A. Setting up a build server that constantly integrates new code into a working folder and alerts the team on build or test failures
- B. Using iteration to continuously produce working software
- C. Each person on the team keeps their working folders up to date with the latest code from the version control system
- D. Continuously reducing technical debt by improving the structure of the code without modifying its behavior, and integrating those changes back in.

## Exam Questions

**9. Which of the following is NOT an example of an information radiator?**

- A. The team sitting together so they can absorb information from conversations that happen around them
- B. Posting a burndown chart in a place where everyone can see it
- C. Keeping the team's task board on a wall in a common area
- D. Maintaining a list of stories the team has finished so far in the weekly cycle on a whiteboard that everyone can see

**10. The following practices all establish feedback loops for XP teams except:**

- A. Test-driven development
- B. Continuous integration
- C. 10-minute build
- D. Stories

**11. Why do teams use wireframes that are low fidelity?**

- A. Users give more feedback when a user interface mock-up looks less polished
- B. Agile teams rarely build software that contains detailed audio
- C. The team only builds and reviews one set of wireframes per weekly cycle
- D. They're only used for less complex user interfaces, and XP teams value simplicity

**12. Which of the following promotes sustainable development?**

- A. Thoroughly planning the next six months of work so that there are no surprises for the team
- B. Making sure everyone gets everything right the first time they build it, so no rework is required
- C. Making sure everyone leaves on time and nobody feels pressured to work weekends, so the team doesn't burn out
- D. Setting tight deadlines, so everyone is motivated to meet them

**13. Which of the following is NOT a benefit of pair programming?**

- A. Everyone on the team gets experience working with every part of the system
- B. There are two sets of eyes on every change
- C. Pairs help each other stay focused
- D. People take turns working, so fatigue is reduced

## Exam Questions

14. Joanne is a developer on a team that constantly refactors, does continuous integration, writes unit tests first, and does many other XP practice. What BEST explains this team's culture?

- A. They have a strict manager who enforces the rules of XP
- B. They have good habits
- C. They are highly disciplined
- D. They are worried about getting fired if they don't work this way

15. What happens when a build takes longer than 10 minutes to run?

- A. It causes errors in the packaging process
- B. Team members run the build infrequently
- C. Merge conflicts occur that are difficult to resolve
- D. The unit tests fail

16. Joy is a developer working on a team building a mobile operating system. She tried to commit code for a feature that she's been working on, but the version control system won't let her complete the commit until she resolves many conflicts. Which practice will BEST prevent this problem in the future?

- A. Sustainable pace
- B. Continuous integration
- C. 10-minute build
- D. Test-driven development

17. Kiah is a developer on an XP project. Her team is doing quarterly planning. One of the features is extremely important, and failing to deliver it will have serious consequences for the project. Kiah is the expert on this part of the project, and she'll be the one doing the programming work. She feels that the design relatively straightforward, and she's pretty sure that she knows exactly how to build it.

What is the BEST action for Kiah and her team to take?

- A. Add a story for an architectural spike to an early weekly cycle
- B. Build a low-fidelity wireframe to get early feedback
- C. Add a story for a risk-based spike to an early weekly cycle
- D. Do extra usability testing

~~Answers~~~~Exam Questions~~

Here are the answers to the practice exam questions in this chapter. How many did you get right? If you got one wrong, that's okay—it's worth taking the time to flip back and re-read the relevant part of the chapter so that you understand what's going on.

## 1. Answer: C

XP teams might not focus on project management to the extent that Scrum teams do, but XP is still an iterative and incremental methodology that values self-organizing teams. Those reasons are part of why it's an agile methodology.

## 2. Answer: A

It's a lot easier for teams to embrace change when they know those changes won't be a headache for them to make. XP helps with this by including practices and values that help teams build code that's easier to modify.

This also helps keep rework from causing quite so many bugs.

## 3. Answer: A

Teams that use a Scrum/XP hybrid have replaced the planning-related XP practices with a complete implementation of Scrum. Amy's team hasn't done that. They adopted some of the Scrum practices, but since they dropped the quarterly cycle but didn't add any sort of product backlog, they've pretty much stopped doing any sort of long-term planning.

They also don't have a Scrum Master or Product Owner. What other Scrum practices have they ignored? What do you think this all of this indicates about the mindset among Amy's team members?

## 4. Answer: A

XP and Scrum both value respect and courage, and both use timboxed iterations for planning. But XP has no fixed roles, while Scrum teams must always have team members who fill the Product Owner and Scrum Master roles.

The planning game is a practice that was part of an early version of XP. It guided the team through creating an iteration plan by helping them decompose stories into tasks and assign them to team members. It's still in use by a few teams, but planning poker is a lot more popular.

## 5. Answer: D

XP teams use many different techniques for estimating, and there is no specific rule that says the team must use any specific technique. So all of the techniques listed are valid. So is having the team simply meet and talk about how long they think the work will take.

# Answers

## ~~Exam Questions~~

6. Answer: C

It may seem weird to talk about feelings at work, but they're actually really important for getting a team to run smoothly. It's really difficult to innovate and do the difficult intellectual and creative work when you're distracted by negative feelings like resentment.

Evan has decided that the team is doing something wrong because they are not following his personal interpretation of the XP practices. When he called the team meeting and proposed a rule against wearing headphones, he was ignoring the fact that this is how the team prefers to work. This is very disrespectful, and shows that he doesn't trust them to find an effective way to work. Respect is a core XP value, and when people ignore it, that hurts the whole team by stirring up resentment and other negative feelings.

7. Answer: B

When you write unit tests first, it can have a profound impact on the design of the code. The reason is that when you're writing the tests, awkward constructions and unnecessary coupling between units can become much more apparent. Test-driven development is not exclusive to XP teams—many teams do it, even on waterfall projects. And even though it requires developers to write more code overall, most people who do test-driven development find that it actually saves time overall because it makes fixing bugs and making changes much, much faster.

The total time teams spend writing the extra code for the unit tests is more than made up for by the time saved making changes. This isn't a long-term effect—it's easily noticeable within days or even hours.

8. Answer: C

Continuous integration is a straightforward practice that can have an outsized effect on the project. The team continuously integrates the latest code from the version control system into their working folders every few hours. This prevents them from having to deal with time-consuming and annoying merge conflicts that span many files at the same time.

9. Answer: A

An information radiator is any sort of visual tool or display that conveys useful information about the project and is highly visible so that team members can't help but absorb the information on it as they walk by. The first answer describes osmotic communication.

Osmotic information and information radiators are both tools that can help with the informative workspace practice.

10. Answer: D

Stories are really useful, but they don't really establish a feedback loop the way some practices like test-driven development, continuous integration, or 10-minute builds do. The reason is that most of the time the story doesn't change very much once it's written, so there's no opportunity for feeding information back into it repeatedly. The other three practices establish feedback loops that occur many times over the course of a weekly cycle.

## Answers

~~Exam Questions~~

## 11. Answer: A

Wireframes are often low fidelity, which means they look like rough sketches or hand-drawn mock-ups. Users are often a lot more willing to give feedback about a sketch that looks like it was easy to draw than they are for a highly polished, accurate mock-up, because it feels intimidating to ask for changes to a design that looks like it required a lot of work. A low fidelity wireframe can still capture all of the detail of a rich user interface, and is no more complex or simple than a mock-up that's highly polished.

Low fidelity wireframes are usually a lot less work than ones that are a lot more polished, which lets teams review several different versions with the users. They can help the team try out several iterations of the same UI in a single weekly cycle.

## 12. Answer: C

Sustainable development happens when the team works at a pace that they can comfortably manage, which almost always means working normal 40-hour weeks.

A lot of teams have one or two people who make a point of staying late to show how "committed" they are (or to impress the boss). This often puts a lot of pressure on everyone else to stay late, too, which can easily create an unsustainable pace and burn the team out.

## 13. Answer: D

Pair programming is a very effective and efficient practice because two people working at the same computer keep each other focused, constantly collaborate, catch many problems, and get more done than if they were working alone. But both people are always working together at the same time—they don't take turns working.

## 14. Answer: B

XP teams use great practices every day because they have great habits. They don't do it out of a sense of discipline, and they certainly don't do it out of fear. Raw discipline and fear can cause temporary, short-term changes to the way teams work, but eventually teams revert back to their habits.

The way to build great habits is to try out the practices, see great results, and use those to slowly change the way you think about your work. That's why adopting the XP practices helps get the team into the XP mindset.



KENT BECK, THE GUY WHO CREATED XP, ONCE SAID, "I'M NOT A GREAT PROGRAMMER. I'M JUST A GOOD PROGRAMMER WITH GREAT HABITS."

# Answers

## ~~Exam Questions~~

15. Answer: B

When an automated build takes a really long time to run, the team runs it a lot less frequently. That means the team gets less frequent feedback about the state of the build.

16. Answer: B

Continuous integration is a simple practice in which the team members keep their working folders up to date with the latest changes in the version control system. That prevents many merge conflicts, which can needlessly waste the team's time and cause a lot of frustration.

17. Answer: C

A risk-based spike is a spike solution that the team undertakes specifically to reduce project risk. In this case, Kiah already knows the technical approach that she will take, so there's no need for an architectural spike. But since the risk for this particular feature is very high, it makes sense to add a risk-based spike to a weekly cycle early in the project. That way the risk will be eliminated early on.

↑  
And if it turns out there are  
unforeseen problems, it's a lot  
better to discover them early in  
the project than later.

## **Chapter Review**

*As explained in the study plans at the start of this book, it's best to wait to take the chapter review quizzes until you have read through the entire book at least once.*

1. What is most important for your agile team to continuously focus on?
  - A. Getting the right answers
  - B. Understanding their tasks
  - C. Defining their tasks
  - D. Measuring their performance
  
2. What wouldn't be a key focus of your agile approach?
  - A. Increasing return on investment
  - B. Expecting change and uncertainty
  - C. Measuring progress
  - D. Working incrementally
  
3. You've been asked to recommend how a team should transition to using agile. How would you reply?
  - A. Try out some agile practices first to see if they are helpful in your situation.
  - B. Hire the best ScrumMaster you can afford and make that person accountable for the transition.
  - C. Identify a successful agile team and copy what they are doing.
  - D. Learn agile values and principles and use them to guide which practices to adopt in your situation.
  
4. On a Scrum team, whose responsibility is it to keep the priorities in the product backlog up to date as changes occur?
  - A. Product owner
  - B. ScrumMaster
  - C. Sponsor
  - D. Development team
  
5. As an agile leader, what would be your highest priority?
  - A. Resolving conflicts and disagreements
  - B. Keeping the team members well fed
  - C. Making sure the team members understand what the project is trying to accomplish
  - D. Controlling the team's performance
  
6. What isn't something that your agile team should focus on?
  - A. Reflecting on their mistakes and how to improve
  - B. Using feedback loops to discover the weaker performers
  - C. Failing fast with learning
  - D. Learning through trial and error

7. Your team is tasked with developing a breakthrough medical device, and they don't know what the final product will look like. How would you advise them to proceed?
  - A. Try the most promising approaches in short iterations and learn as you go.
  - B. Perform a risk-based spike.
  - C. Ask the customer for more detailed information about the product.
  - D. Follow the project charter as closely as possible.
8. The sponsor wants to know if the product you're building will be ready to demo at a trade show. What do you tell her?
  - A. It will be ready when it's ready.
  - B. We'll get your top-priority functionality done by then.
  - C. We'll let you know as soon as our velocity has stabilized.
  - D. That depends on your budget.
9. As ScrumMaster, you assess that the competitive market has shifted and the product the team is building is no longer viable. What should you do?
  - A. Request that the product owner immediately re-prioritize the backlog.
  - B. Cancel the project.
  - C. Alert the team that they can expect to be assigned to a new project soon.
  - D. Ask the product owner if the viability of the project has changed.
10. Which of the following would NOT an advantage of limiting your team's work in progress?
  - A. It reduces the potential need to rework a large collection of flawed, partially completed items.
  - B. It helps optimize throughput to make processes work more efficiently.
  - C. It brings bottlenecks in the production process to the surface so they can be identified and resolved.
  - D. It maximizes resource utilization to make processes work more efficiently.
11. The relationship between leadership and management in agile methods is:
  - A. Leadership replaces all aspects of management.
  - B. Leadership is subsidiary to management.
  - C. Management and leadership are used together.
  - D. Management and leadership are incompatible.
12. On a typical agile team, who has the best insight into task execution?
  - A. Project manager
  - B. Team members
  - C. ScrumMaster
  - D. Agile coach
13. The four primary roles of a servant leader include:
  - A. Shielding team members from interruptions
  - B. Resolving conflicts
  - C. Determining which stories to include in an iteration
  - D. Assigning tasks to the team members

14. In Scrum, the definition of done is created with the input of everyone except the:
  - A. Development team
  - B. Product owner
  - C. ScrumMaster
  - D. Process owner
15. In the lean approach, which of the following wouldn't be considered an example of one of the seven forms of waste?
  - A. The handoff between coding and testing
  - B. Testing the code
  - C. Code that is waiting for testing
  - D. Assigning a developer to work on two projects at the same time
16. Which of the following is one of the planned opportunities for inspection and adaptation in the Scrum method?
  - A. Velocity review meeting
  - B. Sprint risk meeting
  - C. Daily scrum
  - D. Retrospective planning meeting
17. The agile triangle of constraints is said to be inverted from the traditional triangle because it allows:
  - A. Scope and time to vary instead of cost
  - B. Cost and time to vary instead of scope
  - C. Scope and cost to be fixed instead of time
  - D. Scope to vary while time and cost are fixed
18. Which of the following Agile Manifesto principles reflects the agile focus on team empowerment?
  - A. Working software is the primary measure of progress.
  - B. Welcome changing requirements, even late in development.
  - C. Simplicity—the art of maximizing the amount of work not done—is essential.
  - D. Build projects around motivated individuals.
19. The Kanban pull system means that:
  - A. Kanban team members “pull” work from each other, pairing up as needed.
  - B. Each time a work item is completed, the next work item is “pulled” into that stage of the process.
  - C. Iterations are “pulled” into the process as needed to keep the work organized.
  - D. Kanban teams have shorter work queues, which means that the work takes longer to complete (as shown by Little’s Law).
20. Which of the following isn’t a core aspect of the agile mindset?
  - A. Welcome change
  - B. Learn through discovery
  - C. Respect the process
  - D. Deliver value continuously



## **Answers**

**1. Answer: B**

**Explanation:** This question tests your high-level understanding of knowledge work versus industrial work. Getting the right answers, defining tasks, and measuring performance are emphasized more in industrial work than knowledge work. Knowledge workers focus instead on understanding their tasks. Although all of these activities are performed on an agile project, notice that the question asks what the team should “continuously focus on.” This is a clue that the question is looking at the team’s high-level process, not specific parts of their work.

**2. Answer: C**

**Explanation:** The best way to approach this question is by a process of elimination. You should be able to recognize that three of the options are essential elements of the agile mindset: increasing return on investment, expecting change and uncertainty, and working incrementally. Once you have eliminated those three options, then the remaining option (measuring performance) must be the correct answer. Although agile teams certainly measure their progress, this isn’t one of the basic tenets of agile.

**3. Answer: D**

**Explanation:** This question tests your understanding of “being” agile versus “doing” agile. We need to first understand and integrate the mindset behind agile practices before we can use them effectively. Therefore the best way to transition to using agile is to learn agile values and principles and use them to guide which agile practices to adopt in your situation.

**4. Answer: A**

**Explanation:** One of the most basic things you should understand about agile teams (whether in Scrum or any other agile methodology) is that it is the product owner/customer who prioritizes the product backlog and keeps the priorities up to date. That’s because the product owner represents the business and therefore understands the value the product is expected to deliver better than the other members of the team, who are focused on other areas.

**5. Answer: C**

**Explanation:** Like many questions you will encounter on the PMI-ACP exam, you might find this question to be a bit tricky. When faced with a tricky question, try to rule out the incorrect answers first. “Keeping the team members well fed” wouldn’t be the leader’s responsibility except in an emergency situation, since one would assume that normally the team members could seek out food and feed themselves. “Resolving conflicts and disagreements” and “controlling the team’s performance” are done by an agile leader as needed, but are they really the leader’s HIGHEST priority? Probably not. (Also, the term “controlling” implies a command-and-control approach rather than servant leadership.) That leaves “making sure the team members understand what the project is trying to accomplish.” If you think about it, this is simply another way of stating one of the four primary duties of a servant leader, to “communicate and re-communicate the project vision.” So this is the correct answer.

**6. Answer: B**

**Explanation:** All the choices are important aspects of the agile mindset except using feedback loops to discover the weaker performers on the team. Agile teams use feedback loops to improve their ability to deliver value, not to critique the performance of individual team members—that wouldn’t be aligned with the agile values of respect and empowering the team.

**7. Answer: A**

**Explanation:** In the uncertain environment of knowledge work projects, the agile method is to try the most promising approaches in short iterations and learn as we go. (This is a key agile theme that is emphasized throughout the book.) A risk-based spike and gathering more information might be good ideas, but they aren’t the BEST answer. Agile charters usually don’t provide much detail or technical guidance for the team.

**8. Answer: B**

**Explanation:** Like many questions you will encounter on the PMI-ACP exam, this question tests your grasp of agile concepts in an indirect way. In this case, you need to know that agile teams will typically fix time and cost and allow scope to vary, as reflected in the agile triangle. When balancing constraints, the agile approach is to get the highest-priority product functionality done by the customer’s deadline.

**9. Answer: D**

**Explanation:** This question tests your understanding of agile team roles. In reading the scenario, you should have noticed that it implies the ScrumMaster is stepping outside of their role, since that role doesn’t include assessing the value of the project. The ScrumMaster can’t cancel the project because they don’t make those kinds of decisions. They also wouldn’t direct the product owner what to do when. The only person on a Scrum team who has the information needed to assess the viability of the project is the product owner. So the correct answer is “ask the product owner if the viability of the project has changed.”

**10. Answer: D**

**Explanation:** Since this question is looking for the answer that is NOT an advantage of limiting work in progress (WIP), if an option is true, that means it is not the answer we are looking for. Limiting WIP does reduce the potential need for rework. It also improves process efficiency and helps us find production bottlenecks. The only option listed here that is NOT an advantage of limiting WIP is the one that refers to maximizing resource utilization. Limiting WIP focuses on optimizing throughput, not resources, and we may actually decrease resource optimization to get more throughput.

**11. Answer: C**

**Explanation:** Agile methods employ a combination of management and leadership. Leadership neither totally replaces nor is subsidiary to management—and since the two approaches can be used together, they aren’t incompatible.

**12. Answer: B**

**Explanation:** Agile’s servant leadership approach recognizes that the “doers” of the work, the team members, are closest to the work and therefore have the best insight into its execution. This is why agile project managers, ScrumMasters, and coaches defer to the team’s decisions about how best to execute the work.

**13. Answer: A**

**Explanation:** The four primary roles of a servant leader are shielding the team from interruptions, removing impediments to progress, communicating the project vision, and “carrying food and water.” Although we haven’t discussed the other three answer options in chapter 1, we’ll see in later chapters that they aren’t correct. Servant leaders don’t take the lead in resolving conflicts—they first let the team try to resolve issues on their own. The team determines which stories to include in an iteration, rather than accepting the stories chosen by the team leader. Finally, task assignment isn’t a servant leadership role; agile teams are encouraged to select their own work.

**14. Answer: D**

**Explanation:** The whole team, including the development team, product owner, and ScrumMaster, is responsible for creating the shared definition of done. Since “process owner” is a made-up term, this is the correct choice for someone who would NOT be involved in defining done.

**15. Answer: B**

**Explanation:** Testing the code is the only one of these options that wouldn’t be considered waste in lean. The seven wastes of lean are partially done work, extra processes, extra features, task switching, waiting, motion, and defects. Handoffs are an example of motion, code that is waiting for testing is partially done work, and a developer who is working on multiple projects is an example of task switching.

**16. Answer: C**

**Explanation:** The meetings that are Scrum’s planned opportunities for inspection and adaptation are the sprint planning meeting, daily scrum, sprint retrospective, and sprint review. Velocity review meetings, sprint risk meetings, and retrospective planning meetings are not recognized Scrum events.

**17. Answer: D**

**Explanation:** Unlike the traditional constraint triangle, in which scope is fixed and time and cost may need to bend to achieve that planned scope, agile teams typically allow scope to vary within fixed parameters of cost and time. In other words, they aim to deliver the most value they can by X date within X budget.

**18. Answer: D**

**Explanation:** Agile Manifesto principle five, “Build projects around motivated individuals” addresses the importance of giving teams the environment and support they need, and trusting them to get the job done. Supporting and trusting the team members means recognizing that they are experts at what they do, and that they can work most effectively if they are empowered to plan and organize their own work.

**19. Answer: B**

**Explanation:** In Kanban’s “pull system,” each time the team completes an item of work, it triggers a “pull” to bring in the next item to that stage. The other answer options are all incorrect. Although Kanban teams do tend to have shorter work queues (due to the pull system and limiting WIP), Little’s Law actually demonstrates that shorter queues reduce how long it takes to complete the work, rather than lengthening it.

20. **Answer:** C

**Explanation:** The concepts of welcoming change, learning through discovery, and continuous delivery of value are all core aspects of the agile mindset. That leaves the option “respect the process” as the outlier. Also, the first value of the Agile Manifesto—“individuals and interactions over processes and tools”—is another indication that “respect the process” isn’t part of the agile mindset.

## **Chapter Review**

1. What isn't one of the practices your team can use to ensure they get feedback about the product being built?
  - A. Pair programming
  - B. Releases
  - C. Wideband Delphi
  - D. Stand-up meetings
2. In comparison to traditional projects, the agile approach to contracts doesn't require:
  - A. More detailed specifications
  - B. More customer involvement
  - C. More trust
  - D. More feedback
3. To test how people will respond to the system under real-world conditions, we would perform \_\_\_\_\_.
  - A. User factoring
  - B. Continuous testing
  - C. Test-driven integration
  - D. Usability testing
4. The contractor on your project doesn't understand the team's agile approach. As team coach, what should you do?
  - A. Request that the PMO provide a week-long agile workshop for all potential contractors.
  - B. Ask the product owner whether educating this contractor is a project requirement.
  - C. Gather the team to discuss the contractor's role and decide how much they need to know about agile.
  - D. You don't need to do anything, since the contractor isn't on the delivery team.
5. Your team is developing an online game that will have three beta (test) releases before launch. Which feature would not be included in the first beta release?
  - A. Beta player sign-up and log in interface
  - B. Password authentication
  - C. Refer-a-friend marketing campaign
  - D. Options for giving feedback to developers
6. The sponsor wants to use earned value metrics to measure the team's progress. You remind her that:
  - A. The team prefers to use information radiators.
  - B. The project plan isn't finalized yet.
  - C. We need to establish a stable velocity first.
  - D. Earned value metrics won't reveal whether the product is meeting the users' needs.

7. What would the developers on your team need to code first?
  - A. Release 2.2 user stories
  - B. Release 2.1 acceptance tests
  - C. Release 2.3 unit tests
  - D. Release 2.1 user stories
8. What is the main purpose of imposing limits on work in progress?
  - A. To optimize throughput
  - B. To minimize resource allocation
  - C. To visualize lead time
  - D. To balance workflow
9. Two team members have different opinions about what needs to be built to meet the customer's requirements. This is probably an example of \_\_\_\_\_.
  - A. The definition of done
  - B. Divergence
  - C. The gulf of evaluation
  - D. Pair programming
10. Your team has high levels of work in progress, and you are explaining to them why that is a problem. What isn't one of the issues you mention?
  - A. It hides efficiency and throughput issues.
  - B. It confuses the team members' roles.
  - C. It doesn't deliver any return.
  - D. It increases risk and potential rework.
11. Which of the following is not a form of frequent verification and validation?
  - A. Pair programming
  - B. Unit testing
  - C. Iteration demos
  - D. Iteration planning
12. A sponsor wants to evaluate a proposed three-year project against two proposed one-year projects. Which financial metric would be most helpful?
  - A. NPV
  - B. ROI
  - C. MMF
  - D. Velocity
13. You are working on a software development team that follows a test-driven development process. The sequence of activities you would undertake is:
  - A. Write code, write test, refactor
  - B. Write test, refactor, write code
  - C. Write test, write code, refactor
  - D. Write code, refactor, write test

14. Which of the following is most likely to be a minimal viable product?
  - A. A bicycle that has no handlebars
  - B. A pen that has a reservoir for glow-in-the-dark ink as well as regular ink
  - C. An order entry system that has no user interface
  - D. A chair that has no back
15. The sponsor is trying to determine which project has the greatest business value—one that returns \$4 million in three years or one that returns \$5 million in four years. The interest rate is 5 percent for borrowing capital to develop the projects. The best approach to determine the highest-value project is:
  - A. Select the “\$5 million in four years” project, since it returns the highest amount.
  - B. Select the “\$4 million in three years” project, since it has the shorter payback period.
  - C. Calculate the NPV of the projects, and choose the project with the highest value.
  - D. Calculate the NPV of the projects, and choose the project with the lowest cost.
16. You have been asked to outline the basics of agile contracting for your steering committee. Which of the following statements best describes the recommended approach to contracting on agile projects?
  - A. The contract is worded to allow for early completion of scope, and acceptance is based on items matching the original specification.
  - B. The contract is worded to allow for reprioritization of scope, and acceptance is based on items matching the original specification.
  - C. The contract is worded to allow for early completion of scope, and acceptance is based on items being fit for business purpose.
  - D. The contract is worded to allow for reprioritization of scope, and acceptance is based on items being fit for business purpose.
17. What is the primary benefit of involving business representatives in the prioritization of work?
  - A. To proactively engage the business representative between acceptance testing cycles
  - B. To answer business-related questions about the requirements
  - C. To promote communication about when features will be delivered
  - D. To better understand the business needs for the project
18. Project X has an IRR of 12 percent, and project Y has an IRR of 10 percent. Which project represents the better rate of return?
  - A. It depends on the payback period.
  - B. Project Y
  - C. Project X
  - D. Project X or Y, depending on NPV
19. Little’s Law demonstrates that:
  - A. The duration of a work queue is dependent on its size.
  - B. The duration of a work queue allows us to predict how long the project will take.
  - C. WIP is equal to the duration of the work queue.
  - D. Cycle time is equal to the size of the work queue.

20. How is risk related to value delivery?
- A. Risk is an inherent part of delivering value.
  - B. Risk increases as value decreases.
  - C. Risk is factored into value.
  - D. Risk is anti-value.

## Answers

### 1. Answer: C

**Explanation:** This question will be fairly easy if you know that wideband Delphi is an estimating tool. But even if you don't, you should be able to think through the other three options to see that they all provide opportunities for getting feedback. Pair programming allows two programmers to give each other immediate feedback. Releases allow the end users to try out the product and provide their feedback. Stand-up meetings allow the team members to share information about what they are doing, when their tasks will be done, and whether they are having a problem. This provides daily feedback about how well the team's plan is going.

### 2. Answer: A

**Explanation:** Like many questions you will encounter on the PMI-ACP exam, this question is written in a confusing way. You have to read it carefully to understand that you're being asked to identify the option that is more characteristic of traditional contracts than agile contracts. Although there are many kinds of agile contracts, in general they typically require less detailed specifications than traditional contracts; therefore, "more detailed specifications" is the correct answer.

### 3. Answer: D

**Explanation:** As implied by its name, usability testing involves testing how end users will respond to the system under real-world conditions. All the other terms are made up. This question provides an example of how the PMI-ACP exam will use made-up terms that sound real; if you don't know the real agile terms, you won't be able to rule out other terms that sound reasonably similar to them.

### 4. Answer: C

**Explanation:** Although vendors should be selected carefully for an agile project, they don't necessarily need to be fully educated about the agile methods that the team is using. How much education a given vendor will need typically depends on their role in the project—and it is the team members who are most likely to have the technical knowledge required to make that decision. Although educating the vendors could be a project requirement for some projects, that isn't the BEST answer.

### 5. Answer: C

**Explanation:** This question tests your understanding of the agile concept of a minimal viable product. We would want the beta test players to be able to sign up, log in, use their passwords, and give feedback to developers about any bugs they find. What we don't need at this point is a program to convince more people to try the game, since it is still under development.

### 6. Answer: D

**Explanation:** This question requires you to understand the drawbacks of using earned value metrics on an agile project. Three of the questions are distractors that aren't related to EVM. EVM charts can be displayed as an information radiator, so that is irrelevant. Agile plans aren't "finalized" until the project is done, so that can't be right, either. A stable velocity isn't necessary for EVM to work well. The correct answer is that earned value metrics don't reveal whether the deliverable being built is a good product that will meet the users' needs.

7. **Answer: B**

**Explanation:** This question checks your understanding of test-driven development. Based on the release numbers, you should be able to tell that the correct choice must be either the acceptance tests or the user stories for release 2.1, since that release will be built before releases 2.2 and 2.3. The best answer would be the acceptance tests since in the test-driven development process the tests are written BEFORE the user stories they are designed to test. Although the question doesn't state that this team is using TDD, if you don't make that assumption there is no logical reason to choose either answer. The questions on the real exam may require you to "read between the lines" and make assumptions like this.

8. **Answer: A**

**Explanation:** For the exam, it's important to understand that the purpose of using WIP limits is to optimize throughput (speed of workflow). Although WIP limits don't focus on maximizing resource allocation (keeping everyone busy), they certainly don't aim to minimize it, either. Finally, although a Kanban board can help a team visualize lead time and balance workflow, that isn't the purpose of implementing WIP limits.

9. **Answer: C**

**Explanation:** If team members have different ideas about what needs to be built, it means they have different interpretations of the customer's description of the product—which is the definition of a gulf of evaluation. Although the team members might be disagreeing about the definition of done, their disagreement itself is not an example of that concept. If the question had stated that the team members had different opinions about HOW to build the product, then that could be an example of divergence (healthy debate that allows the team to converge on the best approach)—but that isn't what the question says. Pair programming involves writing and reviewing the code, not debating what to code.

10. **Answer: B**

**Explanation:** To answer this question, we have to understand how work in progress impacts an agile project. If we have a lot of partially done work, how can we effectively measure efficiency and throughput? Also, all that work "on hold" is just sitting there, not delivering any return (value). Incomplete work also increases risk, since we might have to redo it if something changes before it is finished and accepted by the customer. The only problem listed here that isn't a result of high levels of WIP is confusing the team's roles, so that is the correct answer.

11. **Answer: D**

**Explanation:** Iteration planning is not a way of verifying or validating a product. Instead, it is concerned with planning, estimating, and scheduling capacity.

12. **Answer: A**

**Explanation:** The correct choice is NPV (net present value) because it converts multiyear returns on investment to a value in today's terms. It is the best option from the choices presented for evaluating projects with different durations. Also, MMF and velocity are not methods for assessing the value of a proposed project.

13. **Answer:** C

**Explanation:** The correct sequence is to write a test (which will initially fail), write code until it passes all the tests, and then refactor the design to clean things up before moving on to the next item.

14. **Answer:** D

**Explanation:** A bicycle without handlebars and an order entry system without a user interface are both unusable products. Since we have no use for them, they aren't minimal viable products (MVPs). A pen that contains two types of ink is unlikely to be an MVP since glow-in-the-dark ink isn't an essential feature for a writing implement. That leaves the chair as the correct answer. We can sit on a chair that has no back, and if the back is added later it will be a value-added feature. A minimal viable chair just needs to provide a surface to sit on.

15. **Answer:** C

**Explanation:** To evaluate the value of two projects that are completed at different times, we can use net present value (NPV) to translate the amounts into today's values. Therefore, the approach of calculating the NPV and choosing the project with the highest value is the way to go. Although there may be valid arguments for one of the other answers, the question is asking for the *best* approach, which is to calculate NPV.

16. **Answer:** D

**Explanation:** Two components common to agile contracts are an ability to reprioritize work and the goal of satisfying the business, rather than conforming to a spec. The closest match to these characteristic is the option "The contract is worded to allow for reprioritization of scope, and acceptance is based on items being fit for business purpose."

17. **Answer:** D

**Explanation:** While involving business representatives in prioritizing the work does help us promote communication and answer questions, the primary reason for that practice is to help the team better understand the business needs for the project. "Proactively engaging" the customer between testing cycles really just means keeping them busy, which is not a concern of the team.

18. **Answer:** C

**Explanation:** The answer is project X, simply because it has the higher rate of return (IRR). We don't need to consider the payback period or the NPV because the question asks which project has the better rate of return, which is its IRR.

19. **Answer:** A

**Explanation:** Little's Law is a mathematical formula that demonstrates that the duration of a work queue is dependent on its size. WIP is the size of the work queue, and cycle time is the duration of the work queue. Although Little's Law provides information about how long it will take to complete work items, that doesn't allow us to predict how long the entire project will take, since it doesn't tell us about variations in the team's velocity or future distractions, roadblocks, or scope changes.

20. **Answer:** D

**Explanation:** Risk can be considered the opposite of value, or anti-value, since risks or threats to the project have the potential to erode, remove, or reduce value if they occur. The other options are made-up ideas.

## **Chapter Review**

1. How will using short iterations help your team?
  - A. Keep the team fully occupied.
  - B. Keep stakeholders involved in the project.
  - C. Keep stakeholder communications streamlined.
  - D. Let the team relax and get acclimated at the start of the project.
2. What's the best way for your team to share their progress with the other project stakeholders?
  - A. Information radiators
  - B. Scrum of scrums
  - C. Stand-up meetings
  - D. Retrospectives
3. Everyone on the team seems to have a different opinion about how to build the next product increment. What could help them resolve this debate and move forward?
  - A. Fishbone Analysis
  - B. Shared communication
  - C. Emotional intelligence
  - D. Fist-of-five voting
4. Which tool wouldn't help your team share knowledge?
  - A. Burnup charts
  - B. Stand-up meetings
  - C. Co-located team members
  - D. Fibonacci diagrams
5. In interviewing candidates for an open position on your team, you're looking for someone who will be able to \_\_\_\_\_.
  - A. Understand and influence the emotions of others.
  - B. Work independently without asking others for help.
  - C. Resolve stress and conflict between other people.
  - D. Help others manage change and challenges.
6. The definition of done is \_\_\_\_\_.
  - A. Provided by the product owner
  - B. Determined by the team and the ScrumMaster
  - C. Defined by the customer and the ScrumMaster
  - D. Agreed upon by the team and the product owner
7. What is the most frequently used kind of workshop on a typical agile project?
  - A. Team survey
  - B. Iteration planning meeting
  - C. Scrum inspection
  - D. Project kick-off meeting

8. Which of the following statements best describes the role of an agile project charter?
  - A. Forms the basis of the prioritized backlog and identifies the work to be completed by the project
  - B. Describes the threats and issues the project may encounter and describes mitigation strategies for avoidance
  - C. Defines the who, what, where, when, why, and how of the project and provides authority to proceed
  - D. Outlines the roles and responsibilities of the project stakeholders and identifies any third-party contractors
9. Agile's emphasis on two-way communication means that:
  - A. Distributed teams have to make an effort to communicate effectively.
  - B. Agile teams need to share knowledge as widely as possible.
  - C. The customer should solicit the delivery team's ideas, risks, and concerns and take them seriously.
  - D. The stakeholders need to be kept in the loop about the team's progress.
10. Which of the circumstances outlined below would be a good fit for the use of personas?
  - A. When the conversation is centered on the high-level flow of a process
  - B. When we are trying to better understand stakeholder demographics and needs
  - C. When we need to capture the high-level objective of a specific requirement
  - D. When we want to communicate what features will be included in the next release
11. Your project team is in turmoil, and you're trying to diagnose the level of their conflict with another department. You notice that statements such as "Marketing has no clue again!" are becoming commonplace. What level of conflict would you say the team is experiencing?
  - A. Level 1
  - B. Level 2
  - C. Level 3
  - D. Level 4
12. Which of the following isn't a form of agile workshop?
  - A. The stakeholders gather to identify and define the user stories.
  - B. The team gathers to reflect on their last iteration and identify issues and process changes.
  - C. The delivery team gathers to estimate the user stories for the next iteration.
  - D. The team gathers to share their progress yesterday, discuss what they will do today, and identify any impediments to progress.
13. What isn't part of emotional intelligence?
  - A. The ability to control our own emotions
  - B. The ability to identify, assess, and influence our own emotions
  - C. The ability to identify, assess, and influence the emotions of other people
  - D. The ability to control other people's emotions
14. The concept of knowledge sharing on an agile project is best characterized as:
  - A. Encouraged where possible and where the team shows an interest
  - B. Central to many agile practices
  - C. Undertaken if there is time left at the end of an iteration
  - D. Undertaken principally through stand-up meetings

15. The gulf of evaluation refers to what?
  - A. The gap between what the product owner knows and what the testers know
  - B. The mismatch between the customer's vision of the solution and how the developers understand it
  - C. The difference between what the ScrumMaster tells the team to do and what they actually produce
  - D. The disparity between what the customer wants and what they really need
16. On an agile project, the definition of done is discussed frequently so that:
  - A. Functionality can be negotiated until the last responsible moment.
  - B. All stakeholders have a clear understanding of what completion means.
  - C. Team members get to improve their negotiation skills.
  - D. Active listening can reveal previously undiscussed requirements.
17. Agile modeling aims to:
  - A. Capture the intent of the design in a barely sufficient way
  - B. Capture the intent of the design in a comprehensive way
  - C. Deliver actionable documentation for the project
  - D. Leverage the fact that the value of modeling increases with time spent on it
18. Your team seems to unproductively debate even trivial decisions. To help them make collective decisions, you could try using:
  - A. Fist-of-five voting
  - B. Bare fist fighting
  - C. Planning poker
  - D. Brainstorming
19. Which of the circumstances outlined below would be a good fit for the use of wireframes?
  - A. When the conversation is centered on the high-level flow of a process
  - B. When we are trying to better understand stakeholder demographics and general needs
  - C. When we need to capture the high-level objective of a specific requirement
  - D. When we want to communicate what features will be included in the next release
20. Which of the following benefits isn't part of the agile value proposition?
  - A. Reduced risk at the end of the project
  - B. Increased visibility throughout the project
  - C. Increased adaptability during planning
  - D. Earlier delivery of business value

## Answers

**1. Answer: B**

**Explanation:** Short iterations help keep stakeholders actively involved in the project through frequent iteration planning and review meetings. Short iterations don't optimize resource allocation (i.e., keep the team fully occupied) or streamline communications. And since they mean that agile teams are always working toward a short-term target, they don't give team members any time to relax at the start of a project.

**2. Answer: A**

**Explanation:** The most popular tools agile teams use to share their progress with other project stakeholders are the large visible displays of information known as information radiators. A scrum of scrums is a way of coordinating work between two teams. Stand-up meetings share information within the team. Retrospectives are primarily for the benefit of the team—and they are focused on improving the team's processes, not sharing progress.

**3. Answer: D**

**Explanation:** The answer to this question can be found logically by thinking through the four options. Fishbone Analysis helps us get to the root cause of an issue; although this might be helpful, it isn't a tool for reaching consensus. Shared communication is a made-up term that doesn't really mean anything. Emotional intelligence is an interpersonal skill that helps us understand and influence emotions; again, although this might be helpful, it isn't the best answer. The correct answer is fist-of-five voting, which is a tool for collective decision making.

**4. Answer: D**

**Explanation:** All the answer options are ways that agile teams share information except for "Fibonacci diagrams," which is a made-up term.

**5. Answer: A**

**Explanation:** In weighing the options for this question, you need to apply your understanding of the agile mindset as well as common sense about how people work together. You should recognize that "understand and influence the emotions of others" is one aspect of emotional intelligence. Since emotional intelligence is an important skill on agile teams, then all you need to do is rule out the other answers to make sure this is the BEST answer—and as it turns out, it is. Agile puts a big emphasis on working collectively rather than independently. In agile, conflicts are ideally resolved by those directly involved, not by outside parties. And helping others "manage change and challenges" describes the role of a therapist, not an agile team member.

**6. Answer: D**

**Explanation:** Although this question uses Scrum terms, it is equally applicable to generic agile teams. As a rule, the definition of done is the result of a conversation between the team and the product owner. If you think about it, this is logical; the team and the product owner each have information that the other party doesn't have. The product owner knows what is needed by the business, and the team knows what can realistically be built within the available constraints. Both of these perspectives need to be weighed to come up with a shared definition of done.

7. **Answer:** B

**Explanation:** Two of these options aren't agile workshops—"team survey" and "Scrum inspection" aren't defined agile processes. To find the answer you just need to know how regularly the other two meetings are used on a typical agile project. By definition, a project kick-off meeting takes place once at the start of the project. Iteration planning meetings, on the other hand, are held at the start of each iteration, every one or two weeks—this is the correct answer.

8. **Answer:** C

**Explanation:** An agile project charter defines the who, what, where, when, why, and how of the project and provides authority to proceed. Although this document may also list the scope that ends up in the backlog and the threats and issues the project might face, these are all just portions of the charter, and do not best describe its role.

9. **Answer:** C

**Explanation:** Agile projects need to have bidirectional communication in which information flows both from the business to the team and from the team to the business. While all the options listed could be interpreted as correct statements, option C is the only one that refers to this kind of communication. If you thought option D was correct, notice that it simply refers to keeping the stakeholders informed, not to decision making based on that information.

10. **Answer:** B

**Explanation:** Personas are quick guides or reminders of the key stakeholders on the project and their interests. So this tool would be a good fit when we are trying to better understand stakeholder demographics and general needs.

11. **Answer:** C

**Explanation:** "Marketing has no clue again" falls into the category of overgeneralizations, presumptions, and magnified positions, which indicates a level 3 type conflict. At level 2, they wouldn't be using overgeneralizations such as "no clue again," and at level 4, their language would likely be more ideological and hostile.

12. **Answer:** D

**Explanation:** The last option here isn't a workshop, because it describes the daily stand-up, which is a brief meeting, not a workshop. The other three options, in order, describe story-writing workshops, retrospectives, and estimating sessions, all of which are forms of agile workshops.

13. **Answer:** D

**Explanation:** Emotional intelligence deals with our ability to identify, assess, and influence both our own emotions and those of other people, including our capacity for emotional self-control. However, it doesn't allow us to control the emotional responses of other people.

14. **Answer:** B

**Explanation:** Knowledge sharing is central to many agile practices. It is true that stand-up meetings help the team members share information, but they are not the primary event for knowledge sharing. This practice is too important to be considered optional if the teams show an interest, or if there is time.

15. **Answer:** B

**Explanation:** The gulf of evaluation refers to the gulf, or difference between, what one person envisions and tries to describe and how another person hears and interprets that description. On agile projects, there can be significant consequences if the developers don't have the same understanding of the project solution as the customer or product owner. The other options are made-up.

16. **Answer:** B

**Explanation:** The reason we have frequent discussions about the definition of done is to prevent the mismatches that can occur when different people interpret the descriptions of new functionality in different ways. The definition of done is not intended to be used to negotiate functionality, improve negotiation skills, or surface new requirements (although that may occur). Instead, we have these discussions to make sure everyone has a common understanding of what completion or success will look like.

17. **Answer:** A

**Explanation:** Agile models are lightweight, barely sufficient (just enough detail) models that aim to capture the high-value benefits of modeling without taking too much time to create very detailed or polished models. We want to focus on the product being developed, rather than on generating documentation. Finally, the value of modeling doesn't increase with time spent; there is a point of maximal value past which additional modeling isn't worth the effort.

18. **Answer:** A

**Explanation:** When teams struggle to make collaborative decisions, it can be helpful to introduce participatory decision models such as fist-of-five voting. Planning poker is an estimation technique that would only help if they were having difficulty agreeing on estimates. Brainstorming is an idea-generating exercise that wouldn't help with decision making. And bare fist fighting is, sadly, in conflict with PMI's Code of Ethics and Professional Conduct.

19. **Answer:** A

**Explanation:** Wireframes are a way of creating a quick mock-up of a product, including its process flows. So this tool would be a good fit when the conversation is centered on the high-level flow of a process.

20. **Answer:** A

**Explanation:** Although the agile value proposition does include reduced risk, that effect is most pronounced at the start of the project, since agile teams aim to lower risk as quickly as possible. At the end of a project, no project risk remains since the project is over and we already know the outcome. The other three options are accurate descriptions of the other elements of the agile value proposition.

## **Chapter Review**

1. As the product owner, what would you focus on?
  - A. Facilitating the retrospectives and planning meetings
  - B. Acting as servant leader to the team
  - C. Organizing the development work
  - D. Maximizing the value of the product
2. What would be a step forward in your team's evolution?
  - A. From proficient to competent
  - B. From Forming to Storming
  - C. From Ha to Shu
  - D. From self-organized to empowered
3. If it isn't possible to locate all your team members in the same room, they are likely to experience:
  - A. Higher levels of conflict
  - B. More privacy
  - C. Less difficulty reaching convergence
  - D. More communication challenges
4. As an agile team leader, you want to avoid:
  - A. Prioritizing team goals over individual goals
  - B. Providing rewards for expected behavior
  - C. Finding out what motivates the team members individually
  - D. Rewarding individual goals at the expense of project goals
5. What would a member of an agile delivery team focus on the most?
  - A. Selecting which user stories to include in the product
  - B. Building the product increment
  - C. Communicating the project vision
  - D. Testing the product increment to determine if it is done
6. If the team leader is effective, we would expect to see an agile team:
  - A. Collaborate smoothly and harmoniously without disagreements
  - B. Disagree with each other frequently when they are first learning to work together
  - C. Learn to suppress their disagreements for the good of the project
  - D. Develop stronger opinions and disagree more as the project progresses
7. What question would the sponsor of an agile project focus on?
  - A. Will the project deliver the expected value on time and on budget?
  - B. Does the team understand the project vision?
  - C. Is the ScrumMaster prioritizing the features accurately?
  - D. Does the product owner understand the end user's requirements?

8. What is the ScrumMaster responsible for?
  - A. Directing and organizing the team
  - B. Guiding the team's agile processes
  - C. Prioritizing the user stories
  - D. Managing the project
9. Your team needs to keep the product owner and other stakeholders informed about how the project is progressing. What tools will you use for this?
  - A. Velocity chart and risk burndown graph
  - B. Project roadmap and story maps
  - C. The team's task board with WIP limits
  - D. Prototypes, personas, and wireframes
10. At what team formation and development phase is conflict likely to be highest?
  - A. Forming
  - B. Fuming
  - C. Storming
  - D. Debating
11. Which of the following statements is true for using team velocity as a progress metric?
  - A. Velocity is not accurate if there are meetings that cut into development time.
  - B. Velocity measurements are disrupted if some project resources are part-time.
  - C. To track velocity accurately we can't have any scope changes during the project.
  - D. Velocity measurements account for work done and disruptions on the project.
12. Which of the following needs isn't relevant to designing agile team spaces?
  - A. Allow team members to retreat to a cave for some quiet work.
  - B. Help everyone understand how to operate and reset the printer.
  - C. Let team members pair up at the same desk to work together.
  - D. Let the sponsor easily follow the team's progress.
13. Self-organizing teams are best characterized by their ability to:
  - A. Do their own thing
  - B. Sit where they like
  - C. Make local decisions
  - D. Make project-based decisions
14. You have been assigned to lead a distributed agile team. To help them communicate, the best option would be to:
  - A. Ask the team members to share photos of themselves.
  - B. Require a common language for all project communications.
  - C. Set up some initial face-to-face meetings for everyone to meet each other.
  - D. Define common working hours so everyone can better communicate.

15. Agile team members are more effective at solving problems when they:
  - A. Are motivated by rewards and punishments
  - B. Are in the Storming stage of development
  - C. Feel they have permission to make mistakes
  - D. Are allowed to work on their own without anyone telling them what to do
16. Cockburn's Shu-Ha-Ri model tells us why:
  - A. Agile teams that are empowered to make their own local decisions are more effective.
  - B. Team members tend to argue a lot before they learn to work well together.
  - C. Leaders need to understand how teams develop to lead them effectively.
  - D. Teams new to agile should follow a method that has already been tested by others.
17. High-performing agile teams feature which of the following sets of characteristics?
  - A. Consensus-driven, empowered, low trust
  - B. Self-organizing, plan-driven, empowered
  - C. Consensus-driven, empowered, plan-driven
  - D. Constructive disagreement, empowered, self-organizing
18. Another agile team leader in your organization comes to you for advice. She's having trouble getting her team to take ownership of the project and get comfortable selecting the work to be done. She keeps finding herself making the decisions and directing their work. What do you advise her to do?
  - A. At the stand-up meetings, assign a different person each day as the decision maker to get them all comfortable in the role.
  - B. Implement an incentive plan and officially report any lack of participation to team members' functional managers.
  - C. Meet them halfway and work with their functional managers to align each team member's goals with the project goals.
  - D. Explain to them that agile teams self-select their work and tell them to get on with it.
19. The primary reason constructive disagreement is valued on high-performing agile teams is to:
  - A. Weed out the weak.
  - B. Test requirements for robustness.
  - C. Generate buy-in for decisions.
  - D. Build negotiation skills.
20. Osmotic communication works best when:
  - A. The team members understand each other's cultures.
  - B. The team is in the Performing stage.
  - C. The team members' goals are aligned with the project goals.
  - D. The team members work near each other.

## Answers

**1. Answer:** D

**Explanation:** The product owner's primary responsibility is maximizing the value of the product. It is the team coach or ScrumMaster who acts as a servant leader to the team and is most likely to facilitate the team's retrospectives and planning meetings. Agile team members organize their own work.

**2. Answer:** B

**Explanation:** Although the transition from Forming to Storming might not always feel like a step in the right direction, this is the only one of the options that would take a team one step forward in their evolution. The steps "Shu" and "competent" precede the steps "Ha" and "proficient," rather than following them. Being self-organized is an aspect of being empowered, not an evolutionary step forward.

**3. Answer:** D

**Explanation:** Team members who aren't co-located aren't likely to have higher levels of conflict since distance can make it easier to ignore disagreements (making it more difficult to complete the Storming stage). And since shared agreement (convergence) requires the team to first fully debate the various options (divergence), true convergence is also more difficult to achieve when the team isn't co-located, rather than less. If team members don't work in the same room, it doesn't necessarily mean they will have more privacy; it just means they won't all be together. The most likely outcome of this scenario is more communication challenges.

**4. Answer:** D

**Explanation:** As an agile team leader, it might be helpful to focus on any of the activities listed here except for rewarding individual goals at the expense of project goals. An effective team leader understands the team members' individual goals and leverages them for the good of the project, rather than the other way around.

**5. Answer:** B

**Explanation:** The best option here is "building the product increment." Selecting which features to include in the product is done by the product owner, not the team. (Although the team does decide which user stories can be completed in a given iteration, the question doesn't mention iteration planning.) Also, although the team tests the product increment, they can't decide if it's "done," since that's up to the customer. Finally, the team members are responsible for implementing the project vision, not for communicating it.

**6. Answer:** B

**Explanation:** When agile team members are first learning to work together, we expect to see them move through the Storming stage, where they will disagree with each other frequently. Notice that the reference to the team leader's effectiveness is something of a distractor. Only one of these options would be expected to occur on an agile project—and that is a natural process of team formation, not based on the team leader's effectiveness.

**7. Answer: A**

**Explanation:** The sponsor is focused on the big picture of value delivery; this person is responsible for ensuring that the project will deliver the expected value on time and on budget. Typically, it is the product owner who communicates the product vision to the team. The product owner is also responsible for ensuring that the end user's requirements are met, so if they don't know those requirements, they aren't doing their job; this isn't something the sponsor should be worrying about. Finally, the team's coach or ScrumMaster doesn't prioritize features; that is done by the product owner, customer, or value management team.

**8. Answer: B**

**Explanation:** Agile teams direct and organize themselves. It is the product owner who prioritizes the user stories, and managing the project isn't one of the responsibilities of the ScrumMaster. That rules out all the options except for guiding the team's agile processes, which is one of the ScrumMaster's key responsibilities.

**9. Answer: A**

**Explanation:** Although all the tools listed can be used to communicate project information to stakeholders, only velocity charts and risk burndown graphs track progress over time. Velocity charts show how much work the team has completed in each iteration, and risk burndown graphs show how well the team is managing the project risks.

**10. Answer: C**

**Explanation:** The stage where conflict is highest is the Storming phase. When the team is in the Forming stage, they are still getting to know each other. Fuming and debating are not team formation and development phases.

**11. Answer: D**

**Explanation:** A team's velocity measures the actual work done (and therefore the team's capacity). Therefore, this metric includes all the interruptions and anything else that has occurred on the project, including the meetings, part-time resources, and scope changes that are common on projects.

**12. Answer: B**

**Explanation:** Agile team spaces are designed to incorporate the concepts of caves and common, collaborative workspaces, and information radiators of the team's progress. Although the team's space may include a printer, the instructions for using it aren't relevant for designing the space.

**13. Answer: C**

**Explanation:** This question can be confusing because teams may have the opportunity to make some project-based decisions, but remember to always look for the best choice in the options presented. Self-organizing teams primarily have control over local decisions related to the project execution. For example, they may decide what to do next and how to solve a technical problem. Sponsors typically make external decisions, such as increasing the budget or extending the schedule. Doing their own thing or sitting where they like may or may not occur, but these choices are not readily associated with characteristics of a self-organizing team. Therefore, choice C is the best option.

**14. Answer: C**

**Explanation:** If possible, setting up some initial face-to-face meetings for everyone to meet is an effective way of improving remote communications later in the project. Once people have met face-to-face, it is generally much easier to follow up with e-mail, phone calls, etc. Defining common working hours or a common language might appear to be helpful, but these actions might also be viewed as disrespectful. Sending photos is also unlikely to assist much, and it is certainly not the best option.

**15. Answer: C**

**Explanation:** When we feel threatened, it's harder to find smart answers because we have reduced cognitive resources for problem solving. As for the other options, rewards and punishments aren't the agile approach to motivating team members (nor are they likely to improve problem-solving skills). While the Storming stage of development certainly presents problems to solve, team members aren't necessarily skilled at doing so yet. And agile approaches are highly collaborative, rather than leaving people to work on their own.

**16. Answer: D**

**Explanation:** Cockburn's Shu-Ha-Ri model states that when mastering a new process, we start by following the rules or guidelines established by others. We need to first master that process before we will have the expertise required to tailor our approach. While the other options are all correct statements, they aren't related to the Shu-Ha-Ri model.

**17. Answer: D**

**Explanation:** Through a process of elimination, we can determine that the correct answer is choice D. High-performing agile teams work in high-trust, rather than low-trust, environments, and they are consensus-driven, not plan-driven.

**18. Answer: C**

**Explanation:** In this situation, the team leader should assume a coaching role to help the team members get to the point where they are comfortable selecting their own work. This will include meeting team members a half-step ahead, guaranteeing safety, partnering with their managers, and building positive regard. Assigning someone as a decision maker at stand-up meetings is incorrect since agile teams are consensus-driven and decisions aren't made in stand-up meetings. Incentive plans can be useful, but what this team really needs is guidance, not rewards and punishments. Simply explaining that agile teams self-select their work isn't enough to get team members comfortable assuming more ownership of the project.

**19. Answer: C**

**Explanation:** Constructive disagreement is a form of healthy conflict, where team members work through issues to find a solution that is right for the team and the project. As a result, constructive disagreement generates team buy-in for decisions. Agile methods do not seek to "weed out the weak," and while constructive disagreement could help clarify requirements and build negotiation skills, those are not the primary reasons it is valued on a project.

**20. Answer: D**

**Explanation:** Osmotic communication is the useful information that flows between team members who are working in close proximity to each other as they overhear each other's conversations. Therefore, it works best when the team members are sitting near each other.

## Chapter Review

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1. Your team has just discovered that your story point has drifted. What should you do next?
  - A. Re-estimate the product backlog.
  - B. Perform Fishbone Analysis to find the root cause.
  - C. Use affinity estimating to compare all the estimates made so far.
  - D. Postpone the next sprint and instead perform a spike to resolve the issue.
  
2. The team is slicing their user stories. What are they doing?
  - A. Sizing stories for the next iteration
  - B. Gathering user requirements
  - C. Estimating how much they can get done in the next iteration
  - D. Dividing stories into pieces that can be completed in one iteration
  
3. The PMO wants to have a copy of your project plan. What will you send them?
  - A. A copy of your product roadmap
  - B. The team's requirements hierarchy
  - C. A photo of the team's Kanban board
  - D. Your user story backlog
  
4. The product owner has told the team how much work will need to be completed in the next iteration. In this scenario:
  - A. The iteration planning process is proceeding smoothly.
  - B. The product owner is overstepping their role.
  - C. The product owner is taking over the ScrumMaster's responsibilities for planning.
  - D. The team should claim more responsibility for planning in their next retrospective.
  
5. Your team has decided they need an Iteration 0 before starting the development work. Why?
  - A. To set up the build server for the project
  - B. To practice working together and get through the Storming stage before the real work starts
  - C. To hold planning poker sessions to estimate the user stories
  - D. To minimize as many of the project risks as possible before development begins
  
6. The team believes that it will take 15 hours of effort to write the user guide for the new product they are building. What should their estimate be for that task?
  - A. 15 hours
  - B. 18 hours, to add a buffer for distractions and availability issues
  - C. 12 hours, since teams tend to overestimate how long a task will take
  - D. 12 to 18 hours
  
7. Your team members are estimating their tasks. What process are they engaged in?
  - A. Release planning
  - B. Progressive elaboration
  - C. Iteration planning
  - D. High-level visioning

8. In the daily stand-ups, the team coach should:
  - A. Schedule and facilitate the meeting.
  - B. Let the team members resolve their own conflicts.
  - C. Listen and note any problems for immediate follow-up.
  - D. Ask questions to determine the root cause of any problems that are raised.
9. We can say that an iteration demo is successful if \_\_\_\_\_.
  - A. The product got shipped and the team would work the same way again.
  - B. The customer accepts the minimal viable product that has been built.
  - C. A gulf of evaluation is cleared up.
  - D. The product owner says the product increment is done.
10. Your lead engineer just came down with the measles in the middle of a sprint. As team coach, what should you do?
  - A. Call his functional manager and request a new lead engineer for your team.
  - B. Ask the team how much of the planned work can be done.
  - C. Ask everyone else to work overtime.
  - D. Postpone the release date.
11. Your sponsor has asked for clarification on when releases of your product will ship and what those releases will contain. Which agile deliverable would best address this need?
  - A. Product demo
  - B. Product roadmap
  - C. Product backlog
  - D. Product owner
12. Your team committed to delivering 10 story points this iteration, but it looks like you will only complete 8. You should:
  - A. Extend the iteration.
  - B. Add more resources to the team.
  - C. Complete 8 points, and put 2 back in the backlog.
  - D. Adjust the iteration plan from 10 points down to 8.
13. When agile teams use the term “timeboxed,” what do they mean?
  - A. Work shall take a minimum amount of time.
  - B. Work can take no more than a maximum amount of time.
  - C. Work must be done by a given time, plus or minus 20 percent.
  - D. Work must happen at a set time.
14. The project management office is auditing your agile project and asks to see your iteration plans. They notice that only the next couple of iterations have plans. As a result, they give the project a “red flag” for having incomplete plans. The most responsible thing to do is:
  - A. Explain the agile principles of progressive elaboration and rolling wave planning.
  - B. Create detailed iteration plans for the remainder of the project.
  - C. Ignore them, since they clearly have no right to be reviewing your project.
  - D. Ask the team to create detailed plans for the remaining iterations in the release.

15. Which of the following statements correctly describes agile planning?
- A. Plan at multiple levels, and have managers create iteration plans.
  - B. Use appropriate estimate ranges, and exclude diversions/outside work.
  - C. Plan at multiple levels, and have team members create iteration plans.
  - D. Use fixed-point estimates, and base projections on completion rates.
16. You are leading a team with an average velocity of 50 points per iteration. Another team of the same size in your organization is working on a project with similar complexity. The other team's velocity is averaging 75 points per month. Your team should:
- A. Perform affinity estimating to check their estimates, since something is off.
  - B. Work longer hours.
  - C. Ignore the difference.
  - D. Request additional resources to get more work done.
17. Estimates should be presented as ranges to:
- A. Allow for change requests.
  - B. Keep the sponsors flexible.
  - C. Allow for scope creep.
  - D. Reflect the level of uncertainty in the estimates.
- 40/2 weeks
18. Your team is averaging 40 story points per two-week iteration. They have 200 points' worth of functionality left in the user story backlog. How many weeks can we expect it will take until development is completed?
- A. 2.5
  - B. 5
  - C. 10
  - D. 20
19. Affinity estimating allows a team to:
- A. Average the over- and under-estimations in our estimate ranges.
  - B. Confirm that stories that have been estimated as the same size are of equivalent magnitude.
  - C. Check that stories within the same functional areas are of similar proportion.
  - D. Estimate the most important stories first to deliver value early and reduce risk.
20. You are a full-time ScrumMaster on an agile team. A team member becomes ill partway through an iteration in which the team committed to deliver 25 story points. Which action is most appropriate?
- A. Work the remaining team longer hours.
  - B. Send work home to the sick team member.
  - C. Start development yourself to assist the team.
  - D. Deliver what you can within the sprint.

## Answers

**1. Answer: C**

**Explanation:** Depending on the circumstances, it's possible that any of these options could be a helpful response. However, based on the information provided, the BEST thing to do next would be to use affinity estimating to compare the estimates that have been made so far. A team normally wouldn't re-estimate their entire backlog, since much of that work might not have been estimated yet. They also probably wouldn't stop to analyze the root cause. Over the course of a large project, it's perfectly normal for the size of a story point to drift; so it's more helpful to compare and adjust the estimates than to figure out what caused the problem. For the same reason, it's also unlikely that such a normal occurrence would require postponing the next sprint to perform a spike.

**2. Answer: D**

**Explanation:** Slicing user stories is the process of dividing stories into pieces that can be completed in one iteration. The other options are incorrect.

**3. Answer: A**

**Explanation:** Agile's closest equivalent to a traditional project plan is the product roadmap. The team's requirements hierarchy isn't a plan; it simply outlines how they will break down the requirements into progressively smaller pieces. Their Kanban board isn't a plan, either—it just shows the work moving through the development process at the moment. Finally, the user story backlog is a prioritized master list of the work that still needs to be done; it doesn't include the planned release dates or the features that will be included in the releases, the way a product roadmap does.

**4. Answer: B**

**Explanation:** During iteration planning, the product owner's role is to prioritize the backlog items. The team then decides how many of the top-priority items in the backlog can be completed in the next iteration timebox. So this product owner is overstepping their role, since the amount of work that can be completed in the next iteration is decided by the team, not the product owner or the ScrumMaster. While it's true that in this scenario the team isn't doing their own planning, based on the information provided, it isn't clear that there is a problem on their side that should be addressed in a retrospective. The product owner probably just needs to be educated about agile and encouraged to allow the team do their own planning.

**5. Answer: A**

**Explanation:** Iteration 0 is an optional iteration that the team can use to set the stage for their development efforts. It isn't used for estimating or for working together, since those activities are done in the development iterations. Although agile teams do try to minimize risk early in the project, they usually do this by prioritizing risk mitigation stories or by scheduling a risk-based spike. So although risk mitigation could theoretically be part of Iteration 0, the answer that BEST fits the definition of Iteration 0 is to set up the build server for the project.

**6. Answer: A**

**Explanation:** Agile teams estimate tasks in ideal time—how long it will take if there are no interruptions or distractions. In this case, they have decided that the effort will take 15 hours, so their estimate should also be 15 hours. If they think the work will take 15 hours, then they wouldn't estimate less than that (and in general, teams tend to underestimate how long a job will take, not overestimate it). Although agile teams do rely on estimate ranges to convey the uncertainty of larger estimates to stakeholders, tasks are typically given single-point estimates. That's because those estimates are only for the team, and also at this point (shortly before the work is done) they should have enough information to agree upon a single-point estimate rather than using a wide range such as 12 to 18 hours.

**7. Answer: C**

**Explanation:** Agile work units are progressively broken down from large to small and estimated at the last responsible moment. Since tasks are the smallest agile unit of work, we can deduce logically that these work items wouldn't be estimated until the last planning step just before the work is done, which is iteration planning. Although it's true that all agile estimating is progressively elaborated over time, that isn't the BEST answer to this question, since it is too general.

**8. Answer: C**

**Explanation:** In a daily stand-up, the role of the ScrumMaster or team coach is to listen and note any impediments to the team's progress for quick follow-up. This meeting is generally held at the same time and place every day, so scheduling usually isn't required—and because the discussion is run by the team members, no facilitation is necessary either. Since daily stand-ups are strictly limited to answering three questions, team conflicts shouldn't be an issue in these meetings. Root cause analysis of the problems would be done in a separate meeting, rather than during the stand-up itself.

**9. Answer: D**

**Explanation:** This question requires you to think through the options carefully, since each of them is applicable to some aspect of an agile project. “The product got shipped and the team would work the same way again” describes methodology success criteria—these are signs that our methodology is working well. However, these criteria don't apply to iteration demos since only one increment is built in an iteration, not the entire product. We can also rule out “The customer accepts the minimal viable product that has been built” because the minimal viable product isn't built in one iteration. Although we do want to identify and clear up any gulfs of evaluation that may exist during the iteration demo, that isn't what determines if the meeting was successful. The success of the demo is based on whether the product owner accepts the product increment built in the iteration as “done.”

**10. Answer: B**

**Explanation:** This question tests your grasp of the agile principle of timeboxing. The correct answer is to discuss with the team how much of the planned work they will be able to complete within the timebox. We wouldn't request a new lead engineer, either temporarily or permanently, because swapping people in and out of the team would be likely to throw the team back to the Storming stage, lowering its productivity. The option of asking everyone to work overtime isn't consistent with the agile principle of sustainable development. Although postponing the release date might be necessary in some cases, we aren't given enough information to support the conclusion that this is the BEST answer.

11. **Answer:** B

**Explanation:** The product roadmap shows release dates and the high-level contents of releases, so it would be the best deliverable for answering these questions. A product demo might be good for showing the sponsor what has already been built, but demos are not targeted at communicating the release schedule for upcoming features, and neither is the backlog. Although the product owner will likely know the answers to these questions, the question asked “Which agile deliverable”—and the product owner is generally a person, not a deliverable.

12. **Answer:** C

**Explanation:** Since iterations are timeboxed, the duration won’t be changed. You also wouldn’t change the iteration plan or expand the team. Instead, work that isn’t completed within the iteration is returned to the backlog. Therefore, the choice of completing 8 points and returning 2 points to the backlog is the correct option.

13. **Answer:** B

**Explanation:** If an activity is timeboxed, that means a maximum duration has been assigned to it. This ensures that the team spends an appropriate amount of time on the work without allowing waste.

14. **Answer:** A

**Explanation:** An incomplete set of iteration plans may be a surprise to a PMO that is not familiar with agile methods. When faced with this situation, you should explain the benefits of agile planning and how an agile approach ties into the concepts of progressive elaboration and rolling wave planning, which are discussed in the *PMBOK® Guide*. Making up plans too early is a poor use of time on an agile project and could mislead stakeholders. The choice of ignoring the request is incorrect, because it is counter to the “Respect” principle defined in PMI’s Code of Ethics and Professional Conduct (see chapter 7).

15. **Answer:** C

**Explanation:** The only correct combination is to plan at multiple levels and have team members create iteration plans. All of the other choices contain incorrect elements. Managers do not create iteration plans—teams do. Diversions and outside work are included when determining availability, and we use range estimates on agile projects, not fixed-point estimates.

16. **Answer:** C

**Explanation:** Velocity is team-specific and unique to that team. In other words, a story point for one team probably wouldn’t have the same value as a story point for another team. Therefore, it is not appropriate to compare velocities between teams. The best choice would be to ignore the difference.

17. **Answer:** D

**Explanation:** We present estimates as ranges to show the level of uncertainty in the estimates and to manage stakeholder expectations.

18. **Answer:** C

**Explanation:** Since this question doesn't indicate there will be any differences in the team's availability or known distractions going forward, we can do a fairly straightforward calculation to get the answer. If we average 40 points per iteration, we should get through a 200-point backlog in 5 iterations ( $200 / 40 = 5$ ). Each iteration is 2 weeks long, so 5 iterations is equivalent to 10 weeks ( $5 \times 2 = 10$ ). The key to answering this question correctly is noticing that the question asked for the number of weeks, not the number of iterations.

19. **Answer:** B

**Explanation:** Affinity estimation involves a process of triangulation to confirm that stories estimated to be the same size are of equivalent magnitude.

20. **Answer:** D

**Explanation:** In such a situation, we deliver what we can within the sprint. Sending work home and working the team longer are counterproductive in the long term and don't adhere to the agile principle of maintaining a sustainable pace. Starting development work yourself would leave nobody to do the ScrumMaster role. It is better to just deliver what is possible within this iteration and explain the variance.

## **Chapter Review**

1. A new risk has been discovered halfway through the project. What should your team do first?
  - A. Add it to the top of the backlog.
  - B. Ask a subject matter expert to assess its probability and impact.
  - C. Evaluate its root cause.
  - D. Schedule a risk-based spike to resolve or minimize it.
2. What would be most helpful for improving a team's problem-solving proficiency?
  - A. Focus on keeping arguments and disagreements to a minimum.
  - B. Encourage them to share their mistakes and problems with each other.
  - C. Ask more experienced team members to mentor their peers.
  - D. Score their suggestions and post a leaderboard in the team space to encourage competition.
3. Which tool or metric would allow a team to find problems most quickly?
  - A. Variance analysis
  - B. Technical debt
  - C. Risk burnup chart
  - D. Defect cycle time
4. As the coach of an agile team, you expect the team members to:
  - A. Come to you whenever they encounter a problem
  - B. Report all their problems in the daily stand-up meeting
  - C. Solve most problems collectively as the work proceeds
  - D. Figure out the best solution on their own
5. Ideally, who will catch and fix a coding error?
  - A. The customer will spot it in the demo.
  - B. The developers will find it during unit testing.
  - C. The reviewer will catch it during pair programming.
  - D. The testers will find it in testing.
6. Two team members are having a difference of opinion about how to build the next user story. What should be done?
  - A. The team coach should assess the level of conflict and intervene appropriately.
  - B. The ScrumMaster should decide the issue, since it is becoming an impediment to progress.
  - C. The product owner should be consulted.
  - D. The team should gather to discuss the issue and come up with a collective solution.
7. Ideally, what does your team want to see on the top line of your risk burndown graph?
  - A. A steady, consistent upward trend
  - B. A sharp upward trend as early as possible in the project
  - C. A steady, consistent downward trend
  - D. A sharp downward trend as early as possible in the project

8. As the lead tester on an XP team, you discover a problem. What should you do?
  - A. Discuss the issue with the developer.
  - B. Try to fix the problem yourself.
  - C. Tell the customer.
  - D. Alert the other coders to the problem.
9. An agile team is refactoring their code. Why are they doing this?
  - A. To check the unit tests for errors
  - B. To make sure the tests are ready before the code is written
  - C. To make the code easier to update and maintain
  - D. To get a consistent level of technical debt that will make it easier to forecast velocity
10. We put risk mitigation stories in the backlog to:
  - A. Avoid having to keep a separate list of threats and issues.
  - B. Keep the team focused on risks.
  - C. Ensure that risk reduction efforts are done in the early iterations.
  - D. Make sure the team doesn't forget to do something about the risks.
11. Which scenario is an example of treating a change as coming from common causes of variation, when it actually comes from a special cause?
  - A. Gathering the team to investigate why their last retrospective ran 15 minutes longer than the 2-hour timebox
  - B. Sending a mass e-mail to stakeholders to remind them not to interrupt the team members during an iteration
  - C. Asking the product owner to delay the release deadline next month because the team won't have finished all the release scope by then
  - D. Assuring the sponsor that the team will finish the release on time next month based on their historical average velocity, even though the senior developer just broke her leg and will be out for six weeks
12. As the team lead, you have been asked to explain to the business what the project team has accomplished during Iteration 0. Which of the following tools would you use for this presentation?
  - A. Technical debt burnup chart
  - B. Risk burndown graph
  - C. Risk-adjusted backlog
  - D. Average defects per release
13. As the team's agile coach, you measure small amounts of variance in task durations. What should you do?
  - A. Undertake root cause analysis to eliminate it.
  - B. Engage the team in diagnosing the problem.
  - C. Diagnose the issue as part of your leadership role.
  - D. Accept some variance as inevitable.

14. What is the advantage of using risk severity instead of expected monetary value (EMV) to rank risks?
  - A. Risk severity helps us focus on the relative value of the risks.
  - B. Risk severity is more accurate than EMV.
  - C. EMV is less realistic than risk severity.
  - D. EMV can't be ranked on a simple scale (low, medium, high).
15. What is one cause of technical debt?
  - A. Trying to keep all the code perfectly neat and standardized
  - B. Refactoring that hasn't been done on a regular basis
  - C. Building a stripped-down minimal viable product
  - D. Pair programming stress and burnout
16. What is the agile approach to problem solving?
  - A. Fix the problem after it arises, at the last responsible moment.
  - B. To keep velocity consistent, only fix problems that are posing impediments to progress.
  - C. When a problem arises, either fix it on the spot or add it to the backlog.
  - D. Capture impediments, problems, and lessons learned daily in the stand-up meetings.
17. As a team member, if you encounter a tricky problem during a development iteration, agile recommends that you:
  - A. Stop what you're doing until you figure out a solution, using your individual expertise and ingenuity.
  - B. Tell the ScrumMaster about the problem and let them decide what to do about it, since it's their job to remove impediments to progress.
  - C. Just keep moving ahead so your velocity isn't disrupted, since most problems eventually take care of themselves.
  - D. Quickly bring the problem to your team members and ask for their help in solving it, since many heads are better than one.
18. Stories and features are prioritized in the risk-adjusted backlog based on their:
  - A. Risk impact or risk probability
  - B. Risk mitigation impact or user impact
  - C. Expected monetary value or business value
  - D. Cost-benefit ratio or customer value
19. When a problem arises, what steps are needed?
  - A. Remove the bad work and redo it; then look for other problems that might be related to that issue.
  - B. Revise the plan since we have fallen behind.
  - C. Diagnose the problem, decide what to do about it, and fix the problem (remove the bad work and redo it).
  - D. Decide what to do and add the new work to the backlog.
20. What is the least likely reason why changes found later in the project are more costly to fix?
  - A. More rework might be needed to fix the problem.
  - B. More stakeholders might be affected by the problem.
  - C. More code might have to be refactored.
  - D. More features might have to be supported.

## Answers

**1. Answer: B**

**Explanation:** To assign a new risk to the right place in the backlog, we need to assess its probability and impact so we can calculate its expected monetary value. Although the team members might be able to assess some risks themselves, that option isn't offered here. Other risks might require the specialized knowledge of a subject matter expert, such as the customer—so this is the correct answer here. We wouldn't add the risk directly to the top of the backlog without analyzing its probability and impact. Also, in most cases it wouldn't be worthwhile to stop the project to evaluate its root cause. Although we could certainly schedule a risk-based spike, before doing that we would want to know the priority of the risk in comparison to the other work, based on its expected monetary value.

**2. Answer: B**

**Explanation:** The best answer here is to create an environment in which people are encouraged to openly share their mistakes and problems with each other. This will not only allow problems to be solved more quickly, it will also lead to better solutions by drawing upon a wider range of viewpoints. Minimizing arguments and disagreements stifles the healthy debate that is necessary for finding the best solution to a problem. Asking senior team members to mentor their peers would probably be misinterpreted and lead to problems—also, on an agile team, mentoring is done by the team coach or ScrumMaster, not the team members (who have their own work to do). Posting scores on a leaderboard to encourage competition wouldn't be consistent with the agile principles of respect and team empowerment.

**3. Answer: A**

**Explanation:** The phrasing of this question is a bit misleading since only one of these options (variance analysis) is a method for detecting problems. Because Option A is the only viable answer, the speed of finding problems isn't relevant for selecting the answer. Although our level of technical debt and defect cycle time may be useful metrics for diagnosing or analyzing problems, they don't help us identify the problems in the first place. Risk burnup chart is a made-up term.

**4. Answer: C**

**Explanation:** Agile team members are expected to solve most of their technical problems collectively as the work proceeds. They don't try to figure out solutions on their own or bring their problems to their coach, since those approaches wouldn't draw upon the team's collective technical expertise and diverse viewpoints. They also don't report all their problems in the daily stand-up meeting; the issues mentioned in that meeting are those that the team members can't resolve themselves and that pose impediments to their further progress.

**5. Answer: C**

**Explanation:** Although this question uses the word who, it is actually asking for the IDEAL way to catch and fix an error. Because of the cost of change curve, the sooner an error can be found, the better. So we are looking for the fastest way to identify an error, not who will do it—and the quickest way to find a coding error is to catch it in pair programming.

**6. Answer: D**

**Explanation:** On an empowered agile team, it is up to the team members to resolve their technical disputes collectively. The coach, ScrumMaster, or product owner is unlikely to have the knowledge required to make such decisions.

**7. Answer: D**

**Explanation:** A risk burndown graph is a stacked area chart that shows the project's cumulative risk severity. When the top line of this graph moves downward, it means that the project's cumulative risk is being reduced. So we ideally want to see a sharp downward trend as early as possible in the project, to show that the project risks are being quickly resolved. Minimizing risk early is one of the ways that agile teams maximize value, as reflected in the agile value proposition.

**8. Answer: A**

**Explanation:** This question isn't really about XP teams—although it does require some understanding of team roles, it's really checking whether you understand the agile approach to problem solving. On an agile team (regardless of the methodology), problems are approached and resolved collectively, rather than individually. Telling the customer and alerting the other coders wouldn't help to solve the problem and might even stir up unnecessary trouble.

**9. Answer: C**

**Explanation:** This question tests whether you know that refactoring is the process of streamlining and standardizing the code to make it easier to update and maintain. The unit tests don't need to be checked for errors since they are themselves error-checking tools. Agile software teams do write the tests before the code, but that isn't why they refactor their code; refactoring is simply the last step in that process. The remaining option that refers to technical debt is made-up nonsense.

**10. Answer: C**

**Explanation:** Here we have a few reasonable choices to consider, but only one option is the main reason. Putting risks in the backlog does prevent us from having to maintain a separate list, but that is not the reason we do it. It also helps keep the team focused on the risk, but again, that is not the main reason we do it. Keeping the team from forgetting about the risk is a lot like the previous idea, and is also not the real reason we put risks into the backlog. Instead, the main reason we do that is to ensure that the risk mitigation work is done early in the project, to rapidly address any risks that can reduce value.

**11. Answer: D**

**Explanation:** Although all the scenarios listed are mistakes in one way or another, only option D is an example of treating a change as if it came from common causes of variation, when it actually came from a special cause. In this scenario, the absence of the team's most experienced developer during the final project push will most certainly affect their velocity, even if someone else is brought on board to fill in. (The addition of a new person to the team, even temporarily, would be likely to send them back to the Storming stage.)

**12. Answer: B**

**Explanation:** Since Iteration 0 is concerned with establishing tools and environments and proving approaches, a risk burndown graph would be a good way to show what the team has been working on. While they may not have built any business functionality, hopefully they will have reduced some technical risks and proven some of the key approaches that will be used. The other tools are either made-up terms (technical debt burnup chart) or not relevant to the task at hand (risk-adjusted backlog, average defects per release).

**13. Answer: D**

**Explanation:** The question states that the variance amounts are small. Since some amount of variance is inevitable, we should simply accept it. It would be inappropriate to undertake root cause analysis or take more time to try to diagnose this variation since it is due to common causes.

**14. Answer: A**

**Explanation:** The advantage of using risk severity instead of EMV to rank risks is that risk severity helps us focus on the relative value of the project risks rather than their exact dollar amounts. The other options are incorrect statements.

**15. Answer: B**

**Explanation:** If you know that technical debt is code that hasn't been refactored or standardized, then this answer should be clear. Building a minimal viable product shouldn't lead to more technical debt than any other kind of product design. Also, pair programming shouldn't lead to burnout because the pairs change roles regularly. (If you and your teammate just don't get along, the best approach would be to raise and address that problem before the quality of your work slips and starts to affect the project, rather than afterward.)

**16. Answer: C**

**Explanation:** When a problem is found, we first try to fix it immediately (as we can do in pair programming or unit testing). If we can't fix it right away, the remediation effort is added to the backlog to be implemented as soon as possible. In regard to option A, agile teams prefer to prevent rather than fix problems—and once a problem arises, they try to address it quickly (not "at the last responsible moment") to keep technical debt to a minimum. The other two options are incorrect.

**17. Answer: D**

**Explanation:** Agile teams rely on collective problem solving rather than individual ingenuity because problems are solved more quickly and effectively when diverse viewpoints are brought to bear, rather than when team members try to push through on their own. And although it is the ScrumMaster's role to remove impediments to progress, that refers to external roadblocks. When it comes to development issues, in many cases only the team members have the expertise needed to resolve the issue, so those kinds of problems can't be delegated to the ScrumMaster. Also, one thing we definitely don't want to do is to ignore a problem and hope it will go away; that's a surefire recipe for technical debt, if not project failure.

18. **Answer: C**

**Explanation:** We prioritize risk stories based on their expected monetary value and feature stories based on their business value. Option A, “risk impact or risk probability” is partly correct, because that’s how we calculate expected monetary value; however, that doesn’t account for feature stories, and the question doesn’t specify only risk stories. The other two options are made-up.

19. **Answer: C**

**Explanation:** This question is a bit tricky, since there are certain correct aspects to all the answer options. However, the question asks for the steps needed in response to a problem, and option C provides the most complete list of actions to take. Option A misses the important steps of diagnosing the problem and deciding what to do about it. Option B is least likely to be correct, since agile plans are re-evaluated anyway in planning each iteration. Option D is correct as far as it goes, but often we might be able to fix the problem right away rather than adding it to the backlog.

20. **Answer: D**

**Explanation:** The first three options are all classic reasons why the cost of change goes up over time. That leaves option D, “more features might have to be supported.” Now, this statement could be interpreted as still another reason why changes would be more costly—but the need to support more features isn’t necessarily related to the cost of change. So this is the option least likely to affect the cost of change, and therefore the correct answer.

## **Chapter Review**

1. Process tailoring would be a good option for:
  - A. A new team that has been formed by the merger of two other agile teams
  - B. A team that is struggling to get their agile methods to work smoothly
  - C. A team that is using agile successfully but would like to improve their methods
  - D. A team that wants to start using agile methods
2. A series of project pre-mortems would be most useful on:
  - A. A long-term, risky project
  - B. A short project with a hard deadline
  - C. A proposed project with well-defined technology and requirements
  - D. A project that will require process tailoring
3. You hear that another team is using an agile-traditional hybrid approach. What is this most likely to involve?
  - A. They are using agile methods to plan the project and traditional methods to track and measure performance.
  - B. They are using agile methods for project accounting and traditional methods for the other elements of the project.
  - C. They are using traditional methods to estimate the work and agile methods to plan the work.
  - D. They are using agile methods to build the product and traditional methods for the procurement workflow.
4. In a retrospective, what technique could your team use to ensure that you really understand a problem you've identified?
  - A. Five Whys
  - B. Dot voting
  - C. Kano analysis
  - D. MoSCoW
5. If your total cycle time has remained the same but your value-added time has gone up, what does this mean?
  - A. Your nonvalue-added time has increased.
  - B. Your value-added time now equals your nonvalue-added time.
  - C. The efficiency of your process has decreased.
  - D. The efficiency of your process has improved.
6. The best way to improve the efficiency of a process is to:
  - A. Do more detailed planning.
  - B. Remove waste and bottlenecks.
  - C. Minimize common cause variation.
  - D. Add more stringent process controls.

7. Your team spends 10 minutes waiting for people to turn up for the daily stand-up meeting, which then lasts 15 minutes. The stand-up meeting is then followed by another 5 minutes of the team discussing the hockey game last night, and yet another 5 minutes brainstorming issues to solve. Calculate the total cycle time of this process, assuming that the hockey discussion is not categorized as a value-added activity.
  - A. 15 minutes
  - B. 20 minutes
  - C. 30 minutes
  - D. 35 minutes
8. When generating insights in a retrospective, we ask “why” five times to:
  - A. Move beyond our automatic, habitual answers and get to the root cause of an issue.
  - B. Get past the denial and resistance that tend to occur in the first three or four answers.
  - C. Gather five levels of data around the issue.
  - D. Avoid asking “why” six times, since that would be overkill.
9. Which of the following is a form of agile review?
  - A. Sprints
  - B. Customer demos
  - C. Unit testing
  - D. Project pre-mortems
10. In agile, the kaizen approach involves:
  - A. Continuous, incremental improvements recommended by process experts
  - B. Bold, top-down re-engineering initiatives
  - C. Small, incremental improvements by the people who are doing the work
  - D. Stopping the process as needed to implement essential improvements
11. You have been asked to review an agile team’s recently enhanced methodology to assess its effectiveness. The desirable characteristics that you should be looking for include:
  - A. A preference for rapid communications, significant process weight, recommendations for larger teams to use lighter methods
  - B. A preference for digital communications, not too much process weight, recommendations for larger teams to use simpler methods
  - C. A preference for relevant communications, significant process weight, recommendations for larger teams to use heavier methods
  - D. A preference for face-to-face communications, not too much process weight, recommendations for larger teams to use heavier methods
12. Continuous improvement is a core benefit of which agile practices?
  - A. Pair programming, daily stand-up meetings, WIP limits
  - B. User stories, daily stand-up meetings, retrospectives
  - C. Pair programming, daily stand-up meetings, retrospectives
  - D. Story points, pair programming, WIP limits

13. Which of the following is not one of the questions that we are continually asking in a product feedback loop?
  - A. Does it meet the customer needs and expectations?
  - B. Does it work in all conditions?
  - C. Did we break anything while building this?
  - D. Did the project get shipped?
14. The primary reason for doing a project pre-mortem is to:
  - A. Gather lessons learned from an iteration.
  - B. Summarize the lessons learned at the end of a project.
  - C. Identify potential risks so that we can mitigate them.
  - D. Accurately forecast the results of the project.
15. On the chart used in the Timeline exercise for gathering data in a retrospective, a horizontal line can be added below the x-axis to represent:
  - A. Team velocity over time
  - B. Team emotional responses over time
  - C. Team risk rankings average
  - D. Team hours of work per week
16. Process tailoring is best undertaken on agile projects when:
  - A. There are difficulties in implementing agile practices.
  - B. Experienced practitioners want to address an issue.
  - C. The team needs new processes to keep them engaged.
  - D. A boost in team velocity is needed to meet the schedule.
17. Which of the following benefits would your agile team most likely gain from performing a self-assessment?
  - A. Improve the team's practices.
  - B. Gain insights for individual performance reviews.
  - C. Identify personal traits for human resources counseling.
  - D. Determine compatibilities for pair programming assignments.
18. When should agile teams collect lessons learned?
  - A. At the end of the project
  - B. Throughout the project
  - C. When projects go well
  - D. When projects go poorly
19. Your sponsor is asking about tailoring the company's newly adopted agile methodology. Your advice should be:
  - A. Tailoring it will be a good way to learn more about the methodology.
  - B. Tailoring it will be a good way to ease into the initial adoption process.
  - C. We should tailor it first, then consider adopting it.
  - D. We should try it first, then consider tailoring it.

20. Teams gain the most benefits from using an agile approach in:
- A. Projects that are as uncertain as possible
  - B. Projects with high levels of technological uncertainty and low levels of complexity in requirements
  - C. Projects with medium levels of complexity in both technology and requirements
  - D. Projects with low levels of uncertainty in requirements and technology

## Answers

**1. Answer: C**

**Explanation:** Process tailoring should only be attempted after a team has mastered agile, and the best reason for doing it is to improve upon methods that are basically already working well. Process tailoring would not be a good idea in any of the other scenarios described here.

**2. Answer: A**

**Explanation:** Some of the questions on the PMI-ACP exam will be relatively straightforward and can be figured out logically. Here is an example. To answer this question, ask yourself when a series of dedicated workshops for identifying potential risks would be most worthwhile. On a short, time-sensitive project we probably wouldn't have the time for such an effort. On a project with well-defined technology and requirements, the risks might not be significant enough to justify gathering the stakeholders for multiple pre-mortems. And "a project that will require process tailoring" is a distractor, since the decision whether to tailor the team's process is generally up to the team members, not a requirement for the project. Also, that description doesn't really tell us anything about the project concerned, which means that it can't be the BEST answer to the question. This process of elimination leaves a long-term, risky project as the correct answer.

**3. Answer: D**

**Explanation:** The options for this question provide four possible scenarios for using an agile-traditional hybrid approach. Three of the options would be unlikely in the real world since they describe an awkward mixture that would be hard to use effectively. Only one of these scenarios would be a common type of real-world hybrid—using an agile approach for incremental development along with a traditional approach for procurement. With a good grasp of agile, this answer should stand out as the most likely approach. However, this question may still be tricky because you have to stop and think through the implications of each option.

**4. Answer: A**

**Explanation:** The PMI-ACP exam is unlikely to pose detailed questions about the retrospective process; however, you should have a basic understanding of the four techniques listed in this question. Dot voting is a method for participatory decision making. Kano analysis is a tool that can be helpful for prioritizing product features from the user's perspective. MoSCoW is a commonly used prioritization method. That leaves Five Whys, which is a team exercise used to get to the root cause of a given problem—and therefore the correct answer to this question.

**5. Answer: D**

**Explanation:** In value stream mapping, total cycle time is the sum of value-added time and nonvalue-added time, and the efficiency of a process is its value-added time divided by its total cycle time. Based on these formulas, if the value-added time of a process has increased while its total cycle time has remained the same, that means its efficiency has improved.

6. **Answer:** B

**Explanation:** Although this question is framed in the terminology of value stream mapping, to identify the correct answer you really just need to understand the importance of removing waste and bottlenecks, which is a key principle of agile/lean approaches. While more detailed planning, reduced common cause variation, and more stringent process controls might also improve the efficiency of a process, they typically aren't the best or most cost-effective ways to do that on an agile project.

7. **Answer:** D

**Explanation:** Since the total cycle time is the value-added time + the nonvalue-added time, we do not actually need to determine what falls under the value-added category. Instead, we just need to add up all the times involved:  $10 + 15 + 5 + 5 = 35$  minutes.

8. **Answer:** A

**Explanation:** The goal of the Five Whys exercise is to move beyond our automatic, habitual answers and get to the root cause of an issue. The other options are made-up.

9. **Answer:** B

**Explanation:** Agile methods adhere to the scientific method, in which experiments are followed by reviews. From this perspective, sprints, unit testing, and project pre-mortems would all be considered experiments in which the team is doing the work or gathering data. On the other hand, customer demos are a form of review, in which the team gets feedback on the work they completed in the sprint from the customer.

10. **Answer:** C

**Explanation:** The kaizen approach focuses on encouraging the team (the people who are doing the work) to frequently initiate and implement small, incremental improvements. This approach is based on a completely different mindset than top-down, management-led re-engineering initiatives, which are typically large, one-time efforts. Although it wasn't mentioned earlier, in manufacturing systems that have a production line, kaizen does stop the process as needed to address issues. However, that isn't a key component of the kaizen approach as applied to knowledge work.

11. **Answer:** D

**Explanation:** Desirable methodology characteristics include a preference for face-to-face communications, not too much process weight, and a recommendation that larger teams use heavier methods. The option of significant process weight is generally the opposite of the barely sufficient goal we should be striving for. However, as teams get larger, we will inevitably need to use heavier methodologies to compensate for the reduced face-to-face communications and the increased difficulty of maintaining tacit knowledge.

12. **Answer:** C

**Explanation:** Continuous improvement is a core function of the practices of pair programming, daily stand-up meetings, and retrospectives. It has little to do with WIP limits, story points, or user stories.

13. **Answer:** D

**Explanation:** The first three options are the questions that are asked in a product feedback loop, at increasingly more granular levels as the project proceeds. The last question is associated with the methodology success criteria for process analysis, not feedback loops.

**14. Answer:** C

**Explanation:** The primary reason for doing a project pre-mortem is to identify potential risks to the project so that we can mitigate them. Although it does involve forecasting the results in a way, that is simply the framework used for identifying risks. The other options are incorrect.

**15. Answer:** B

**Explanation:** Below the timeline chart, the team can draw a line that tracks their feelings about the iteration or project as it progressed. Tracking how they felt at each point in the process can help them recollect additional data.

**16. Answer:** B

**Explanation:** Process tailoring is not to be undertaken just for implementation issues, to entertain the team, or as a scheme to increase velocity (although velocity might improve as a result of a process change, that isn't the "best" reason to do it). The correct answer is that it is best for experienced practitioners to undertake process tailoring when there is an issue to address.

**17. Answer:** A

**Explanation:** The most likely benefit of performing a self-assessment is an improvement of the team's practices. While some of the other options might ensue as tangential benefits, they aren't the focus of a self-assessment exercise, which focuses on the team as a whole.

**18. Answer:** B

**Explanation:** Lessons learned should be captured throughout the project when the information is still fresh and people remember the most details. This allows the lessons to be used in the remainder of the project.

**19. Answer:** D

**Explanation:** Agile methods should be tried as-is first before considering modifications for process tailoring. We need to first understand how the practices work before we attempt to change them. If we change the method first and then encounter problems, how will we know if the problems are genuine project issues or the result of the changes we made?

**20. Answer:** C

**Explanation:** From the perspective of systems thinking, the projects that can gain the most from using an agile approach are those that have medium levels of complexity (i.e., uncertainty) in both technology and requirements.

# Assessment Test

- 1.** What is the last value of the Agile Manifesto?
  - A.** Responding to change over following a plan
  - B.** Individuals and interactions over processes and tools
  - C.** Customer collaboration over contract negotiation
  - D.** Working software over comprehensive documentation
  
- 2.** Is Scrum an Agile methodology?
  - A.** Yes. One of many
  - B.** No. Scrum is a Waterfall method.
  - C.** Yes. Scrum applies to best practices or methods of Agile.
  - D.** No. Scrum is a framework.
  
- 3.** What does MoSCoW stand for?
  - A.** Must Scrum Consistently Not Waterfall.
  - B.** More Scrum Coding Willingly.
  - C.** Must, Should, Could, and Won't.
  - D.** MoSCoW is a made-up acronym.
  
- 4.** What is the difference between Waterfall/predictive project management and Agile frameworks?
  - A.** Waterfall is preplanned and so are Agile projects.
  - B.** Scope is fixed on Agile projects but not on Waterfall projects.
  - C.** Agile plans are just in time, and Waterfall projects are preplanned.
  - D.** They both are project management frameworks.
  
- 5.** Bill and Juan are discussing their Scrum project and are trying to understand empirical process control. As their Scrum Master, how would you explain it?
  - A.** Decisions are made based on observation and experimentation rather than on detailed up-front planning.
  - B.** Decisions are made based on a business case rather than at the last minute.
  - C.** Decisions are made based on expert judgment.
  - D.** Decisions are made by senior management.
  
- 6.** Scrum can best be described as which of the following?
  - A.** A methodology
  - B.** A philosophy
  - C.** A framework
  - D.** A method of project management

7. XP is an acronym that stands for which of the following?
  - A. Extra Projects
  - B. Extreme Projects
  - C. Extreme Programs
  - D. Extreme Programming
8. Which of the following describes the seven forms of waste on an Agile project?
  - A. Kanban
  - B. Lean
  - C. Kaizen
  - D. Crystal
9. During a sprint, which of the following describes the development team meeting to discuss what they worked on the day before, what they worked on today, and what impediments are in their way?
  - A. Daily stand-up meetings
  - B. Sprint planning
  - C. Sprint review
  - D. Daily Scrum
10. What is the difference between a Waterfall project charter and an Agile project charter?
  - A. Agile projects don't use charters.
  - B. Waterfall charters are comprehensive, and Agile charters are more flexible.
  - C. Waterfall charters are needed for formal authorization to begin, and Agile charters are just a kickoff document.
  - D. There isn't a difference.
11. In order for all stakeholders to have an idea as to what the finished product increment will be, what must be discussed and agreed upon?
  - A. The final product
  - B. The schedule
  - C. The definition of done
  - D. The scope definition
12. You are the Agile project manager for a brand-new team who is just learning about Agile frameworks. How do you explain your role on the project?
  - A. You are a servant leader.
  - B. You manage the product backlog.
  - C. You create schedules and budgets for senior management.
  - D. You have the final say on the definition of done.

- 13.** Your newly formed team is experiencing some conflict in work styles and can't seem to agree on a direction. According to Tuckman's Ladder, what stage is your team currently in?
- A.** Forming
  - B.** Storming
  - C.** Norming
  - D.** Mourning
- 14.** As an Agile project manager, it is important for you to have a variety of interpersonal skills. This will enable you to better lead your team. Which of the following describes your leadership capabilities?
- A.** Effective leadership
  - B.** Adaptive leadership
  - C.** Agile leadership
  - D.** Team leadership
- 15.** A team that is very new to Agile decides that they will have a bit of an initiation phase to determine how to move forward. The phase will not produce an increment, but it is helpful to determine direction. What is this phase referred to?
- A.** Iteration Zero
  - B.** Initiation phase
  - C.** Iteration one
  - D.** Kickoff phase
- 16.** A distinct iteration length or meeting duration can best be described as which of the following?
- A.** Schedule
  - B.** Timebox
  - C.** Duration estimation
  - D.** Epics
- 17.** Why is planning poker an effective way to plan how much work the team will accomplish in a sprint or iteration?
- A.** The team decides what to discuss.
  - B.** Size is easier to estimate than duration.
  - C.** The Agile project manager can team build.
  - D.** It allows for bonding on the team level.
- 18.** Which of the following best describes how the scope of work is represented?
- A.** Tasks
  - B.** Activities
  - C.** Maps
  - D.** User stories

- 19.** Your customer has explained to the team that they want a software program that will help them with their sales data. After you collect requirements and build out the first increment, the customer states that it isn't anything like what they were picturing and it is going in the wrong direction. What could have happened to cause this?
- A.** The gulf of misunderstanding
  - B.** The project manager didn't collect the right information.
  - C.** The customer doesn't know what they need.
  - D.** The customer is just being difficult because they don't understand software design.
- 20.** In a group discussion with your stakeholders, the team suggests that they give the customer the equivalent of the total budget in fake money to see how they would spend it and on what features. This is referred to as which of the following?
- A.** 100-point method
  - B.** Kano analysis
  - C.** Monopoly money
  - D.** Dot voting
- 21.** You are the product owner working on the backlog, and your team identifies a risk event that could potentially be more expensive than three of the four features being built. How could the product owner address this?
- A.** With a risk-adjusted backlog
  - B.** With a risk register
  - C.** With a discussion meeting
  - D.** With a risk response
- 22.** Carl is working on a string of code he created several weeks ago in order to make it more efficient without changing its behavior. What is Carl doing?
- A.** Tech debt
  - B.** Refactoring
  - C.** Bug fix
  - D.** Fixing defects
- 23.** Right in the middle of a very important project, the entire team's computers crash due to a virus. This is an example of which of the following?
- A.** A special cause
  - B.** A common cause
  - C.** A defect
  - D.** A risk
- 24.** Bill is explaining to Ling that the best practice is not to take on too much work in an iteration, which creates partially done work. Which of the following is Bill talking about?
- A.** Cycle time
  - B.** Lead time
  - C.** Limiting work in progress (WIP)
  - D.** Risk mitigation

- 25.** Your team has a chart in its team space that depicts risk mitigation efforts. Currently, the chart shows a downward trend. What does this tell the team?
- A.** Risk isn't being managed effectively.
  - B.** Mitigation efforts are working.
  - C.** What is in the risk-adjusted backlog.
  - D.** The team's velocity
- 26.** Dennis and Abdul are working with their team members to reduce the time it takes to produce value. The team is examining the current state and working toward a future state in a visual manner. Which of the following will help with that?
- A.** Value stream mapping
  - B.** Continuous improvement
  - C.** Shu Ha Ri
  - D.** Retrospective
- 27.** You are facilitating your team through an exercise called "remember the future." Which of the following facilitated meetings are you holding?
- A.** Lessons learned
  - B.** Intraspective
  - C.** Retrospective
  - D.** Daily Scrum
- 28.** Your team has just wrapped up a review with the customer, and it is now meeting to discuss how the iteration went. Which of the following timeboxed meetings is your team in?
- A.** Intraspective
  - B.** Lessons learned
  - C.** Retrospective
  - D.** Kick down
- 29.** Your organization runs mostly Waterfall projects, but it sees the value in several Agile best practices. So, the organization adopts those practices and adds them to the project as a hybrid approach. This is referred to as which of the following?
- A.** ScrumBan
  - B.** Enterprise Scrum
  - C.** Tailoring
  - D.** Process improvement
- 30.** The best type of team space tooling includes having the team be set up in what way?
- A.** Colocated
  - B.** Virtual
  - C.** A combination of colocated and virtual
  - D.** How the organization decides it should be set up

# Answers to Assessment Test

1. A. The Agile Manifesto's last principle is responding to change over following a plan. See Chapter 1 for more information about the Agile Manifesto and its principles.
2. B. Scrum is considered an Agile framework rather than a methodology. See Chapter 2 for more information.
3. C. The mnemonic MoSCoW is used to help prioritize features into must have, should have, could have, and won't have. See Chapter 8 for more information.
4. C. Agile frameworks focus on making plans at the last responsible moment to accommodate changes. Waterfall projects preplan and create baselines. See Chapter 1 for more information.
5. A. Empirical process control is using observation and experimentation rather than detailed up-front planning. See Chapter 2 for more information.
6. C. Scrum is described as a framework to manage projects. For more information, see Chapter 2.
7. D. XP is the acronym for eXtreme Programming, which is a type of Agile project management process. For more information, see Chapter 2.
8. B. The seven forms of waste are part of Lean. Waste consists of areas where poor practices are slowing down production of value. For more information, see Chapter 3.
9. D. The daily Scrum is considered a daily stand-up meeting but specific to the Scrum environment. For more information, see Chapter 2.
10. B. Project charters on an Agile project focus on the who, what, where, when, and how aspects with the knowledge that items may change rather than a formal, set approach to project charters as found in Waterfall projects. For additional information, see Chapter 4.
11. C. All stakeholders, including the team, must understand the definition of done so that everyone knows what the increment will be at the end of the iteration. For more information, see Chapter 4.
12. A. As an Agile project manager, you act as a coach and servant leader to your team. For more information, see Chapter 5.
13. B. A team that can't manage its own conflict because it is newly formed is experiencing storming. For additional information, see Chapter 5.
14. B. Having good interpersonal skills allows you to practice effective adaptive leadership. For additional information, see Chapter 5.
15. A. Iteration Zero allows the team to create a plan for the first iteration. Typically, it is less than a full iteration length. For additional information, see Chapter 6.

16. B. A timebox is a set amount of time for a meeting or an iteration. For example, the daily Scrum is timeboxed for 15 minutes and a sprint is timeboxed for 30 days or fewer. For additional information, see Chapter 6.
17. B. Size is easier and more accurate to estimate than direction. Planning poker is a way to gain consensus on the sizing of work. For more information, see Chapter 6.
18. D. User stories are easier to understand than a list of requirements. For more information, see Chapter 6.
19. A. The gulf of misunderstanding occurs when the definition of done isn't well understood or requirements gathered were not clear enough. For additional information, see Chapter 8.
20. C. Monopoly money is an excellent exercise to see where the customer would spend their budget and on what. This allows for a better understanding of the goals for all involved. For additional information, see Chapter 8.
21. A. A risk-adjusted backlog allows the team to build in time to mitigate the risk and still work on valuable features in an iteration. For more information, see Chapter 9.
22. B. Refactoring is adapting the code without changing its behavior. For additional information, see Chapter 9.
23. A. Both common and special causes create defects or problems on a project. In this case, even though crashes are commonly known, this was a surprise and affected everyone, therefore it is a special cause. For additional information, see Chapter 9.
24. C. Limiting WIP is the best way to make sure that all work selected is completed without partially done work. For additional information, see Chapter 9.
25. B. If the risk burn down chart is trending down, it means that the team's mitigation efforts are going well. For more information, see Chapter 9.
26. A. Value stream mapping allows the team to focus on the current state and map out future states that can be improved. For additional information, see Chapter 10.
27. B. An intraspective allows the team to focus on the future, determine what could go wrong, and focus on the best ways to move forward. See Chapter 10 for more information.
28. C. A retrospective is a timeboxed meeting in which the team discusses what went well and not so well and creates plans for process improvement. For more information, see Chapter 10.
29. C. Tailoring is when value is seen in approaches outside of the normal set of best practices and a hybrid is created to suit the project. For more information, see Chapter 10.
30. A. Best practice would state that the team be colocated for the best performance. However, there are many teams that are virtual or combinations of both. For additional information, see Chapter 10.

# Review Questions

You can find the answers to the review questions in Appendix B.

- 1.** What is the first value in the Agile Manifesto?
  - A.** Contract Negotiations over Working Plans
  - B.** Working Software over Comprehensive Documentation
  - C.** Individuals and Interactions over Processes and Tools
  - D.** Comprehensive Documentation over Customer Interaction
  
- 2.** Who were the creators of the Agile Manifesto?
  - A.** PMI
  - B.** The Agile Alliance
  - C.** Ken Beck
  - D.** The Scrum Alliance
  
- 3.** In the Agile Manifesto, it is more important to respond to changes than to do which of the following?
  - A.** Comprehensively document
  - B.** Use processes and tools
  - C.** Negotiate contracts
  - D.** Follow a plan
  
- 4.** Which of the following is the highest priority of the 12 major principles?
  - A.** Face-to-face conversation
  - B.** Motivated individuals
  - C.** Working software
  - D.** Customer satisfaction
  
- 5.** You are working to implement Agile in your organization, and a key stakeholder asks you to explain Agile to them. What would be the best answer to explain Agile to someone who doesn't know anything about it?
  - A.** Agile is a way to produce software without change control.
  - B.** Agile is a framework for better project management.
  - C.** Agile is a mindset that allows an organization to focus on better ways to produce value for the customer and practice continuous improvement.
  - D.** Agile is the opposite of Waterfall.

6. Bill is a key stakeholder in your organization and has recently learned about your usage of an Agile framework on your current project. You've invited Bill to a planning meeting, and he says, "I thought you didn't do formal planning in Agile." How should you respond?
  - A. "We do plan our projects, but we keep our focus on the immediate items and we value working software over comprehensive documentation during planning."
  - B. "We plan as much as anyone working on projects and try to incorporate the opinions of many stakeholders to help us do it."
  - C. "We don't plan normally, but since you are new to Agile we thought we would plan as much as possible until you get comfortable with Agile."
  - D. "We build plans that we know won't work to meet stakeholder requirements."
7. Empirical process control has three main aspects to it. What would those three be?
  - A. Transparency, inspection, and adaptation
  - B. Iterative, incremental, and uncertainty
  - C. Transparency, iterative, reliability
  - D. Inspection, incremental, adaptable
8. In the past, your team has run projects using a more formal Waterfall method and now is incorporating Agile methodologies. What will be the biggest difference in how you manage your projects?
  - A. Waterfall preplans the entire project before execution, and Agile only plans out just far enough to create a workable increment that is valuable to the customer.
  - B. Agile is much more flexible in how the best practices work. As long as your team creates something usable, it doesn't matter how you accomplish it.
  - C. The Waterfall method has many books of knowledge and best practices, but Agile only has the Manifesto.
  - D. Agile plans less, and Waterfall plans more.
9. The Satir model correctly predicts why some organizations have a challenging time changing methodologies. What is the reason for that based on the model?
  - A. Organizations don't spend enough time training their people and that causes chaos.
  - B. Organizations often determine that the new method isn't working because they have not reached the integration stage and have only seen the chaos.
  - C. Organizations are used to doing things a certain way and nobody likes to change.
  - D. Organizations don't allow enough time for the chaos, which in turn doesn't allow things to level out in integration.
10. What is the main reason organizations should not jump into a hybrid method if they are new to Agile approaches?
  - A. It takes practice to implement Agile effectively on an organizational level. It's better to practice one method and become proficient before trying to combine two.
  - B. Organizations that have used both should determine which one works the best individually before creating a hybrid option.

- C. Hybrids are not recommended for large software organizations.
  - D. It can get very confusing as to which frameworks to follow if it is a combination of two types.
11. Seventeen developers met in Snowbird, Utah, in February 2001 to discuss better ways of managing software projects. What was the result of that meeting?
- A. The Declaration of Interdependence
  - B. The Agile Manifesto
  - C. The Scrum Theory
  - D. The *PMBOK® Guide*
12. What does the Agile Manifesto mean by “individuals and interactions over processes and tools”?
- A. It means that processes and tools aren’t needed on Agile projects.
  - B. It means that without processes and tools, the individuals and interactions will not be effective.
  - C. It means that individuals and interactions are valued more than processes and tools.
  - D. It means that both are necessary and work together to produce working software.
13. Which of the following best describes why Waterfall project management isn’t the most effective way to manage software development projects?
- A. The rapid pace and constant changes make it difficult to preplan and create baselines.
  - B. The Agile life cycles are different and therefore incompatible with Waterfall.
  - C. Waterfall is for construction, and Agile is for software.
  - D. Waterfall is an effective way to manage software projects as long as you have the scope of work up front.
14. Complete the rest of this statement from the Agile Manifesto: Individuals and interactions over \_\_\_\_\_.
- A. Following a plan
  - B. Comprehensive documentation
  - C. Contract negotiation
  - D. Processes and tools
15. Complete the rest of this statement from the Agile Manifesto: Responding to change over \_\_\_\_\_.
- A. Following a plan
  - B. Comprehensive documentation
  - C. Contract negotiation
  - D. Processes and tools

- 16.** Complete the rest of this statement from the Agile Manifesto: Working software over \_\_\_\_\_.
- A.** Following a plan
  - B.** Comprehensive documentation
  - C.** Contract negotiation
  - D.** Processes and tools
- 17.** Complete the rest of this statement from the Agile Manifesto: Customer collaboration over \_\_\_\_\_.
- A.** Following a plan
  - B.** Comprehensive documentation
  - C.** Contract negotiation
  - D.** Processes and tools
- 18.** In the Declaration of Interdependence, which of the following increases by making continuous flow of value the focus?
- A.** Reliable results
  - B.** Creativity and innovation
  - C.** ROI
  - D.** A boost in performance
- 19.** What is the best way to explain Agile project teams based on the values of the Agile Manifesto?
- A.** Managed by a project manager
  - B.** Managed by an Agile project manager
  - C.** Not managed by anyone
  - D.** Self-directed and self-managed
- 20.** Agile project teams work best in what dynamic?
- A.** Collocated
  - B.** Virtual
  - C.** A combination of collocated and virtual
  - D.** A cross-functional dynamic

## Review Questions

You can find the answers to the review questions in Appendix B.

1. Which of the following best describes Scrum?
  - A. A process
  - B. A framework
  - C. An Agile method
  - D. A Waterfall method
2. Which of the following is not a Scrum artifact?
  - A. Retrospective
  - B. Product backlog
  - C. Sprint backlog
  - D. Increment
3. When is it an acceptable time to cancel a sprint in the middle of a project?
  - A. When the product owner says so
  - B. When the customer requests it
  - C. When the scope of work changes
  - D. Never
4. Which of the following is *not* a core value of XP?
  - A. Coaching
  - B. Communication
  - C. Respect
  - D. Courage
5. Which of the following best practices are unique to eXtreme Programming?
  - A. Scrum of Scrums
  - B. MoSCoW
  - C. Kanban
  - D. Pair programming
6. One Scrum ceremony or activity is the team getting together to discuss what they will do today, what they did yesterday, and anything standing in their way. This is known as which of the following?
  - A. Scrum of Scrums
  - B. Daily Scrum
  - C. Sprint review
  - D. Sprint retrospective

7. You are a Scrum Master, and you hear during a daily Scrum that your team is a bit behind schedule. The impediments they mention are having to do too many updates to stakeholders and too much paperwork. What is the best thing to do?
  - A. Communicate with the stakeholders, and ask them not to bother your team.
  - B. Coach the team on Agile principles to help them get back on schedule.
  - C. Do nothing; the team is self-managed.
  - D. Take on administrative work as needed to help your team.
8. During your 15-minute stand-up meeting, two of your team members start discussing a solution to one of the issues that they ran into the day before. As the Scrum Master or Agile project manager, what should you do?
  - A. Extend the meeting and encourage your team to find a solution before going back to work.
  - B. Invite other experts to the meeting to help create a solution.
  - C. Make sure you help them resolve the issues after the meeting but not during.
  - D. Do nothing—a Scrum Master only listens during the stand-up meeting.
9. You are the product owner and have just started working on a new Agile team. One of the team members wants to know what your job entails. What do you tell them?
  - A. “My job is to make sure the team has daily stand-up meetings and continues to embrace Agile methodologies.”
  - B. “My job is to coach management on the different aspects of Agile project management.”
  - C. “My job is to own the product backlog and make sure customer value is realized.”
  - D. “My job is to debate requirements with key stakeholders to make sure we are building the product correctly.”
10. As an Agile project manager, you want your team to be which of the following?
  - A. Totally dependent on your project plans
  - B. Totally dependent on the product backlog
  - C. Self-organizing and self-managed
  - D. Self-organizing and servant leaders
11. You are a practicing Agile project manager, and you are explaining to your new team the value of retrospectives. What will the team understand about retrospectives once you have explained it to them?
  - A. Retrospectives are a planned review and reflection point.
  - B. Retrospectives are a necessary function of all Agile methodologies.
  - C. Retrospectives are when the customer tests the increment.
  - D. Retrospectives are for helping to groom the backlog.

- 12.** As an Agile project manager, you explain to your team that, as their coach, you are there to provide for the team's needs and remove any roadblocks to their progress. This is also described as which of the following?
- A.** Project management
  - B.** Agile leadership
  - C.** Management and leadership
  - D.** Servant leadership
- 13.** Which of the following items does your team need to produce a working, viable product or service?
- A.** A definition of done
  - B.** Approval from the product owner to create user stories
  - C.** A well-planned strategy to accomplish project goals
  - D.** A wireframe with a breakdown of the product needs
- 14.** Your customer is asking you to describe what you mean by self-organizing and self-managing teams. How would you describe them?
- A.** Your team is colocated, which helps with self-organization and self-management.
  - B.** Your team is a group of experts who don't need a manager.
  - C.** Your team can make all project-related decisions.
  - D.** Your team can make local decisions about how to produce the result of each iteration based on a shared knowledge of the definition of done.
- 15.** The basics of a stand-up meeting are to achieve which of the following?
- A.** Identify problems and describe what has been accomplished since the last meeting.
  - B.** Describe accomplishment for motivation.
  - C.** Coordinate discussions on problems and work on solutions.
  - D.** Identify opportunities for improvement.
- 16.** Who is responsible for the product backlog?
- A.** The Scrum Master
  - B.** The product owner
  - C.** Everyone
  - D.** The sponsor
- 17.** Your new Scrum team is looking forward to practicing the time box methodologies of Scrum and Agile. When asked how long the stand-up meetings will be time-boxed for, what will you say?
- A.** Stand-up meetings are weekly for one hour.
  - B.** Stand-up meetings are for Waterfall projects.
  - C.** Stand-up meetings will require 15 minutes every day.
  - D.** Stand-up meetings will require 15 minutes every week.

- 18.** You and the team are working with a visible master list of work to be done and are constantly reviewing and updating it with requirements that will be reorganized and reprioritized repeatedly. This is an example of which of the following?
- A.** You are the development team planning the next iteration.
  - B.** Working with the team to groom the backlog
  - C.** You are the Scrum Master working with the customer on priority.
  - D.** You are the customer working with the product owner to keep your priorities up to date on the Kanban board.
- 19.** Julie has just joined your organization as a new team member. She has heard of Agile as a concept and has a bit of Scrum experience, but she is confused about the sprint backlog and where it came from. What is an effective way to explain to Julie what the sprint backlog is?
- A.** It's a separate list of things that the development team wants to accomplish on the sprint.
  - B.** It's basically the product backlog with the items chosen by the development team based on what they can accomplish during the sprint rather than a totally separate list or artifact.
  - C.** It's the list of value to be created as well as the risk-adjusted backlog items.
  - D.** It's the development team's "punch list," and it includes the theme of the sprint.
- 20.** Daily stand-up meetings or daily Scrums are designed to work through three questions. What did we do yesterday? What will we do today? Which of the following is the third question?
- A.** What impediments are in our way?
  - B.** What solutions have we created?
  - C.** What risk events have occurred?
  - D.** What backlog items need to be accomplished?

# Review Questions

You can find the answers to the review questions in Appendix B.

- 1.** Why is using the MoSCoW Approach in DSDM so important?
  - A.** To make sure that the least important features are finished last
  - B.** It incorporates the Pareto principle.
  - C.** It allows for timeboxing the approach.
  - D.** To make sure that the most important features are in the ultimate solution no matter what
- 2.** The Pareto principle is seen in many project management and quality methodologies. Why is the principle so important to use when determining cause and effect?
  - A.** Eighty percent of all effort produces 20 percent of the result.
  - B.** Improving to 80 percent productivity will produce better results.
  - C.** Roughly 80 percent of the effects come from 20 percent of the causes.
  - D.** Twenty percent of the defects are created by 80 percent of the effort.
- 3.** Which of the following is a correct statement?
  - A.** Lean is the opposite of value.
  - B.** Haste makes waste.
  - C.** There are ten forms of waste.
  - D.** Waste is the opposite of value.
- 4.** Other than defects, which of the following is included in the seven wastes of Lean software development?
  - A.** Handoffs
  - B.** Poorly designed backlog
  - C.** Too many meetings
  - D.** Lack of pair programming
- 5.** Using Kanban methodology, which of the following is the best way to show performance and WIP to the team and to the customer?
  - A.** Scrum board
  - B.** Kanban board
  - C.** Work radiators
  - D.** Status reports
- 6.** Why is a pull system so important in the practice of Kanban?
  - A.** To limit work in progress
  - B.** To protect the quality
  - C.** To use the team wisely
  - D.** To update progressively

7. Why was Feature-Driven Development created?
  - A. To accommodate larger teams
  - B. To create features that are developed
  - C. To incorporate many stakeholders in the process
  - D. To complement Scrum
8. Which of the following is the best way to complete the sentence: In Crystal methods, \_\_\_\_\_ increases with team size.
  - A. The number of stakeholders
  - B. The framework
  - C. Criticality
  - D. Output
9. Mission focused, feature based, iterative, timeboxed, risk-driven, and \_\_\_\_\_ are all characteristics of an ASD life cycle.
  - A. Plan-driven
  - B. Adaptive
  - C. Rule-oriented
  - D. Change-tolerant
10. Your team is currently a bit behind schedule, and it is worried that it won't complete the work before the iteration ends. If you are practicing good servant leadership, what should you do first?
  - A. Hold stand-up meetings.
  - B. Communicate with stakeholders.
  - C. Coach them on Agile principles.
  - D. Take on administrative work as needed.
11. One of your team members comes to you with a problem about something that they are experiencing with key stakeholders on the project. They seem upset and are looking for you to provide some feedback. If you are actively listening to your team member, what thoughts should be running through your mind?
  - A. "I need to handle this very carefully."
  - B. "I'll have to make sure to handle it in the appropriate manner because the team member clearly needs me to help them through this problem."
  - C. "My team member is upset about something and needs to express him- or herself and gain support."
  - D. "I should tell the team member to bring this issue up at the next stand-up meeting as a description of the impediments that stand in their way."

- 12.** If you are leading an Agile team and spend most your time focusing on inspiring and collaborating with your team, what kind of leadership are you practicing?

  - A.** Effective leadership
  - B.** Leadership by management
  - C.** Agile leadership
  - D.** Adaptive leadership
- 13.** The team space is key in Agile projects. What is the one thing that is recommended above all others for Agile teams?

  - A.** Scrum boards
  - B.** Colocation
  - C.** Caves and common rooms
  - D.** Information radiators
- 14.** On a colocated team, what is one of the major benefits of everyone sitting together in the same work space?

  - A.** The Scrum Master can find everyone.
  - B.** Daily stand-up meetings are easier to organize.
  - C.** Osmotic communication is enhanced.
  - D.** It builds relationships and trust.
- 15.** Leadership tasks are designed to help your team be most successful and to remove road-blocks preventing the team's success. Which of the following best describes this mindset?

  - A.** Motivate, compensate, and encourage
  - B.** Colocation and osmotic communication
  - C.** Information radiators
  - D.** Daily stand-up meetings
- 16.** What percentage of time should an Agile project manager spend communicating daily?

  - A.** 85 percent
  - B.** 95 percent
  - C.** 90 percent
  - D.** 65 percent
- 17.** Lean was originally designed for which of the following?

  - A.** Manufacturing
  - B.** Software development
  - C.** Waterfall project management
  - D.** Visual project management

- 18.** Adaptive software development replaces \_\_\_\_\_ with a repeating series of *speculate, collaborate, and learn* cycles:
- A. Lean
  - B. FDD
  - C. Waterfall
  - D. Kanban
- 19.** One of your key stakeholders comes to you after a meeting and says, “I don’t see you doing a lot of normal paperwork associated with project management. Instead, I see you talking to your team a lot. Why aren’t you doing your management duties?” How would you respond to this statement?
- A. “In Agile project management, paperwork is a waste of time. My team needs me around in case they have questions.”
  - B. “In Agile project management, I do paperwork at the last responsible moment. Until then, I do management activities like hold stand-up meetings.”
  - C. “In Agile project management, we practice servant leadership. I don’t do any amount of management tasks, but I serve my team as they need me to.”
  - D. “In Agile project management, my role is that of a servant leader. I do an appropriate amount of documentation, but I serve mostly as a coach and leader for my self-directed team.”
- 20.** A key stakeholder has asked for information on the team’s progress through the iteration. What would be the best way to present information about team progress?
- A. Earned value report
  - B. Kanban board
  - C. Detailed notes on stand-up meetings
  - D. A Gantt chart
- 21.** What would be the reasoning behind having an Iteration Zero?
- A. To prove the process will work
  - B. To determine a process that works
  - C. To prove that the product should be built
  - D. To prove that the product will be built correctly

# Review Questions

You can find the answers to the review questions in Appendix B.

1. You have colocated your team, and during the day the team discusses the things they have learned, what they are working on, and various solutions to issues they confront. Even though not everyone contributes to every conversation, they are picking up the information. This information can be internalized or thrown away depending on the individual's need for that information. This is known as which one of the following?
  - A. Tribal knowledge
  - B. Osmotic communication
  - C. Tacit knowledge
  - D. Team knowledge
2. Which of the following items can your team use to help visually show what a viable product or service might look like in a type of low-fidelity prototype?
  - A. A definition of done
  - B. Approval from the product owner to create user stories
  - C. A well-planned strategy to accomplish project goals
  - D. A wireframe with a breakdown of the product needs
3. Your organization is working to determine a project to charter officially, and it is looking at various financial information for project selection. Which technique contains the most information necessary to make a final decision?
  - A. Project charter
  - B. Internal rate of return (IRR)
  - C. Net present value (NPV)
  - D. Payback period
4. During a user story workshop, your customer says, “As a customer, I want a web page so that I can do business.” Is this considered an effective user story?
  - A. No, because it isn’t specific and therefore not testable.
  - B. No, because it doesn’t follow the structure of a user story.
  - C. Yes, because it follows the structure of a user story.
  - D. Yes, because you will work through the details later.
5. During a user story workshop, you ask your customer to explain to you the result they are looking for in 140 characters or less. Which of the following are you requesting?
  - A. Wireframe
  - B. User story
  - C. Elevator statement
  - D. Tweet

6. Kelly and Jim are working together on an architectural spike to help determine what process they will use. They have come to you as their Agile manager and expressed some frustration with the process. If you are practicing active listening, what would you be thinking as they expressed themselves?
  - A. “Kelly and Jim are upset. I need to help them find a solution.”
  - B. “I’ll need to jump in and see if I can help them fix this.”
  - C. “Kelly and Jim are upset, and they need my help.”
  - D. “Kelly and Jim are really upset. I’d better get other team members involved to get all of the information.”
7. How can you tell when you have a user story that isn’t going to be effective?
  - A. It can be tested.
  - B. It is large enough to explain the work.
  - C. You can negotiate items in it.
  - D. It stands alone as an independent item.
8. You are a business analyst working to put together a business case utilizing project selection techniques. Project A has a net present value of \$555,926 and Project B has a net present value of \$787,454. Based on this information alone, which would you choose as the project to charter?
  - A. Project A because the NPV is less than Project B.
  - B. No decision can be made accurately until ROI is determined.
  - C. Project B because the NPV is higher than project A.
  - D. No decision can be made until the payback period and internal rate of return are determined.
9. You are working with your customer and sketching out what their website will be like. This is an example of which one of the following?
  - A. Wireframe
  - B. User story
  - C. Persona
  - D. Tweet
10. You are working with a customer who is used to Waterfall frameworks and formal project charters. They ask you to explain the difference between a Waterfall project charter and an Agile project charter. How do you explain it to them?
  - A. “Waterfall project charters are mandatory, and Agile charters are not.”
  - B. “Agile project charters are more flexible and describe who and what.”
  - C. “Waterfall project charters don’t get to the definition of done like Agile charters.”
  - D. “Agile project charters aren’t formal, and Waterfall project charters are formal.”

- 11.** You are working with your team to develop a persona, and one of your team members says that they were in the same position as your customer once and can understand where they are coming from. Your team member is expressing which of the following?
- A.** Emotional intelligence
  - B.** Empathy
  - C.** Active listening
  - D.** Effective user story development
- 12.** An effective user story follows which of the following formats?
- A.** As a(n) \_\_\_\_\_ I want \_\_\_\_\_ because \_\_\_\_\_.
  - B.** As a(n) \_\_\_\_\_ I need \_\_\_\_\_ in order to \_\_\_\_\_.
  - C.** As \_\_\_\_\_ I need \_\_\_\_\_ so that I can \_\_\_\_\_.
  - D.** As a user \_\_\_\_\_ I need \_\_\_\_\_ so that I have \_\_\_\_\_.
- 13.** A user story workshop is important because of which one of the following?
- A.** It allows for collaboration and determination of scope while engaging your stakeholders.
  - B.** It is important since it is a large part of Agile frameworks.
  - C.** It allows all of the user stories for the project to be created.
  - D.** It isn't important, as it is up to the team to decide whether or not they use them.
- 14.** Payback period is a less effective way to determine ROI on a project because of which of the following reasons?
- A.** Payback period only shows the period of time to recoup the money spent, not the net present value.
  - B.** Payback period isn't an effective way to determine ROI if it is used with internal rate of return only.
  - C.** Payback period is only ineffective when combined with net present value.
  - D.** ROI isn't determined using payback period.
- 15.** Your team is working to engage with your stakeholders, who are very interested in what your team thinks the eventual result will be. Your team works with the customer and draws out the web interface they are thinking of developing based on what the customer is describing. Which of the following wouldn't be involved in this process?
- A.** Wireframe
  - B.** User story workshop
  - C.** Elevator statements
  - D.** Project charter creation

- 16.** You are responding to a key stakeholder via email, and you decide that you will follow their lead and write with bullet points and sign your email in the same way as they do. This is an example of which kind of communication best practice?
- A.** Effective email writing
  - B.** Emotional intelligence
  - C.** Mirroring
  - D.** Feedback
- 17.** If you received a project charter and it fully described the scope of work, milestones, risks, and key stakeholders, as well as budgetary estimates, would that be a good reflection of an Agile project charter?
- A.** No. This is closer to that of a Waterfall project charter where the scope of work is well known.
  - B.** Yes, because the more information you have in the beginning, the better off the project will be in the end.
  - C.** No, because an Agile project charter isn't necessary.
  - D.** Yes, because it helps with the user story workshop.
- 18.** You are in a meeting with a new customer to agree on requirements and basic starting points of the project. Your customer is going on and on about a long list of things that they want done, but they aren't really giving you a clear explanation of the project's end result. How can you encourage your customer to provide a clear, high-level explanation of the project's result?
- A.** Have a kick-off meeting.
  - B.** Build a project charter.
  - C.** Have them create a tweet.
  - D.** Have a detailed planning meeting.
- 19.** Which of the following items does your team need in order to produce a working, viable product or service?
- A.** A definition of done
  - B.** Approval from the product owner to create user stories
  - C.** A well-planned strategy to accomplish project goals
  - D.** A wireframe with a breakdown of the product needs
- 20.** A persona is based on which one of the following?
- A.** Someone who had similar goals on another project
  - B.** The organization and its culture
  - C.** A real person or a descriptive placeholder for the customer
  - D.** A fake placeholder of a future user and what they may or may not want

# Review Questions

You can find the answers to the review questions in Appendix B.

- 1.** Your team disagrees on the direction a requirement should take, and it is convinced that the customer hasn't explained it correctly. As a servant leader, what can you identify as the reason for the misunderstanding?
  - A.** Not enough information was gathered from the customer.
  - B.** The gulf of misunderstanding has occurred, and more information is needed to determine the correct direction.
  - C.** You should practice good conflict resolution skills.
  - D.** Team knowledge is limited because they are in the storming stage.
- 2.** Bill and Ally are having a disagreement in the break room about something they saw on the news the night before. You are walking by, and you overhear the disagreement. As a servant leader, what is the best conflict resolution technique to utilize in this situation?
  - A.** Help them reach a compromise.
  - B.** Tell them to stop the disagreement, as it is inappropriate at work.
  - C.** Try to get them to compromise.
  - D.** Avoid getting involved as it isn't relevant to project work.
- 3.** Your team has been working together for several iterations now, and they seem to be working well together. They are making decisions as a team and determining what work they should do and when. This is an example of which of the following?
  - A.** A storming team
  - B.** An Agile team
  - C.** A self-directed team
  - D.** An adjourning team
- 4.** As an Agile team member, you are working with the product owner and the customer on several of the user stories and requirements the customer is requesting. You witness the product owner suggesting that the customer choose one requirement over another because it will function better with their result, and the customer agrees that it is win-win for everyone. What did the product owner do effectively?
  - A.** Negotiation
  - B.** Requirement gathering
  - C.** User story development
  - D.** Servant leadership

5. Task 5 of the exam content outline for stakeholder engagement states that you will need to establish collaborative behaviors among the members of the organization by fostering group decision making and conflict resolution in order to improve decision quality and reduce the time required to make decisions. If there is a conflict and you have an option, which of the following is the best conflict resolution strategy?
  - A. Compromise
  - B. Smoothing
  - C. Collaboration
  - D. Avoiding
6. Your team has reached the performing phase. What types of management and leadership do they need?
  - A. A lot of feedback and interactions
  - B. Feedback, coaching, and help only when they ask for it
  - C. Help with conflict resolution and expectation settings
  - D. Helping getting to know each other and building trust
7. The team space is key in Agile projects. What is the one thing that is recommended above all others for Agile teams?
  - A. Scrum boards
  - B. Colocation
  - C. Caves and common rooms
  - D. Information radiators
8. On a colocated team, what is one of the major benefits of everyone sitting together in the same work space?
  - A. The Scrum Master can find everyone.
  - B. Daily stand-up meetings are easier to organize.
  - C. It enables improved communication.
  - D. It builds relationships and trust.
9. Your newly formed team is experiencing some conflict in the way they estimate time. Several team members have withdrawn from the conversations, while others are still arguing about the best ways to do things. This is an example of what team stage?
  - A. Forming
  - B. Norming
  - C. Storming
  - D. Adjourning

- 10.** As an Agile project manager, you explain to your team that, as their coach, you are there to provide for the team's needs and remove any roadblocks to their progress. This is also described as which one of the following?
- A.** Project management
  - B.** Agile leadership
  - C.** Management and leadership
  - D.** Adaptive leadership
- 11.** Misunderstandings of value, product, and customer needs can best be described as which one of the following?
- A.** The gulf of evaluation
  - B.** The gulf of Agile
  - C.** The gulf of misunderstanding
  - D.** The gulf value stream
- 12.** For an Agile project manager, active listening is an important aspect to practicing adaptive leadership. If a stakeholder is talking to you about an issue, what should be your primary focus?
- A.** Solving their problem
  - B.** Assessing their facial features
  - C.** Thinking of what you will say next
  - D.** Listening to what the person is saying and assessing the information
- 13.** Your stakeholders are engaged in a conversation about what direction to go in with an aspect of the software that is being built. The team is divided on how to proceed. The conflict is more of a collective disagreement than an outright conflict. What should you do as the Agile project manager?
- A.** Engage in the conversation, and help the team solve the issue.
  - B.** Call a meeting to have a formal discussion about the issue.
  - C.** Discuss conflict resolution techniques at the next retrospective.
  - D.** Do nothing.
- 14.** One of your stakeholders is asking about your PMI-ACP certification and wonders what code of ethics you need to abide by as a certified professional. You explain that there are two categories of conduct you abide by. Which of the following describes these categories?
- A.** Legal and aspirational
  - B.** Motivational and legal
  - C.** Mandatory and motivational
  - D.** Mandatory and aspirational

- 15.** During a heated exchange over what the definition of done is to the stakeholders, you have determined that there isn't any way anyone is going to be able to collaborate on solutions. Which of the following conflict resolution strategies would work best in this situation?
- A. Compromise
  - B. Forcing
  - C. Withdrawal
  - D. Smoothing
- 16.** In Maslow's hierarchy of needs, what term expresses a person who has everything and determines that they will give back for the greater good?
- A. Social
  - B. Physiological
  - C. Safety
  - D. Self-actualization
- 17.** You and your development team are working with the product owner on user stories in the backlog. Your team is asking questions about what stories will be done next and what they think that they can accomplish. The product owner asks the team to consider adding two more stories to the sprint for the customer, and the team explains that they are unable to do any additional stories. The product owner explains why it is important, and the team agrees to take on one more story but not two. What does this exchange represent?
- A. A poorly run negotiation
  - B. A balanced win-win negotiation
  - C. The product owner overstepping their position
  - D. Good communication
- 18.** Engaging with stakeholders involves having the emotional intelligence to understand their concerns and to work to determine what they value. In order to be effective in this role, which of the following skills are necessary?
- A. Interpersonal skills
  - B. Adaptive leadership
  - C. Creating an elevator statement
  - D. Having a detailed planning meeting
- 19.** One of your stakeholders is new to Agile and is asking that the team take on more user stories per iteration to get things done faster. As an adaptive servant leader, what is the best thing to do?
- A. Listen to what they are saying, and then explain to them that they should go talk to the product owner.
  - B. Tell them no.
  - C. Listen to their concerns, but explain the concept of a self-directed team.
  - D. Negotiate with them to protect the team from interruptions.

- 20.** You are a product owner, and you are working to sort various user stories by value during the current sprint. A key stakeholder comes to you in the middle of the current sprint and asks you to add a feature that was deemed unnecessary by the customer. What is the best thing to do?
- A.** Call a team meeting and explain that you are adding another feature to the increment in the middle of the sprint.
  - B.** Tell the Agile project manager, and let them deliver the message to the team.
  - C.** Explain to the stakeholder that the feature will be put at the back of the backlog for a potential future revisit, but right now the customer doesn't see it as valuable.
  - D.** Tell the key stakeholder that the best thing to do is bring it up at the next sprint planning meeting and discuss it then.

# Review Questions

You can find the answers to the review questions in Appendix B.

1. Which of the following best describes a team's velocity from the first iteration on?

  - A. Velocity is based on the decomposition of activities and their sequence.
  - B. Velocity varies in the first iterations, increases, and eventually plateaus.
  - C. Velocity is determined by the product owner.
  - D. Velocity is based on approved deliverables, milestones, scope, and resource management plans.
  
2. Your team has determined that there are 500 points of functionality left in the backlog to complete. The first four iterations' velocity has been tracked at

22 points  
30 points  
39 points  
45 points

Approximately, how many more iterations will it take to complete the project based on velocity?

  - A. 15.1
  - B. 25.7
  - C. 14.7
  - D. 13.6
  
3. Utilizing decision delays in an Agile environment allows teams to do all of the following, except \_\_\_\_\_.

  - A. Mitigate risks
  - B. Adapt to changes
  - C. Implement based on the most up-to-date information
  - D. Have “fine-grained requirements” until they can become “course-grained”
  
4. The concept of ideal time is \_\_\_\_\_.

  - A. How long something will take with distractions
  - B. What you put on your schedule for approval
  - C. How long something will take without any distractions
  - D. The total duration plus risk events

5. Which of the following represents a user story?
  - A. As an end user, I want to be able to shop online.
  - B. As a team member, I want to be able to see my progress.
  - C. As an end user, I want to be able to review status reports daily so that I can track project performance.
  - D. As a customer, I need to be able to use the software you create.
6. As a product owner, it is important to determine the priority of user stories that will be performed next. This is an example of which one of the following?
  - A. Backlog sorting
  - B. Retrospective
  - C. Sprint review
  - D. Backlog grooming
7. Decomposition of requirements could best be described by which of the following?
  - A. Epic, task, user story
  - B. Epic, feature, user story, sequenced activities
  - C. Theme, epic, feature, user story
  - D. User story, feature, tasks
8. It is important for the Agile team to be able to see the “Big Picture” in a visual way. Which of the following would be the best tool for prioritization?
  - A. Epic
  - B. User story
  - C. Wireframe
  - D. Story map
9. Which of the following items does your team need in order to produce a working, viable product or service?
  - A. A definition of done
  - B. Approval from the product owner to create user stories
  - C. A well-planned strategy to accomplish project goals
  - D. A wireframe with a breakdown of the product needs
10. A persona is based on which one of the following?
  - A. Someone who had similar goals on another project
  - B. The organization and its culture
  - C. A real person or as a descriptive placeholder for the customer
  - D. A fake placeholder of a future user and what they may or may not want

11. As an Agile project manager, you are tracking the team's work capacity and getting a sense of how much work is going to be done in the current iteration. What are you tracking?
  - A. Features completed
  - B. Scope of work completed
  - C. Velocity
  - D. User stories completed
12. Your team has been averaging 50 points' worth of work per iteration and has determined that there are 201 points left to complete. In how many iterations will the team complete the work?
  - A. Four
  - B. Two
  - C. Six
  - D. Five
13. Your team has stabilized their velocity throughout five iterations and commits to 15 story points in the current iteration. Due to a risk event during the iteration, the team only completed 14 story points. What happens to the leftover point?
  - A. The team will work overtime to complete the work to which they have committed.
  - B. The team will adjust their sprint plan from 15 to 14.
  - C. The team will do 14 story points and put the remaining work or 1 point into the backlog for another iteration.
  - D. The team will do nothing; points are only estimates.
14. Agile teams work with timeboxes. A customer asks, "What is the point of timeboxes in an iteration?" What do you say as an Agile project manager?
  - A. It's a fixed time period applied to activities.
  - B. It's a rough estimate of velocity.
  - C. It's something we use instead of Gantt charts.
  - D. It's a way of tracking performance.
15. Your team is working with the customer on a brand-new project. The customer has established the primary scope of the work, but your team doesn't quite have a process intact. You suggest to the team that they run an iteration that allows for process discovery but doesn't yet deliver releasable value to the customer. This is otherwise known as which one of the following?
  - A. Iteration one
  - B. Initiation
  - C. Iteration Zero
  - D. Iteration discovery

16. Your team is estimating that it will take two weeks for the next sprint if there aren't any interruptions to their work flow. Which of the following describes this estimate?
  - A. Likely time estimate
  - B. Ideal time estimate
  - C. Bottom up estimate
  - D. Expert judgment estimate
17. Whose position is it to determine the priority of user stories that will be performed next based on value?
  - A. Scrum Master
  - B. Development team
  - C. Project sponsor
  - D. Product owner
18. You are working with a visible master list of work, and you are constantly reviewing and updating it with requirements that will be reorganized and reprioritized repeatedly. This is an example of which of the following?
  - A. You are the development team planning the next iteration.
  - B. You are a product owner and are working on grooming the backlog.
  - C. You are the Scrum Master working with the customer on priority.
  - D. You are the customer working with the product owner to keep your priorities up-to-date on the Kanban board.
19. You and your teammates are debating how long something should take to accomplish. Which of the following ways is the best way to estimate project work?
  - A. Story point estimates for user stories based on lessons learned
  - B. Using scheduling software approved by management
  - C. Parametric estimates
  - D. Using storyboards and pull systems
20. Your team is estimating work using planning poker. All team members agree that the work size is a 5, except for Bob. Bob thinks it should be a 10 in size. What could the reason be for this discrepancy?
  - A. It could be due to product uncertainty or technical uncertainty.
  - B. Bob is being difficult so that he can add padding to his work.
  - C. The team should have used T-shirt sizing to get a better result.
  - D. The team should talk to the Scrum Master for leadership in the matter.

21. How many sprints will it take to complete the work providing the team's current velocity is 10 points a sprint?

Stories	Points
Priority A	3 points
Priority B	6 points
Priority C	4 points
Priority D	10 points
Priority E	3 points

- A. Five
- B. Four
- C. Three
- D. Six

## Review Questions

You can find the answers in Appendix B.

1. Which of the following describes a generalized specialist?
  - A. They are specialists in their field, but they have additional skill sets that can be used on a project.
  - B. They have limited experience in Agile and may need coaching to be more successful.
  - C. They have general knowledge about Waterfall projects but not Agile.
  - D. They have reached skill mastery.
2. Your team has reached the performing phase. What types of management and leadership do they need?
  - A. A lot of feedback and interactions
  - B. Feedback, coaching, or help only when they ask for it
  - C. Help with conflict resolution and expectation settings
  - D. Helping the team get to know each other and build trust
3. The concept of Shu Ha Ri is one of \_\_\_\_\_.
  - A. Obey, detach, mastery
  - B. Learning, communicating, mastery
  - C. Novice and then proficient
  - D. Follows plans and process
4. The team space is key in Agile projects. What is the one thing that is recommended above all others for Agile teams?
  - A. Scrum boards
  - B. Colocation
  - C. Caves and common rooms
  - D. Information radiators
5. On a colocated team, what is one of the major benefits of everyone sitting together in the same work space?
  - A. The Scrum Master can find everyone.
  - B. Daily stand-up meetings are easier to organize.
  - C. Osmotic communication can be achieved.
  - D. Colocation helps with understanding of velocity charts.

6. Your team has reached the performing phase. What types of management and leadership do they need?
  - A. A lot of feedback and training
  - B. Coaching as needed during retrospectives
  - C. Help with improving velocity
  - D. They don't need any help.
7. The team space is key in Agile projects. What can be provided to the team in case they need privacy and quiet to work?
  - A. Time off
  - B. The ability to work from home
  - C. Caves and common rooms
  - D. Nothing. The team should always be colocated.
8. All the following are guidelines for one-on-one coaching except \_\_\_\_\_.
  - A. Stay a half step ahead
  - B. Guarantee support
  - C. Partner with managers
  - D. Create positive regard
9. Which of the following best describes a team's velocity from the first iteration on?
  - A. It's based on the decomposition of activities and their sequence.
  - B. Velocity varies in the first iterations, increases, and eventually plateaus.
  - C. Velocity is determined by the product owner.
  - D. Velocity is based on approved deliverables, milestones, scope, and resource management plans.
10. What is the main difference between a burn down and burn up chart?
  - A. A burn down chart tracks the time and effort left, and a burn up chart tracks completed work and changes.
  - B. A burn up chart tracks the time and effort left, and a burn down chart tracks completed work and changes.
  - C. A burn down chart tracks risk averted, and a burn up chart tracks risks left to manage.
  - D. A burn down chart tracks the burn rate of project costs, and a burn up chart tracks scope of work left to complete.

- 11.** Your team has determined that there are 500 points of functionality left in the backlog to complete. The first 4 iteration's velocity has been tracked as follows:

20 points  
35 points  
55 points  
50 points

Approximately how many more iterations will it take to complete the project based on velocity?

- A.** 12.5
  - B.** 10
  - C.** 14.7
  - D.** 16
- 12.** A key stakeholder has asked for information on the team's progression through the iteration. What would be the best way to present information about the team's progress?
- A.** Earned value report
  - B.** Burn down chart
  - C.** Detailed notes on stand-up meetings
  - D.** A Gantt chart
- 13.** Your key stakeholder is asking for comprehensive Gantt charts to determine how the project is progressing. What will you tell them?
- A.** "Sure, I'll put one together for you."
  - B.** "In Agile projects, we don't use Gantt charts."
  - C.** "I'll ask the team to put it together."
  - D.** "Agile projects use low-tech, high-touch tools to radiate performance rather than Gantt charts."
- 14.** Your team is colocated and has a common room to work and communicate. Bill is getting distracted while working on a specific line of code, and he has to have a private call with his doctor in a half hour. Bill gets up to go into another room to work privately and take the call with his doctor. Is this an acceptable practice for Agile teams?
- A.** Yes. Bill went to a "cave," and even though teams are colocated, it doesn't mean that they can't work privately as needed for a short period of time or to take private phone calls.
  - B.** No. Bill needs to be coached in osmotic communication since his team could have found his code solution valuable.
  - C.** Yes. Bill is perfectly within his rights to work separately from his team whenever he wants.
  - D.** No. Bill is antisocial and may not be the best fit for your Agile team.

**15.** You are working on a large project, and many of your team members are going to be virtually distributed. What is the best way to help your virtual team be successful for your upcoming project?

- A.** Distributed teams are not recommended on Agile projects.
- B.** Set up ground rules.
- C.** Set up a live stream of video feeds to keep everyone virtually colocated.
- D.** Colocate the team for the planning meetings and two iterations if possible.

**16.** Of the following, what is the best way that you can help your team stay connected when they are virtual?

- A.** Daily stand-ups
- B.** Mission statements, goals, and ground rules
- C.** Kickoff meetings
- D.** Video calls

**17.** What is the following statement defining?

Information flows into the background so that the team members will pick up relevant information that they can choose to learn more about or dismiss.

- A.** Nonverbal communication
- B.** Active listening
- C.** Osmotic communication
- D.** Stand-up meetings

**18.** Your newly formed Agile team makes a mistake during the first iteration that results in 500 lines of code needing to be redone. As their coach, what do you think is important for the team to know?

- A.** Nothing. Teams are self-motivated and don't need a manager.
- B.** That Agile teams are most effective at problem solving when they feel that they have permission to make mistakes.
- C.** You need to create a clear action plan for the team so that same mistake never happens again.
- D.** You need to determine whether or not your new team understands your chosen Agile framework, or if your team would be better suited using a specific project plan.

**19.** A key stakeholder is asking what is the estimated time for the entire project to be completed. Which of the following will you show them to help answer that question?

- A.** Kanban board
- B.** Gantt chart
- C.** Burn down chart
- D.** Process flow diagram

- 20.** An Agile team shows its progress visually and has created a specific chart/graph to show work that has been completed as well as make scope changes visible across iterations. What are they creating?
- A.** WIP
  - B.** Cumulative flow diagrams
  - C.** Kanban board
  - D.** Burn up charts

## Review Questions

You can find the answers to the review questions in Appendix B.

1. Who determines the process to prioritize value in an Agile project?
  - A. The customer
  - B. The Scrum Master
  - C. The product owner
  - D. The entire team
2. Misunderstandings of value, product, and customer needs can best be described as which one of the following?
  - A. The gulf of constraints
  - B. The gulf of Agile
  - C. The gulf of misunderstanding
  - D. The gulf value stream
3. You are coaching your Agile team in different ways to prioritize value. Which one of the following would not be a way to prioritize?
  - A. Dot voting
  - B. Value stream analysis
  - C. MoSCoW
  - D. Monopoly Money
4. During a prioritization exercise with your Agile team, you give each of the stakeholders 100 points. How will they determine priority with those points?
  - A. They will put 100 points on the main feature they want.
  - B. They will break the 100 points into 25-point increments for their top four values.
  - C. They will put the points they want next to the options that they like, and they may place any number of points on any number of the options.
  - D. The 100-point method isn't a prioritization method.
5. Your customer is describing items they want on the next release of their corporate software program. During discussions of valuable features, they ask if the software can include a new and innovative feature they read their competition may be creating. Your team performs Kano Analysis and determines this feature request falls under the category of:
  - A. Satisfier
  - B. Exciters
  - C. Dissatisfiers
  - D. Indifferent

6. Agile contracts differ from Waterfall projects in which of the following ways?
  - A. They are longer term to accommodate iterations.
  - B. They can use a fix and switch contract to allow for changes in scope.
  - C. They can be adapted at any time.
  - D. They can be updated for scope changes that have been approved through change control systems.
7. Your sponsor has asked you for a review of the scope, time, and cost performance so they can present the information to the shareholders. You have determined that the cost variance is  $-\$3,000$  and the schedule variance is  $\$1,000$ . How is this project progressing?
  - A. The project is over budget and behind schedule.
  - B. The project is under budget and ahead of schedule.
  - C. The project is over budget and ahead of schedule.
  - D. There isn't enough information to determine project progress.
8. Your organization is using a mix of Waterfall and Agile techniques on its project and is very focused on reaching the return on investment level that it has determined the project should meet. Your sponsor is asking for the cost performance index information. What technique can you use to provide that information?
  - A. Earned value technique
  - B. Benefit cost measurements
  - C. Monopoly Money
  - D. Return on investment calculations
9. The planned value on your current project at this point in the schedule is  $\$10,000$ , and the earned value is  $\$9,600$ . What is the schedule variance?
  - A.  $\$400.00$
  - B. 0.96
  - C.  $-(\$400.00)$
  - D. 1.04
10. Your customer has been adamant about a certain feature being a part of the finished increment. You have explained time and again that the feature they are looking for will interfere with the rest of the result and cause it not to work as well. What could be the reason for this confusion?
  - A. The gulf of misunderstanding has occurred.
  - B. Kano analysis wasn't performed.
  - C. The customer is confusing excitors with satisfiers.
  - D. The team isn't understanding the requirements.

11. You are being tasked by your organization to create a statement of work that will be utilized in the procurement process. The legal department explains to you that they want to make sure that all terms and conditions are negotiated and agreed to up front. Then, when scope needs to be changed, there is more flexibility in the process. To what type of agreement is the legal department referring?
  - A. Fixed-price contract
  - B. Cost-reimbursable contract
  - C. Time and materials contract
  - D. Master service level agreement
12. Bill is the sponsor on your project and is especially nervous about the budget and meeting the expected ROI. He asks you on a regular basis what things are costing and if you are spending money in the right areas. You suggest to Bill that he come to the team area and explain where he would spend the money if it were his decision and he had the entire project budget to work with. What are you suggesting Bill do?
  - A. Use Monopoly Money to create his budget.
  - B. Use Monopoly Money to show what he values and where he would spend the money.
  - C. He is going to dot vote with the team to determine priority.
  - D. Bill will be performing a Kano analysis on the budget.
13. Your customer is working very closely with your team on prioritization of value for their product. There are certain items that must be in the final product no matter what and others that won't be included unless different information is presented at a later date. Which of the following prioritization techniques does it look like they used?
  - A. Dot voting
  - B. Kano analysis
  - C. MoSCoW
  - D. Monopoly Money
14. You are delivering a performance report to your sponsor on the project and have put together an earned value report. Your cost performance index is 1.25. What does that information tell your sponsor?
  - A. The project is over budget.
  - B. The project is under budget.
  - C. The project is getting one dollar's worth of work done and spending \$1.25 on that work.
  - D. The project is getting 1.25 dollars' worth of work done and spending one dollar on that work.

- 15.** Your organization has entered into a contract that can best be described as good for the organization, and the budget requirements are known or stable. What kind of contract did your organization enter into?
- A.** The fix and switch
  - B.** A service level agreement
  - C.** Fixed price
  - D.** Time and materials
- 16.** Your project sponsor is asking for performance information on how your team is working in a new Agile environment, and you explain to them that your team is performing well together, that they have a good grasp on estimation techniques, and that their velocity has stabilized. These are all examples of what type of performance measurement?
- A.** Key performance indicators
  - B.** Performance reporting
  - C.** Earned value reports
  - D.** Burn down charts
- 17.** Brenda is sitting down with you for some one-on-one coaching because she is having trouble setting goals that she can meet. You are working through the goals that she has set and notice that they seem rather vague, and it's hard to determine what the end result should be. What would you recommend to Brenda?
- A.** That she makes her goals more specific
  - B.** That she should be working with her team on goals and goal planning
  - C.** That Brenda needs some training on goal setting
  - D.** That she needs to work a little harder at achieving her goals
- 18.** The mnemonic acronym SMART applies to which of the following project areas?
- A.** Schedule improvement
  - B.** Cost improvement
  - C.** Goal setting improvement
  - D.** Team performance improvement
- 19.** Jamal is the Agile project manager in charge of a new development project to create an app that can track how many times employees go to websites that are non-work related. Jamal is reporting to the sponsor that they have gone a bit over budget in the last iteration. Which of the following figures would show an over budget project?
- A.** 1.6
  - B.** 1.1
  - C.** 1.0
  - D.** .80

- 20.** Carol is writing down a goal she wants to meet. She starts with a very specific road map of what the result should be. She knows that she can get it done and has tracking mechanisms documented. Carol knows the goal is realistic as well. Which of the following is missing from her goal setting approach?
- A. Specific
  - B. Measurable
  - C. Attainable
  - D. Time-based
- 21.** If you were going to calculate the schedule performance index for your sponsor, which of the following variables would you need to do that?
- A. Earned value and actual cost
  - B. Planned value and earned value
  - C. Planned value and actual cost
  - D. None of the above
- 22.** According to Kano analysis, what do excitors typically become once substantial time has passed?
- A. They become demotivators.
  - B. They become satisfiers.
  - C. They become dissatisfiers.
  - D. They remain excitors.
- 23.** When you're reviewing constraints on an Agile project, which of the following are considered not as flexible as others?
- A. Scope and quality
  - B. Time and quality
  - C. Cost and scope
  - D. Cost and time
- 24.** When determining return on investment (ROI) at the beginning of a project, most organizations use which of the following techniques to help build a business case?
- A. Earned value
  - B. Net present value
  - C. Monopoly Money
  - D. Cost performance index
- 25.** Your team is holding a facilitated event in which the entire team will be given red and green stickers. The team will place red stickers on features that they don't want or like and green stickers on what they do want and like. This type of team event for decision making could be called which of the following?
- A. A dotmocracy
  - B. A key performance indicator
  - C. A decision-making meeting
  - D. Backlog refinement

# Review Questions

You can find the answers to the review questions in Appendix B.

1. Which of the following best describes progressive elaboration?
  - A. It allows teams to pull new information into plans when it becomes available.
  - B. It engages stakeholders in project decisions.
  - C. It determines expectations.
  - D. It allows documentation of all stakeholder needs across the project.
2. Agile teams incorporate rolling wave planning to do which one of the following?
  - A. Schedule activities.
  - B. Incorporate high-level plans with the knowledge that they will be updated.
  - C. Assign tasks.
  - D. Complete the personas for the project.
3. Utilizing decision delays in an Agile environment allows teams to do all of the following except \_\_\_\_\_.
  - A. Mitigate risks
  - B. Adapt to changes
  - C. Implement based on the most up-to-date information
  - D. Have “fine-grained requirements” until they can become “course-grained”
4. A risk has been identified in the first iteration. Its expected monetary value is projected at \$45,000, and the value of the first feature is \$23,000. If the risk can’t be mitigated effectively and for less money, what could occur on the project?
  - A. A risk meeting to determine what to do next.
  - B. Update the risk-adjusted backlog to handle the risk before building the feature.
  - C. The project may reach fast failure.
  - D. Determine solutions in the sprint planning meeting.
5. A key stakeholder is asking what the overall risk situation is for the iteration. Which of the following will you show them to help answer that question?
  - A. Risk burn down chart
  - B. Burn up chart
  - C. Burn down chart
  - D. Velocity tracking charts

6. Jim is new to your Agile team, and he is interested in how your team will be tracking scope of work completed and risk on the project. Which of the following type of chart or graph will you explain that you are using for both?
  - A. Velocity charts
  - B. Cumulative-flow diagrams
  - C. Kanban board
  - D. Burn down charts
7. A risk event has been identified that will affect your current iteration. To investigate and determine ways to mitigate the risk, what will your team do?
  - A. Perform expected monetary value assessments.
  - B. Discuss the risk in their stand-up meeting and try to find a solution.
  - C. Discuss it with the product owner and see if there is a way to remove the feature containing the risk.
  - D. Perform a risk-based spike.
8. During your daily stand-up meeting, Karen has pointed out a new impediment that is in her way. She is concerned that it may evolve into a risk event. After the meeting, Karen works with Peter to develop a story to reduce the impact of the risk event and wants to perform a risk-based spike. Which of the following represents the correct way to do the spike?
  - A. Identify problems and describe what has been accomplished since the last meeting in the next day's stand-up meeting.
  - B. Describe the risk and the need for a spike with the product owner who will approve it, and Karen and Peter will allot time to work on it.
  - C. Coordinate discussions on problems, and work on solutions with the entire team.
  - D. Identify additional risks that can be managed in the same spike.
9. During a meeting with your sponsor, they bring up the fact that on your new Agile project your reporting has dropped off to the point where they barely have any information compared to Waterfall projects. How will you explain this to your sponsor?
  - A. You will spend time doing the reports since they asked for them. Your team is self-directed and doesn't need you for a while.
  - B. Explain that until the product owner prioritizes, you don't have the information to give them.
  - C. Explain progressive elaboration and last responsible moment Agile philosophies to the sponsor.
  - D. Ask your team to detail the work they have done so that you can process a report.
10. Your current project has both value and risks to consider. In what order would the risk compared to value be placed to have a completed risk-adjusted backlog?
  - A. Highest-impact risk first
  - B. Highest-value items first
  - C. A review of both risk and value would be considered, and the one with the highest financial impact would be chosen to be accomplished first.
  - D. A review of both risk and value would be considered, and the one with the lowest financial impact would be chosen to be accomplished first.

- 11.** You are working with your team on a complicated software design. You really aren't sure if it is going to work, and at this point you aren't even sure if you can work it out in time to prove that you've determined the fix. What would be the best thing that you could suggest as their Agile PM?
- A.** Talk to the product owner, and see if you can get better clarification of the scope of work.
  - B.** The project has reached fast failure, and the product owner needs to close the project.
  - C.** Have a meeting with the customer, and attempt to see if there are other features that they can use instead.
  - D.** Perform an architectural spike to determine whether the current approach can work or if another one is needed.
- 12.** Chris identified a new risk early in the first iteration. This is due to the use of the newest technologies and not much is known about how to solve it. What is the best thing for Chris to suggest in order to manage the situation?
- A.** Document the risk in the risk-adjusted backlog, and wait for the product owner to review.
  - B.** Perform a risk-based spike.
  - C.** Update the backlog.
  - D.** Move the risk affected work into the backlog for future iterations.
- 13.** Jamal is writing code that is easy to implement in the short run instead of applying the best overall solution at the time to get the code completed in time. What could be the outcome of this technique?
- A.** Jamal is getting the work done quickly and creatively meeting deadlines.
  - B.** Jamal may be inadvertently creating tech debt that will have to be paid later in the project.
  - C.** Jamal is creating source code that can be worked out using an architectural spike.
  - D.** Jamal is running tests so that they fail.
- 14.** Gail is in the process of restructuring existing computer code without changing its behavior. Peter asks her what she is working on. How will Gail answer that question?
- A.** I'm cleaning up tech debt.
  - B.** I'm trying to build in lead time.
  - C.** I'm refactoring the code.
  - D.** I'm building software.
- 15.** Your team is analyzing risk events and trying to determine what the "price tag" is going to be based on probability and impact. Which of the following techniques will provide that information?
- A.** Expected money value
  - B.** Expected monetary value
  - C.** Expected severity value
  - D.** Expected priority cost

- 16.** Your Agile team is working on the fifth iteration of their project, and the sponsor is reviewing their risk burn down chart. How will the sponsor know if risk is being managed on the project?
- A. As the team mitigates or avoids risk, the chart should trend up.
  - B. As the team mitigates or avoids risk, the chart should trend down.
  - C. As the team mitigates or avoids risk, the chart should have less information.
  - D. As the team mitigates or avoids risk, the chart should be distributed to the sponsor.
- 17.** Which of the following is a brainstorming technique designed to get to the bottom of something and provide a clearer solution to the issue?
- A. Ishikawa diagram
  - B. The 5 whys
  - C. Sailboat
  - D. Triple Nickels
- 18.** As a product owner, you are reviewing the expected monetary value of identified risks and determining how to place the mitigation efforts into the backlog. Which of the following would go at the top of the list in a risk-adjusted backlog?
- A. Feature A: \$15,000
  - B. Risk B: \$5,000
  - C. Feature C: \$11,000
  - D. Risk D: \$16,000
- 19.** Sally is performing expected monetary value analysis on a newly identified risk. She has determined the probability is 30 percent and the impact is \$10,000. What is the expected monetary value?
- A. \$3,000
  - B. \$10,000
  - C. \$300,000
  - D. \$30,000
- 20.** Three new risk events have been identified in your current iteration. Your analysis shows that two of the risk events' expected monetary value are higher than the features on which you are working, and one is not very impactful at all. What should you do if you are the product owner?
- A. Perform a risk-based spike to determine the impact.
  - B. Put the two highly impactful risk events at the top of the risk-adjusted backlog.
  - C. Work with the team on mitigation efforts.
  - D. Place it on the risk burn down chart for tracking purposes.

- 21.** Your team is working together to brainstorm potential risk events on a project, and they are using a technique that allows them to focus on what is going well now versus what isn't going so well now. Which of the following tools are they using?
- A.** The 5 whys
  - B.** Risk burn down charts
  - C.** SWOT
  - D.** Delphi technique
- 22.** At the end of the day on Friday, you are attempting to wrap up your work and head home. Right in the middle of finishing a string of code, your computer crashes without saving all of your work. This is considered to be which one of the following?
- A.** A common cause; it happens.
  - B.** A special cause; it's a surprise.
  - C.** A common cause, it never happens.
  - D.** A special cause; it's just noise in the system.
- 23.** You've just finished working on a long string of code, and as you review it, you realize that you have created the simplest thing that works but not necessarily the best solution. What are you creating for yourself?
- A.** Tech debt
  - B.** Refactoring
  - C.** Risk
  - D.** Scope creep
- 24.** A defect has been identified in the program you have worked on for the past three iterations. You aren't sure when the defect was created, but you know that the influencing factor was that someone else worked on earlier strings of the code while you were gone on vacation, which is a very common practice. What is the reason for the defect?
- A.** Common cause
  - B.** Special cause
  - C.** Risk event
  - D.** Poor implementation of refactoring
- 25.** A risk event has just happened on your project. You work to implement the agreed-upon solution for mitigation and create a whole other risk event. This is known as which one of the following?
- A.** Residual risk
  - B.** Secondary risk
  - C.** Risk avoidance
  - D.** Risk backlog adjustment

## Review Questions

You can find the answers to the review questions in Appendix B.

1. After working through two iterations with your Agile team, you've noticed that velocity is a bit lower than anticipated. During a daily stand-up meeting, one of the impediments that your team identifies is that the process seems bulky and more time-consuming than it needs to be. What would you suggest as a good way for the team to analyze the team processes for areas of improvement?
  - A. Wireframe
  - B. Burn down chart
  - C. Value stream map
  - D. Replanning session
2. As an Agile project management expert, you know that the difference between lead time and cycle time is which one of the following?
  - A. Lead time is the total amount of time that the process takes, and cycle time is the total amount of time that an iteration takes.
  - B. Lead time is the total amount of time that the iteration takes, and cycle time is the total amount of time that the process takes.
  - C. Lead time is the total amount of time that you get when fast-tracking your schedule, and cycle time is the total amount of time that an iteration takes.
  - D. Lead time is the total amount of time that the process takes, and cycle time is the total amount of time that refactoring takes.
3. Your team is working on a visual representation of their current process to determine if there is a better way to perform the process. With which of the following visual items are they working?
  - A. Value analysis
  - B. Value maps
  - C. Story maps
  - D. Value stream maps
4. You are working on a Lean project. You have determined that you spend 50 minutes putting together a presentation that will last 20 minutes. What is the current calculated process cycle efficiency?
  - A. 70 minutes
  - B. 30 percent
  - C. 50 minutes
  - D. 28 percent

5. Your Agile team is in a scheduled timeboxed meeting and is asking questions like, “What *should* our product do?” “How could it fail?” “Why would it fail?” In what kind of meeting is your team participating?
  - A. Retrospective
  - B. Review
  - C. Premortems
  - D. Sprint planning
6. Which of the following is the best way to answer the following questions? *What should we stop doing? Start doing? Keep doing?*
  - A. Introspective
  - B. Reviews
  - C. Iteration reviews
  - D. Retrospectives
7. During the retrospective of your current sprint, your team seems to be all over the map in how they think things went. What is something that you can recommend to get to the bottom of the emotional reactions of the team?
  - A. Brainstorming
  - B. The 5 whys
  - C. Mad, sad, glad
  - D. Pair programming
8. What is the goal of a retrospective regardless of the techniques used?
  - A. The goal of a retrospective is reflection.
  - B. The goal of a retrospective is solutions.
  - C. The goal of a retrospective is venting.
  - D. The goal of a retrospective is formal closure of an iteration.
9. During your retrospective, what is the most important thing that you as a coach can do to help your team reflect on the iteration?
  - A. The team is encouraged to express their negatives as well as their positives of the iteration if it is well facilitated.
  - B. The team is encouraged to express their negatives but not their positives.
  - C. If the retrospective is well facilitated, the team is encouraged to express the positives of the project only.
  - D. The team is encouraged to learn from their mistakes and follow the lessons learned next time around.

10. Which of the following hybrid models of Agile is most common?
  - A. Scrum and ASD
  - B. XP and Crystal
  - C. Scrum and Lean
  - D. Scrum and XP
11. Your team is meeting during the early stages of the iteration to discuss some of the items that may go wrong in the iteration. Which of the following meetings are you conducting?
  - A. Retrospective meeting
  - B. Premortem meeting
  - C. Kickoff meeting
  - D. Sprint planning meeting
12. The Project Management Institute collaborated with which of the following organizations when developing its *Agile Practice Guide*?
  - A. The Scrum Alliance
  - B. The Agile Alliance
  - C. The eXtreme Programming Alliance
  - D. Project managers globally
13. Which of the following diagram types can show areas where issues have occurred, or may occur, and allow the team to adapt and adjust as needed?
  - A. Cumulative diagram
  - B. Kanban diagram
  - C. Burn down diagram
  - D. Cumulative flow diagram
14. Which of the following is the German term for pace or rhythm, and it is also used to help track performance on an Agile team?
  - A. Lead time
  - B. Velocity time
  - C. Cycle time
  - D. Takt time
15. Constraints are often called bottlenecks in production systems. Once the bottlenecks are removed, flow improves. This is an example of which of the following?
  - A. The Theory of Constraints
  - B. The theory of cumulative experience
  - C. The theory of bottlenecks
  - D. The theory of limiting WIP

- 16.** Jim is new to your team of developers and has a small amount of Agile experience. You have been tasked with explaining how your team is using a process flow called ScrumBan. How might you explain ScrumBan to Jim?
- A.** ScrumBan is more Scrum based.
  - B.** ScrumBan is a hybrid approach that incorporates aspects of both Scrum and Kanban.
  - C.** ScrumBan is a made-up term and isn't an actual framework.
  - D.** ScrumBan is a tailored approach using both Scrum and Kanban.
- 17.** Any one of the team members can suggest that a meeting of the minds might be necessary to switch gears in the middle of an iteration. This is known as what type of meeting?
- A.** Retrospective
  - B.** Review
  - C.** Stand-up meeting
  - D.** Intraspective(s)
- 18.** Your team is attempting to calculate their throughput. So far, they have completed three iterations.
- Iteration 1: 17 story points were completed.
- Iteration 2: 15 story points were completed.
- Iteration 3: 19 story points were completed.
- What is your team's current throughput?
- A.** 19
  - B.** 17
  - C.** 15
  - D.** 53
- 19.** Your team practices a Kanban approach to project management and prefers to use lead time rather than velocity to track performance. You are explaining this to a key stakeholder who isn't well versed in Agile. How would you explain the difference between lead time tracking and velocity tracking?
- A.** Teams that use velocity to track performance would want to *increase* velocity, and conversely, teams that use a Kanban approach would want to *decrease* their lead time.
  - B.** Teams that use velocity to track performance would want to *decrease* velocity, and conversely, teams that use a Kanban approach would want to *increase* their lead time.
  - C.** Teams that use velocity to track performance would want to *increase* velocity, and conversely, teams that use a Kanban approach would want to *increase* their lead time.
  - D.** Teams that use velocity to track performance would want to *decrease* velocity, and conversely, teams that use a Kanban approach would want to *decrease* their lead time.

- 20.** Large Scale Scrum, or LeSS, can best be described as which one of the following?
- A.** LeSS is a product development framework that extends some of the confines of Scrum but doesn't allow for scaling guidelines.
  - B.** LeSS is a product development framework that extends some of the confines of Scrum and allows for scaling guidelines without losing the original purpose of Scrum.
  - C.** LeSS is a hybrid of both Scrum and Systematic Systems thinking.
  - D.** LeSS is just another way of saying Scrum with less management.

# Appendix

# B



# Answers to Review Questions

# Chapter 1

1. C. The first value points to focusing more on individuals and collaborations than on a set methodology or tools and techniques.
2. B. The Agile Alliance was created by a group of software developers who were looking for better ways to manage their projects with a sharper focus on software development.
3. D. Agile projects involve frequent changes and documentation at the last responsible moment. If a plan is followed to the letter, it doesn't allow for frequent changes.
4. D. All methods focus on ways to increase value for the customer by communicating and adapting to changing customer needs.
5. C. Even though there are specific frameworks like Scrum and XP that help manage projects more effectively, the main goal of Agile is to provide value and continuously learn and improve.
6. A. It's not uncommon that people new to Agile frameworks get confused about managing change over formal preplanning, but planning is a big part of Agile project management, just not long-term planning when you know things will change.
7. A. These pillars also support the Scrum framework and provide a good itemized list of the Agile mindset.
8. A. This is the biggest difference between Waterfall and Agile. Agile involves planning, but waiting until the last responsible moment to do so. The scope of work isn't fixed as it is with Waterfall projects.
9. B. Many organizations are too quick to say something doesn't work when they don't get immediate results. Agile is very different from many set processes that helped build out the industrial age, and it is open-ended and flexible. It takes practice and time to integrate.
10. A. It isn't recommended to try to create a hybrid approach until all best practices are well understood and have been used. This doesn't mean that you couldn't incorporate stand-up meetings on your next Waterfall project. It's just not recommended to combine full frameworks until everything is well accepted and understood.
11. B. The Agile Manifesto was the outcome of the meeting in Utah, which was held due to the frustration with current methods of software design and project management.
12. C. The Agile Manifesto isn't saying that you should choose one over the other; it is merely suggesting that you should place individuals and your interactions with them over sticking strictly to tools and processes that may or may not be working.
13. A. Because software design is about providing value to the customer quickly and that value can change frequently, Waterfall isn't the best method due to heavy preplanning and formal change control systems. While some software projects could be managed with Waterfall, depending on the nature of the project, Agile is better suited for rapid changes and planning at the last responsible moment.

14. D. Individuals and interactions over processes and tools is the first value of the Agile Manifesto.
15. A. Responding to change over following a plan is the fourth value in the Agile Manifesto.
16. B. Working software over comprehensive documentation is the second value in the Agile Manifesto.
17. C. Customer collaboration over contract negotiation is the third value in the Agile Manifesto.
18. C. The Declaration of Interdependence states, “We increase return on Investment by making continuous flow of value our focus.”
19. D. Agile project teams are self-directed and self-managed, but they also have coaching from an Agile project manager to help them maintain the vision of the work and reach consensus as a team on next steps.
20. A. Agile project teams work best in a colocated environment. While that isn’t always possible, it is suggested that the team collocates on a regular basis or at least for one iteration if they are remote/virtual team members.

## Chapter 2

1. B. Scrum is a lightweight framework that is easy to learn and difficult to do.
2. A. A retrospective is the final meeting of a sprint, where the team discusses what went well and what didn’t and makes plans for improvements. The other answers are actual outputs or artifacts of the Scrum framework.
3. D. Sprints are rarely canceled, and if they are it is because the product has become obsolete. Therefore, a sprint would not be canceled in the middle of a project for the other reasons given.
4. A. All of the other answers represent the core values of XP. Coaching is an important aspect of all Agile methods or frameworks, but it is not unique to core values.
5. D. Pair programming is a large part of XP, geared to maintain consistency, learning, and communication during programming. One programmer codes, the other oversees, and then they switch.
6. B. The daily Scrum allows the development team to discuss work in progress, work to be done, and impediments to their progress. The daily Scrum is timeboxed at 15 minutes.
7. D. Part of being a servant leader is to take on administrative work as needed to keep your team focused on the work in progress. You may also suggest to the stakeholders that asking for too many updates can hinder progress, but in this case option D is the best answer.

8. C. Daily Scrums are for informational purposes only, and the development team are the only ones to discuss what they have done, what they are doing, and what impediments are in their way. Any others attending the Scrum are silent observers. Other stakeholders can attend but not participate in the discussion. No solutions are generated during the meeting, only information.
9. C. The product owner's primary responsibility is to own the product backlog and communicate and redistribute the value as needed.
10. C. Regardless of the specific framework, all Agile teams are self-organized and self-managed.
11. A. Retrospectives allow the team to review what went well and what the challenges were during the sprint. This reflection point allows for discussions of continuous improvement for the next sprint.
12. D. Agile project managers are servants first to their team and practice leadership more so than management. Their job is to coach and support their team.
13. A. Understanding what “done” is allows the team to plan around the requirements and produce a usable increment at the end of each iteration/sprint.
14. D. The team is self-directed and self-managed so that they can make decisions about how they will go about creating the result. They communicate regularly to share knowledge.
15. A. Three questions in each daily Scrum or stand-up meeting are, What did we do yesterday? What we will do today? What impediments are in our way?
16. B. The product owner is responsible for the product backlog, but it is transparent and open to the entire team, who helps to determine what items of value will be delivered in the next iteration/sprint.
17. C. The daily Scrum or stand-up meeting is timeboxed for 15 minutes every day. This keeps it short and to the point while updating the entire development team on what is occurring during the iteration/sprint.
18. B. The grooming of the backlog process is done by the team, but the product owner is responsible for pushing items of value to the front. The team will select from the backlog work that can be accomplished in the iteration based on current value.
19. B. The sprint backlog represents the chosen items the development team will work on during the sprint. They will select what they believe they can accomplish and what they believe will produce a usable increment at the end.
20. A. The daily standup meetings or daily Scrums are designed to provide up-to-date information to the development team about work completed or in progress as well as anything that is preventing them from being totally successful right now.

# Chapter 3

1. D. The MoSCoW approach to determining value is based on brainstorming what is the most important feature today and that it must be in the increment, following by what should be, what could be, and what won't be.
2. C. The Pareto principle was created by Vilfredo Pareto as a way to study distribution of wealth in Italy. It was adapted by Joseph Juran to determine what causes have the most effect on the results. Identify those causes and you can fix the defects.
3. D. In a Lean environment, determining waste in approach and result is the best way to remove it from the process. Waste is the opposite of value because it provides no value and instead produces problems in the increment and/or the process to create it.
4. A. In Lean, too many handoffs of pieces or parts of work create numerous problems regarding the quality and to the process, and it is considered one of the seven wastes of Lean.
5. B. A Kanban board is one of the most effective ways to show information and radiate it out to stakeholders. The Kanban board is a visual board displaying Kanban cards and using a pull system to replace work that has been deployed and pull more into the work in progress (WIP). Kanban boards are like Scrum boards, except in Scrum new work isn't added until the next sprint.
6. A. Limiting work in progress (WIP) allows the team to focus only on the work that is to be accomplished and not pull any additional work in until the team is ready to perform it.
7. A. Originally, Feature-Driven Development was created to counteract a more Waterfall type of methodology. Because larger teams were working on an increment or result, it was necessary to compartmentalize work by feature so that there wasn't any confusion or duplicate work occurring on larger teams.
8. C. Increasing criticality is the best way to manage projects that have a sliding scale of noncritical to critical work being accomplished. Larger projects with more intricate results need a heavier method than one that needs a lighter framework to produce to spec.
9. D. All frameworks and Agile methods are tolerant of changes and, in fact, expect changes to occur. This allows for flexibility in the design to best meet the needs of the client and to help the team adapt as needed to produce the increment.
10. D. Servant leadership is different from management in the sense that you will take on administrative work as needed to help your team be most successful. This could be anything from doing updates to status, or even coaching the other stakeholders in your Agile framework so that they don't inadvertently add more work to the team's plate.
11. C. Notice that the only answer that doesn't include *I* is the correct answer. Active listening as a servant leader is making sure that you are there for the team member, not thinking about yourself or what you need to do next. Once you have listened, you can then coach the team member through the issue.

12. D. Adaptive leadership is less about management and more about inspiration, active listening, coaching when needed, and helping your team to be more successful. This is a major trend in Agile projects and heavily tested on the PMI-ACP exam.
13. B. Colocation is highly important for Agile project teams. Even if the team is remote or virtual, it is recommended that the team be colocated for at least two iterations to build as a team and to focus on how to get the work accomplished as a team.
14. C. Osmotic communication is part of being colocated. It allows everyone to hear everything being communicated, and the individual can choose to listen if it relates to them or choose to ignore it if it serves no purpose. This communication method is highly regarded as one of the best knowledge transfer techniques.
15. A. Being a good leader is much more than seating your team together and having daily stand-up meetings. It's practicing motivating your team when needed, compensating and celebrating successes, and encouraging your team to be self-directed and self-managed while taking on administrative work as needed.
16. C. Even though this may not be the case in your current environment, it is important to note that Agile project managers spend most of their time communicating with their teams, product owners, customers, and other stakeholders.
17. A. Lean was created to help with the supply chain in Toyota manufacturing plants and was later adapted for Agile frameworks as a complementary process rather than an actual methodology.
18. C. The traditional cycle of Plan-Do-Check-Act in Waterfall was replaced by the ASD framework as a way to improve continuously in an adaptive way.
19. D. The Agile project manager's role is as a servant leader. The management tasks are done, but to a lesser degree than with Waterfall project managers. It is more important to serve your team as a leader. Your team is self-directed and self-managed. This concept is difficult for stakeholders new to Agile project management.
20. B. Using Kanban or Scrum boards is one of the best ways to show visually what work is in the backlog, what work is in progress, and what work has been done. Most progress is shown visually throughout the iterations in one form or another.
21. B. Much like the initiation phase in a Waterfall project, Iteration Zero allows the team to prepare for the iterations to come by creating a plan for the process and identifying the team roles and responsibilities and to determine officially the process that will be used.

## Chapter 4

1. B. Osmotic communication is a way to absorb information even if you are not involved in the actual conversation. That information can be taken as important or not depending on the needs of the individual.
2. D. Wireframes allow the team to work through a type of prototyping in an easy and low-tech way by drawing or plotting out what the increment might look like.

3. C. Even though options B through D help organizations get to the point that a charter could be created, net present value is the only one that has all of the information in it and can provide the best overall determination of fiscal health when selecting a project.
4. A. Even though you could say that it is written in the format of a user story, the story itself is so vague that there isn't any way in which to direct the conversation. It's hard to negotiate features or really understand what the customer wants.
5. D. You are asking your customer for a very small, concise explanation of what success looks like. Even though elevator statements should be about 30 seconds long, a tweet cuts out all of the noise and gets to the bottom line in 140 characters or less.
6. C. The only answer that isn't self-focused is option C. The key to active listening is not thinking about what you are going to do or say next but to remind yourself to focus on the message you are receiving.
7. B. A user story that is too large isn't going to be effective. Even after it is broken down from the epic level, too much information in a user story doesn't follow the INVEST process of creating effective user stories.
8. C. In this case, all things have been calculated into the NPV equation, and if a decision needs to be made strictly on NPV, you would always choose the highest number with the most ROI.
9. A. A wireframe is a low-fidelity mock-up of what the user story represents or what success looks like.
10. B. Option B is the best answer because Agile project charters are more flexible in their approach and documentation by providing the who, what, where, when, and how as you know it today.
11. A. Emotional intelligence is the ability to recognize yourself in other people's experiences.
12. C. The correct format for user stories is:  
As \_\_\_\_\_ I need \_\_\_\_\_ so that I can \_\_\_\_\_.  
The format is important, but not as important as making sure the story is able to be tested, negotiated, and well understood.
13. A. User story workshops are a way to determine the user stories over the period of the project, but they are most important to engage stakeholders in what success looks like and to gain an understanding of what the customer wants through communication and collaboration.
14. A. Payback period tracks the amount of time outgoing expenditures are recouped before a profit is made. It isn't the most reliable selection technique, and it would need to be utilized in a net present value (NPV) formula with additional information to truly be relevant.
15. D. The project charter is an excellent jumping-off point, but it really is only describing things on a very high level. It isn't until you start working directly with the customer that your team can begin to figure out what success looks like.

16. C. Even though mirroring isn't something you'll likely see on the PMI-ACP exam, communication surely is. Mirroring it is an important aspect of effective communication. This study guide will prepare you for the exam, but there are other key points that are useful in your day-to-day work life, and mirroring is one of them.
17. A. An Agile project charter is more flexible in nature because the scope of work isn't set in the beginning, so determining full-blown schedules, budgets, and risk is much more difficult to accomplish. Therefore, Agile project charters wouldn't contain this amount of information.
18. C. A tweet can be created to gain an understanding of what the customer wants in a concise way.
19. A. Until your team knows the definition of done, it is virtually impossible to build a working or viable product or service because there isn't an end in sight.
20. C. A persona is a way to gain valuable insight into the customer's needs. It is sometimes developed around a fictitious character as a way to work through a similar situation and gain a better understanding of what the customer or end users want and need without yet knowing the customer very well. Or, it can be based on the customer themselves.

## Chapter 5

1. B. The gulf of misunderstanding occurs when the customer and the team misunderstand the requirements. It is often the cause of disagreement on direction and on features/functions of the increment.
2. D. This is called "strategic avoidance." Many people have differing opinions about news stories, and the Agile project manager shouldn't get involved as it isn't relevant to project work.
3. C. Even though this could describe an Agile team, all teams go through periods of adjustment before performing as a self-directed team. The Agile project manager is much more of a servant leader than a manager when a team is self-directed and self-managed.
4. A. The product owner is using good negotiation techniques. It's important to be able to give value to the customer, but occasionally it's important to negotiate for the most important features and do away with the ones that don't serve a purpose.
5. C. Obviously, which resolution strategy would work best in each scenario depends on the conflict situation. If, in general terms, you are asked what is the best or longest-lasting strategy, the correct answer would be confronting or collaboration.
6. B. Since your team is in the performing phase of team development, they are working together and may only need coaching here and there, and only if they ask for it.
7. B. Having your team be colocated is generally the best setup for team space. Even though it isn't always possible to do so, colocation is recommended as a best practice in Agile environments.

8. C. Having your team colocated in one team space improves communication and allows individuals to overhear information and choose to retain or discard it through osmotic communication. It also builds relationships and trust, but that only happens with improvement in communication.
9. C. Storming is a natural occurrence with newer teams. It is important for the coach/Scrum Master to coach the team through it.
10. D. Removing roadblocks and taking on administrative work is a key aspect to practicing adaptive leadership.
11. C. Engaging stakeholders in the definition of done and helping them determine what success looks like is a valuable way to manage stakeholder expectations.
12. D. Active listening is a large part of effective communication and stakeholder engagement. It's best to listen to what the stakeholder is saying rather than thinking about what you will do next or how to solve their problem.
13. D. In this situation, it is unnecessary to step in to help resolve the disagreement. Your team is collectively disagreeing, and it is working toward a solution. Unless you are asked to help, it's better to let them work through it on their own.
14. D. The Project Management Institute's Professional Code of Ethics and Professional Conduct describes mandatory skills, which include not breaking the law and not discriminating, and aspirational skills, such as communication, negotiation, and motivation.
15. D. Smoothing helps everyone focus on what things they have in common and what may be necessary to work on before any collaboration can occur. When used alone, smoothing is only a short-term fix, but it may be necessary in a heated exchange situation.
16. D. Even though questions about Maslow's theory aren't something you'll likely see on your PMI-ACP exam, having the ability to motivate effectively is important to servant and adaptive leadership. This study guide will prepare you for the exam, but there are other key points that are useful in your day-to-day work, and motivational theory is one of them.
17. B. Negotiations that are effective result in a win-win situation for all those involved. In this case, the team explained their side and the product owner explained why they thought their point was valid. In the end, the team determined that they could add one more story but not two. Both sides walked away with something in the exchange, and it was settled appropriately.
18. A. Good interpersonal skills are necessary to engage stakeholders and to have the emotional intelligence to work with them on determining value. Being an adaptive leader also involves interpersonal skill sets.
19. C. Engaging your stakeholders doesn't mean doing everything they say. In fact, a good servant leader would listen to their concerns but also explain how a self-directed team works together to estimate and protect the team from interruptions.
20. C. There are a couple of things going on here. First, the product owner is in charge of the backlog, and stakeholders should respect that. Next, adding a feature because the stakeholder finds it valuable may not match up with the customer's needs. Finally, in Scrum, no new user stories are added in the middle of a sprint.

# Chapter 6

1. B. Velocity in the first several iterations/sprints will vary and then increase the amount of story points that can be accomplished as the team gets further into the project. Eventually, the velocity will plateau and then the team can most effectively forecast completion.
2. C. At this point, early in the iterations and with everything fluctuating, it's best to get an average and use that to forecast. In this case, the team would round up to 15 iterations, since partial credit isn't going to work.
3. D. This question includes the word *except*, meaning that everything is correct except option D. Decision delays are not applied to taking an epic and breaking it down to a user story level. Even if that were true, the correct order would be taking something that is course-grained and breaking it down to a fine-grained level.
4. C. Ideal time is basically a duration of time that something would take if you didn't have any distractions at all, meaning that in a 40-hour work week, you didn't do anything else except work on your project. Ideal time isn't an effective way to plan.
5. C. The format in which user stories are written include these three variables:  
As \_\_\_\_\_ I want/need \_\_\_\_\_ so that  
I can \_\_\_\_\_ .
6. D. Backlog grooming or refinement is the act of the product owner sorting the backlog by priority. The development team may be involved in this process, and it usually is, but it is the responsibility of the product owner to do so, and everyone else will respect their decisions.
7. C. For the most part, if you were to go hierarchically, that would be the order of decomposition. Just like anything in Agile, it depends on your team and how you decompose work, whether you work with themes or just epics. It is also the best answer from all the options, since many answers use the words *task* and/or *sequencing*.
8. D. A story map gives the team a visual representation of the work that they are going to do and what success looks like.
9. A. A definition of done is necessary so that everyone has a specific understanding of what the result will be so that they can create it and know when it has been created and is finished.
10. C. A persona is used by the team to understand the customer or end users in a way that makes them more relatable. Sometimes, a placeholder name or person is used to help describe what an end user might need from the deliverables.
11. C. Velocity is the amount of work a team can accomplish in an iteration. It is calculated by how many story points were selected and how many were achieved during an iteration.
12. D. When you divide 201 by the current velocity of 50, you get 4.02. The most logical way to calculate how many iterations are left in this case is to round up to five since partial work doesn't count and you have already attained a stabilized velocity.

13. C. It happens. Not everything will always be completed in every iteration, no matter how well you plan. If there is leftover work or there are story points, they will be put back into the backlog and sorted by priority. Typically, that work would be put into the next iteration.
14. A. Timeboxes are used for a variety of Agile activities, including the iteration length, planning meetings, backlog refinement, spikes, and stand-up meetings.
15. C. Iteration Zero, or sprint zero, allows a team that is perhaps newer to Agile and doesn't have a process intact yet to develop their process, or if a seasoned team determines that they need a discovery iteration to develop the best approach, they would use Iteration Zero.
16. B. Ideal time is time that is spent without interruptions and isn't an effective way to estimate.
17. D. The product owner will be the person responsible for the backlog. Even though the team may help with clarification or backlog refinement, the product owner owns the backlog and determines priority.
18. B. A master list of visible work is a backlog, and it is a living document that is reviewed, reorganized, and reprioritized by the product owner while grooming or refining the backlog.
19. A. Agile teams apply a certain amount of story points based on relative sizing to determine just how big the work is. They then use that information to plan how many points they can accomplish. *Lessons learned*, while not a key term in Agile, is an apt description of how teams learn from the past and apply it to the present. Velocity will eventually stabilize based on better estimates.
20. A. In this case, Bob may not understand the ins and outs of the technology, and because of the lack of knowledge about the work, it may seem bigger to Bob than to his teammates. In this case, Bob is an outlier and would need to explain why he chose 10 instead of 5. The team would then discuss and vote again.
21. C. If the team averages 10 points a sprint, and that is the maximum they can do, they would have three more sprints left to accommodate all of the work without partial work done in a sprint. The priority would be A and B, then C and E, and then D.

## Chapter 7

1. A. Generalized specialists are excellent for Agile teamwork because the individual is an expert in their field but has additional skill sets and knowledge that can benefit the team.
2. B. If your team is performing, it is your role to be a servant leader, and if your team asks for or needs help, you provide it. Otherwise, you act as more of a facilitator.
3. A. The concept of Shu Ha Ri describes the progression from obeying the rules of new skills and then branching out a bit to something that suits you without breaking the rules. Finally, in Shu Ha Ri you achieve skill mastery where you can perform the skill in any way that it needs to be performed.

4. B. Colocation is highly recommended, if possible, for the team. Even if the team is virtual, it is recommended that they be colocated for planning and at least one if not two iterations.
5. C. Osmotic communication is the main reason. Obviously, some of the other reasons are relevant in colocation as well, but the main reason is to improve communication.
6. B. Since your team is in the performing phase of team development, they are working together and may only need coaching here and there as a team. Typically, the best time to do so is during planning and retrospectives.
7. C. Having your team be colocated is generally the best setup for team space, but even when the team is colocated someone may need privacy for a phone call or to work in silence when thinking through a difficult technical issue. Caves or common rooms can be provided for team members working on the same project(s).
8. B. The only guarantee in this model is the guarantee of safety rather than support. The support piece goes without saying, but having a safe environment in which to improve skills, ask questions, and learn allows for effective coaching.
9. B. Velocity fluctuates on any project, but typically the biggest fluctuations are in the beginning, and eventually the amount of work increases and levels off.
10. A. A burn down chart is used to show how much work has been completed, and it can help the team determine how much time the project will take. A burn up chart tracks work completed, but it also shows changes in scope and how that affects the ideal burn.
11. A. To determine how many iterations remain, the team would take an average of all of the iterations and divide it into the remaining points. In this case, the team would probably round up to 13.
12. B. Burn down, burn up, or velocity tracking charts are the best information radiators to present information on performance.
13. D. Most Agile projects do not use Gantt charts, unless they are using a tailored method that needs that type of reporting. In this case, reporting is best served in a highly visual way that is easy to understand.
14. A. Caves and common rooms are useful for colocated teams when they need a bit of privacy or need to work on something project-specific but need quiet to do so.
15. D. It's a best practice to try to colocate all team members for planning and at least one iteration, if possible.
16. B. This question pertains to actual virtual team members, and while video calls are great, the team is better suited for creating their own mission statements and ground rules in the beginning. That will make future video calls much easier.
17. C. Osmotic communication is realistic for colocated teams, and if the team space is set up correctly, this type of communication distribution and collaborative learning is easier.

18. B. Part of being a good coach is to provide a safe environment in which the team can make mistakes and learn from them. If the team asks for coaching, or if you see an opportunity or need for coaching during a retrospective, then it is perfectly within reason to provide it at that point.
19. C. Burn down charts provide a visual of iteration performance and allow the team to estimate when the project may be completed.
20. D. Burn up charts allow the team to track performance visually while also tracking changes in the scope of work that could affect their velocity or completion of stories in an iteration.

## Chapter 8

1. D. The entire team includes the product owner, the development team, and the Agile project manager as well as other stakeholders—even the customer or sponsor. Inevitably, the product owner owns the backlog and needs to prioritize value. Nonetheless, they don't do that in a vacuum: There is much discussion and interaction when deciding how to determine what is valuable.
2. C. The gulf of misunderstanding can occur when value has not been clarified or either the customer or the team misunderstands what will be created on the project. To avoid this misunderstanding, the team will use a variety of techniques to reach consensus on what they are building and why.
3. A. Giving the team and other stakeholders colored dots and allowing them to vote on their choices of features and functions allows for discussion and consensus to be reached.
4. C. The 100-point method is designed to allow for prioritization in a facilitated way. This allows everyone to determine what they feel is most important and score it accordingly.
5. B. What this is describing is something new and innovative that hasn't been done before. That describes an exciter that the customer wants included in the next release.
6. B. Using a more flexible type of contract on Agile projects allows for updates or change in scope without any penalty or legal breach of contract.
7. C. This project is over budget because the cost variance is determined by comparing the earned value to the actual cost. Less work was done and you paid more for it. For the schedule variance, more work was done than planned, so the project is ahead of schedule.
8. A. The earned value technique will allow for a comparative approach between the scope of work planned to be accomplished and what it has cost to accomplish that in order to obtain the cost performance index, or CPI.
9. C. In this case, the question is asking for the schedule variance. The formula for that is earned value – planned value. Because less work was accomplished than planned, this project is behind schedule by \$400.00, so the answer would be a negative value. The other answers are either positive numbers or indexes obtained by using the formulas incorrectly.

10. A. In this question, all answers could be, in some ways, correct. The best answer here is that the customer isn't understanding your technical jargon and/or why what they want will not be in the final increment. This is due to the gulf of misunderstanding. If Kano analysis had been performed, there would be a better understanding rather than misunderstanding.
11. D. A service level agreement allows for terms and conditions to be determined in the beginning so that future changes in scope won't result in renegotiations throughout the project.
12. B. Monopoly Money is a great way to see how a sponsor or customer would spend their money if given the entire budget to disperse.
13. C. In this case, the *must-haves* versus the *won't-haves* points to prioritization using the MoSCoW approach.
14. D. The cost performance index is a rating of efficiency on the project. Any result over a 1.0 shows that the project is under budget and essentially getting more work accomplished for less money.
15. C. A fixed-price contract is good for organizations that are trying to control costs and have a good understanding of the scope of work. There is less flexibility for scope changes, but cost risk is lower.
16. A. Key performance indicators will vary depending on what the return on investment looks like in an organization. Typically, KPIs relate to project and team performance.
17. A. Setting SMART goals is a large piece of improving all aspects of goal setting.
18. C. The SMART mnemonic acronym stands for specific, measurable, attainable/assignable, realistic, and time-based.
19. D. This response shows a cost performance index under 1.0; that is, the budget is only at 80 percent efficiency when Jamal expected 100 percent.
20. D. There isn't anything that points to a specific time frame for Carol to attain her goal.
21. B. You would need to obtain the planned value, or what you thought you would accomplish at this point in the schedule, and divide it into the earned value, which is how much was accomplished. The formula is EV / PV.
22. B. Over time and use, excitors become less exciting and fade into the satisfier area.
23. D. In an Agile project, it is typical that the cost and time would be more rigid and the scope of work would be more flexible. The opposite is true in a Waterfall type of project.
24. B. Net present value is used to help organizations make decisions based on the payback period, internal rate of return, and present values. The higher the net present value, the higher the expected return on investment.
25. A. Dot voting, or creating a dotmocracy, allows the team to express their opinions and vote on the options that they think are valuable. This allows for transparent communication and consensus to be reached.

# Chapter 9

1. A. Progressive elaboration is the process by which information is learned and then added to the existing plan. Because changes are expected, the team will elaborate on the plan with new information when it is identified.
2. B. The strategy of rolling wave planning incorporates the model of replanning multiple times and waiting until the *last responsible moment* to put together those plans. As waves of information roll in, we can then plan accordingly.
3. D. Course-grained requirements are broken down to fine-grained requirements once more information is discovered, not the other way around.
4. C. If a risk event is more impactful financially than the ROI gain of a feature, the project may be cancelled.
5. A. A risk burn down chart will show the progression of mitigation efforts. If the project is going well, the chart will trend down.
6. D. Both sprint/iteration and risk information can be represented on a burn down chart. Risk burn down charts are typically separate, but for both, a burn down is what is represented to show the scope of work completed and risk mitigation efforts working.
7. D. Risk-based spikes are special stories that are created and designed to remove or reduce risk from the iteration.
8. B. The product owner would need to be made aware that a spike is needed and approve the spike to move forward. The entire team doesn't usually work on spikes. It is usually one or two developers.
9. C. Agile projects use progressive elaboration and the strategy of rolling wave planning rather than comprehensive upfront plans and documentation.
10. C. When you're creating your risk-adjusted backlog, the sequence would be determined by the financial values of both risk and features, and the one that is most impactful financially would be worked on first.
11. D. When needed, you may coach your team on the right direction to go. In this case, they may need to perform a spike to figure out their strategy or create a proof of concept.
12. B. Chris should discuss performing a risk-based spike with the product owner and move forward with approval to determine if the risk can be mitigated.
13. B. Tech debt would need to be paid later in the project because the easiest solution was implemented, but maybe it was not the best solution at the time.
14. C. Gail is refactoring the code to make the code easier to read and edit as well as to clean it up without impacting the actual performance of the code.
15. B. Expected monetary value allows for an analysis of risk events to determine the monetary value of risk at its current assessed probability and impact.

16. B. A risk burn down chart shows project or iteration risk. As steps are taken to mitigate or remove risk from the project, the risks should be burning out, and therefore the chart should trend down.
17. B. Asking “why” five times in a row allows the team to identify root causes of risk they might have missed otherwise without further discussion of the causes.
18. D. The most impactful financially would be placed at the top of a risk-adjusted backlog. In this case, Risk D is more financially impactful than the rest.
19. A. The formula is probability × impact. In this case, it would be  $0.30 \times 10,000 = \$3,000$ .
20. B. The product owner would need to place the highest-impacting risks at the top of the risk-adjusted backlog since they are financially damaging and would need to be mitigated before working on the features currently on the backlog.
21. C. SWOT stands for strengths, weaknesses, opportunities, and threats. It allows for a specific focus on what is going well or not so well in the present that could impact the future.
22. B. Special causes are always a surprise and can lead to defects. Common causes are events that we expect in every project.
23. A. Tech debt is what happens when a development team writes code that is easy to implement in the short term instead of attempting to apply the best overall solution up front.
24. A. If it is a common practice to have more than one person work on a feature, then inevitable human error will create a defect at some point in the project.
25. B. A secondary risk is when you implement a response to a risk event and create a totally different risk. It is always a surprise, and it will require a workaround to manage it.

## Chapter 10

1. C. Value stream maps are an excellent visual way to plot out the process and determine where there is waste that may need to be adjusted or removed.
2. A. Lead time reflects the total amount of time that it takes from a customer request until the customer reviews the final result, and cycle time is the development life cycle from a work request that the team receives up to the execution and completion of that specific request—the life cycle of the increment.
3. D. Value stream maps are a way to represent current processes visually and look for better ways to streamline those processes.
4. D. The way to calculate process cycle efficiency is to take the valuable time of 20 minutes and divide into it the total time of 70. That will give you a percentage of efficiency of 28 percent.  $20/70 = 28\%$  rounded down.

5. C. Premortems involve asking questions about how the product or project could fail in advance of the execution of the work in order to determine what problems could arise and to fix them before they occur.
6. D. Retrospectives are timeboxed events that the team attends to look back on the iteration that they just completed to determine if there are any improvements that can be made in the next iteration.
7. C. Mad, sad, glad is a way that the team can express their feelings on how the iteration went. This can be facilitated or anonymously submitted. Either way, it allows for the generation of conversation, and areas that may need improvement can be discussed.
8. A. The goal of a retrospective is reflecting on the previous iteration, how the team performed, how the work was executed, how the team's velocity was in the last iteration, and so on. This allows for transparent communication and action items to be discussed.
9. A. Addressing all aspects of the iteration helps the team focus on the good and the challenges the team is facing so that workable solutions can be created.
10. D. Scrum and XP have best practices that are the most compatible with each other, and many teams use a combination of best practices from each to tailor their projects.
11. B. A premortem meeting is a way that the team can discuss what may occur in the future and work to avoid any potential threats to the iteration.
12. B. The Agile Alliance is a group dedicated to best practices in Agile project management, and based on a collaboration with the Project Management Institute, the *Agile Practice Guide* was created.
13. D. Teams can use a cumulative flow diagram to review the flow of their process and determine where issues could occur or have already transpired. Its visual nature allows the team to make decisions on what to fix and how to fix it.
14. D. *Takt time* is used to determine the team's pace or rhythm during an iteration, and it is used to determine the rate at which the team needs to work to keep up with customer demands.
15. A. The Theory of Constraints, or TOC, is a way to look for any bottlenecks in the process, identify the cause, work to remove it.
16. B. ScrumBan is a hybrid approach that incorporates aspects of both Scrum and Kanban as needed, and it was originally created as a way to transition from Scrum to Kanban.
17. D. An intraspective meeting may be necessary when the team is experiencing a lack of cohesiveness or needing a different direction to go in on the iteration work. Anyone can suggest an intraspective meeting.
18. B. Your team can calculate their throughput by adding all of the story points together and then dividing by the amount of iterations. In this particular case, the throughput is equal to one of the total points completed in the iteration. It doesn't always work out that way.

19. A. When tracking velocity, a team would be working to increase the amount of story points they can accomplish in each iteration as a part of continuous improvements. Lead time, on the other hand, would need to decrease. If lead time decreases and velocity improves, this would show continuous improvements and better overall performance.
20. B. LeSS is a product development framework that extends some of the confines of Scrum and allows for scaling guidelines without losing the original purpose of Scrum. There are two levels of Large Scale Scrum: LeSS Huge and LeSS Level.

interdependent on one another: the project manager, development team, customers, and other stakeholders.

**WIP (Work in progress)** The work in progress is what the team is working on right now.

**XP** XP is short for eXtreme Programming and is an agile approach that is focused on software development. XP also uses iterations of development, but these iterations last for two weeks in a typical project.

## Questions

1. You are the agile project manager for your organization and your current project is to manage a team developing software that will affect the business practices of the organization. When working on an agile project, processes, tools, documentation, and plans are necessary. However, which of the following should be the initial focus?
  - A. Scope of the project
  - B. People involved in the project
  - C. The individuals and interactions involved
  - D. Definition of success as defined by the project manager
2. A diverse agile team has been assembled by upper management, and there is confusion about the requirements and definition of success of the project. What might have been a better method of creating the team?
  - A. Select a person from each team with interest in the project
  - B. Allow a self-organizing team from the people that helped create the requirements and definition of success
  - C. Have the business partner select the members she wants on the project
  - D. Have the business partner hire a team of contractors that have to be “sold” on the project

3. What is one item that should be accomplished during a sprint planning meeting?

  - A. The product owner shares the updated backlog, and the team discusses it to ensure a shared understanding.
  - B. Three questions—what have I accomplished?, what do I plan to accomplish?, and are there any roadblocks?—are answered by each participant.
  - C. The product owner decides if the product is done.
  - D. The scope and costs of the project are renegotiated.
4. A good practice in keeping a project on track is to minimize waste. Which of the following could be eliminated from a project to maximize value?

  - A. Daily meetings
  - B. Unnecessary features
  - C. Testing
  - D. Sprint reviews
5. Tom is the project manager for his organization and he's educating the project team and key stakeholders about Scrum. Some of the team members are confused about the activities that happen after the sprint review. What activity should Tom indicate is completed after the sprint review?

  - A. Product backlog refinement
  - B. Sprint planning meeting
  - C. Daily Scrum
  - D. Sprint retrospective
6. Samantha is the ScrumMaster for her organization and she's working with the team and the product owner to refine the product backlog. What is the role of the team in this meeting?

  - A. Prioritize the work items
  - B. Add features to the project backlog
  - C. Estimate and refine the work items

**D. Identify fixes**

7. Which of the following describes how Kanban differs from agile?
  - A. Kanban teams plan their work in sprints or iterations.
  - B. Kanban teams work on a project as a whole.
  - C. Kanban teams employ a pull system.
  - D. There are no WIP limits in Kanban.**
8. Pat has been selected to lead the RGW Project with Scrum methodologies. The project team is excited about this decision. Select which trait has made the team happy about this decision.
  - A. Pat likes to work within the box.
  - B. Pat has been with the company for 12 years.
  - C. Pat is honest and explains why decisions are made.
  - D. Pat will lead according to the project plan.**
9. You are the project manager of the JLK Project utilizing Scrum. Several stakeholders have lost interest in the project and rarely attend meetings, offer input, or give feedback. What is a good practice to avoid this pitfall going forward?
  - A. Making project meetings mandatory
  - B. Meeting with each business partner on a one-on-one basis
  - C. Proving that everyone's ideas have value and taking advantage of small-scale experiments
  - D. Sticking strictly to the project plan**
10. You happen to bump into a business partner of the project you are working on, and he asks you how many defects were found in the prior week. Since you don't know the exact answer, what should you do?
  - A. Take a guess
  - B. Tell the business partner you will send an e-mail to him with the information when you get back to your desk
  - C. Take him into the team area, where much information regarding the project is displayed**

- D. Ask the business partner to call the team leader to get a correct answer
11. The agile team you are working with encourages each other to suggest innovative ideas. Most ideas are tested to determine whether they will be successful or may not work very well. How is this accomplished without delaying the project?
- A. The new ideas are only tested if there is sufficient time in the project plan.
  - B. The ideas are tested during short iterations and end before the next iteration.
  - C. Only one idea is accepted by the leader during an iteration.
  - D. Only the leader determines what ideas to test and what to put aside.
12. What does the term *emergent leadership* mean in an agile environment?
- A. A new leader is assigned for each iteration.
  - B. A team member takes over the leadership role.
  - C. A team member tries a new approach after getting approval from the team.
  - D. A leader isn't in place until the team selects one of the team members.
13. How is an agile team better prepared to suggest solutions to a business request versus a team that is not using an agile methodology?
- A. The agile team is made up of business people.
  - B. The agile team worked with the business partner to prepare the project plan.
  - C. The agile team and business partners work together throughout the project life cycle.
  - D. The business partners review statuses and ask for recommendations.
14. As a PMI-ACP candidate you need to recognize the terms and techniques utilized in agile projects. Which one of the following is

the best example of an empirical process?

- A. Following a plan
  - B. Observing results and adapting the code
  - C. Making collaborative decisions
  - D. Working alone on a project requirement
15. You are the agile project manager for your organization and you're helping your development team better understand agile. You have reviewed the Agile Manifesto with your team. Which one of the following is not an attribute of the Agile Manifesto?
- A. Promoting collaboration
  - B. Expecting changes to the product backlog
  - C. Documenting how the code is to be developed
  - D. Accepting tradeoffs with the vendor
16. Elizabeth is the project manager of an XP project. Her manager stops by to check on the progress and notices that the developers are working in groups of two rather than individually. What is this approach called?
- A. Pair programming
  - B. Pared programming
  - C. People-People Programming
  - D. P2P (Programmer-to-Programmer)
17. Jane is a senior project manager in your company. Wally is a new project manager who is not familiar with the Scrum methodology. Jane explains the five Scrum values to Wally. Which one of the following is not one of the five values of Scrum?
- A. Commitment
  - B. Focus
  - C. Respect
  - D. Innovation
18. Erin is a new project manager who is working on a Scrum project. She's confused on the difference between a sprint review and a sprint

retrospective. What's the difference?

- A. Sprint reviews are demonstrations of the work completed in the sprint. Sprint retrospectives are demonstrations of all the compiled work completed in the project.
  - B. Sprint review are for lessons learned. Sprint retrospectives are for product demonstrations.
  - C. Sprint reviews are for product demonstrations. Sprint retrospectives are for lessons learned.
  - D. Sprint reviews discuss what's worked in the sprint. Sprint retrospectives are done at the end of the project for a lessons learned opportunity.
19. You are the project manager of the BNK Project for your organization. This project is utilizing the XP framework. What is your title in this XP project?
- A. Project manager
  - B. Product manager
  - C. Coach
  - D. Team leader
20. Your organization uses the Lean agile project management approach. One of the principles of Lean is to remove waste. Which one of the following is an example of waste in a Lean project that should be removed?
- A. WIP
  - B. Bottleneck identification
  - C. Motion
  - D. Colocation

## Questions and Answers

1. You are the agile project manager for your organization and your current project is to manage a team developing software that will affect the business practices of the organization. When working on an agile project, processes, tools, documentation, and plans are

necessary. However, which of the following should be the initial focus?

- A. Scope of the project
- B. People involved in the project
- C. The individuals and interactions involved
- D. Definition of success as defined by the project manager

C. While processes and tools will likely be necessary on the project, the focus of the agile team's attention should be on the individuals and interactions involved. Projects are accepted by people, people debate scope, and people negotiate the definition of done. Focusing early on developing the individuals involved in the project and emphasizing productive and effective interactions help set up a project for success.

A is incorrect because the scope of the project will likely change throughout the project. B is incorrect because this choice isn't the best answer. People involved in the project can include all the stakeholders, rather than only interactions of the individuals involved. D is incorrect because although the definition of success is important, it's not the initial focus of the project manager.

2. A diverse agile team has been assembled by upper management, and there is confusion about the requirements and definition of success of the project. What might have been a better method of creating the team?

- A. Select a person from each team with interest in the project
- B. Allow a self-organizing team from the people that helped create the requirements and definition of success
- C. Have the business partner select the members she wants on the project
- D. Have the business partner hire a team of contractors that have to be "sold" on the project

B. A self-organizing team composed of the people who created the requirements and defined success has a higher level of ownership and pride in the requirements and design, so the members don't have to be "sold" on the project. Ideas that come from outside resources need to

be sold to the team for the implementation to be successful, which sometimes creates a challenging task.

A is incorrect because although people on teams that were not part of the requirements gathering may have more merit on paper, they may want to implement the project differently than what was originally envisioned. C is incorrect because this solution creates the same problem of choosing people who are already invested in the value and understanding of the project goals. D is incorrect because it's best to utilize internal resources that already understand the project goals rather than to hire contractors who have to be sold on the value of the project.

3. What is one item that should be accomplished during a sprint planning meeting?

- A. The product owner shares the updated backlog, and the team discusses it to ensure a shared understanding.
- B. Three questions—what have I accomplished?, what do I plan to accomplish?, and are there any roadblocks?—are answered by each participant.
- C. The product owner decides if the product is done.
- D. The scope and costs of the project are renegotiated.

A. The product owner should share the updated backlog items and ensure the entire team has a good understanding of how to move forward.

B is incorrect because the questions regarding accomplishments and roadblocks are answered during Daily Scrums to uncover any obstacles. C is incorrect because the sprint planning meeting is not where the project's success is discussed. D is incorrect because the scope of the project is based on the prioritized requirements.

4. A good practice in keeping a project on track is to minimize waste. Which of the following could be eliminated from a project to maximize value?

- A. Daily meetings
- B. Unnecessary features
- C. Testing

**D. Sprint reviews**

**B.** In addition to eliminating the introduction of unnecessary features, value can be maximized by eliminating partially done work, delays, extra processes and features, task switching, waiting, moving information or a deliverable, defects, and handoffs.

A, C, and D are incorrect because daily meetings, testing, and sprint reviews are just a few of the activities required for a successful project.

5. Tom is the project manager for his organization and he's educating the project team and key stakeholders about Scrum. Some of the team members are confused about the activities that happen after the sprint review. What activity should Tom indicate is completed after the sprint review?

- A.** Product backlog refinement
- B.** Sprint planning meeting
- C.** Daily Scrum
- D.** Sprint retrospective

**D.** After a sprint review but before the sprint planning meeting, a sprint retrospective should be held to gather lessons learned and look for opportunities for improvement. This allows the team to consider the owner's feedback and implement improvements before the next sprint.

A is incorrect because product backlog refinement is done in product refinement meetings. B is incorrect because sprint planning meetings happen after the product refinement meeting. C is incorrect because the Daily Scrum is hosted every day at the same time and same location.

6. Samantha is the ScrumMaster for her organization and she's working with the team and the product owner to refine the product backlog. What is the role of the team in this meeting?
- A.** Prioritize the work items
  - B.** Add features to the project backlog
  - C.** Estimate and refine the work items

#### D. Identify fixes

C. The team is responsible for estimating and refining work items. Each time the team refines their estimates with a higher level of detail, the product owner might need to adjust the priority of those items.

A is incorrect because the product owner and the team collaborate on prioritizing the requirements; ultimately, the prioritization is the responsibility of the product owner. B is incorrect because the team doesn't add features to the backlog. D is incorrect because the team doesn't identify fixes to the project in the refinement of the product backlog.

7. Which of the following describes how Kanban differs from agile?

- A. Kanban teams plan their work in sprints or iterations.
- B. Kanban teams work on a project as a whole.
- C. Kanban teams employ a pull system.
- D. There are no WIP limits in Kanban.

C. The main difference is that Kanban teams employ a pull system, which means that when an item of work is completed, it triggers a pull to bring in the next item in the queue to work on. Kanban teams also work off a Kanban board that displays columns of processes, each with a work in progress (WIP) limit.

A is incorrect because agile teams, not Kanban teams, work in sprints before moving on to the next sprint backlog. B is incorrect because Kanban teams don't work on the whole project at once, but in chunks of requirements. D is incorrect because there is a WIP limit in Kanban.

8. Pat has been selected to lead the RGW Project with Scrum methodologies. The project team is excited about this decision. Select which trait has made the team happy about this decision.

- A. Pat likes to work within the box.
- B. Pat has been with the company for 12 years.
- C. Pat is honest and explains why decisions are made.
- D. Pat will lead according to the project plan.

**C.** Because Pat is honest and will communicate to the team the reasons for his decisions, he is a suitable ScrumMaster and will be less focused on command and control and more focused on being a servant leader.

A is incorrect because agile calls for flexibility and adaptability in a project. B is incorrect because Pat may be with the company for many years and may be very competent, but may not know enough about the project to move it to success. D is incorrect because the leader must be able to accept changes and be willing to adjust plans.

**9.** You are the project manager of the JLK Project utilizing Scrum.

Several stakeholders have lost interest in the project and rarely attend meetings, offer input, or give feedback. What is a good practice to avoid this pitfall going forward?

- A.** Making project meetings mandatory
- B.** Meeting with each business partner on a one-on-one basis
- C.** Proving that everyone's ideas have value and taking advantage of small-scale experiments
- D.** Sticking strictly to the project plan

**C.** Allowing stakeholders to suggest new ideas, and then giving them a chance to experiment with new concepts, proves that everyone's ideas have value. Nothing is more discouraging than having a good idea disregarded. Keeping stakeholders engaged allows the opportunity that agile projects present for small-scale, localized experiments in a supportive, low-risk environment.

A is incorrect because mandatory meetings won't bolster stakeholder engagement. B is incorrect because meeting with each business partner one-on-one may be a good way to communicate, but it's not the best choice available. D is incorrect because agile plans change based on the product backlog.

**10.** You happen to bump into a business partner of the project you are working on, and he asks you how many defects were found in the prior week. Since you don't know the exact answer, what should you do?

- A.** Take a guess

- B. Tell the business partner you will send an e-mail to him with the information when you get back to your desk
- C. Take him into the team area, where much information regarding the project is displayed
- D. Ask the business partner to call the team leader to get a correct answer

C. A core task of the agile leader is to be transparent, not only about progress, but also about issues and roadblocks. It is normal to walk into an agile team's area and see graphs showing velocity, defect rates, and results of retrospectives including what is working well and what needs improvement. When the leader is open and honest, it fosters openness where people can be less guarded and focus on improvements.

A is incorrect because guessing isn't an accurate or transparent way to communicate the project status on defects. B is incorrect because e-mailing the answer may be viable, but it's not the best way to be open and transparent about the project. D is incorrect because asking the business partner to call the project team lead can be a disruption and doesn't provide the readily available information.

11. The agile team you are working with encourages each other to suggest innovative ideas. Most ideas are tested to determine whether they will be successful or may not work very well. How is this accomplished without delaying the project?
- A. The new ideas are only tested if there is sufficient time in the project plan.
  - B. The ideas are tested during short iterations and end before the next iteration.
  - C. Only one idea is accepted by the leader during an iteration.
  - D. Only the leader determines what ideas to test and what to put aside.
- B. New processes or techniques are tested during short iterations, enabling the team to either implement the successful idea or not, and before the next iteration. This is part of the concept of being

innovative, and if necessary, failing fast, learning from the experiment, and moving on.

A is incorrect because additional time doesn't need to be accounted for when iterations are typically between two and four weeks, and a decision will be made quickly. C is incorrect because there is no limit to good ideas and the team should decide whether to move forward with a concept. D is incorrect because the team is self-led and can determine what ideas should be tried and implemented.

12. What does the term *emergent leadership* mean in an agile environment?
- A. A new leader is assigned for each iteration.
  - B. A team member takes over the leadership role.
  - C. A team member tries a new approach after getting approval from the team.
  - D. A leader isn't in place until the team selects one of the team members.
  - C. An emergent leader is a team member who takes the initiative to try a new process or idea once they have the team's approval.
- A is incorrect because emergent leadership allows a leader to emerge at any point in the project, not by assignment. B is incorrect because emergent leadership is not about a formal role and assignment as leader. D is incorrect because leaders emerge based on conditions in the project, not by assignment or voting.
13. How is an agile team better prepared to suggest solutions to a business request versus a team that is not using an agile methodology?
- A. The agile team is made up of business people.
  - B. The agile team worked with the business partner to prepare the project plan.
  - C. The agile team and business partners work together throughout the project life cycle.
  - D. The business partners review statuses and ask for recommendations.

C. Working with business partners almost daily throughout the project life cycle is far more valuable and collaborative than meeting occasionally. The team hears what the business would like the results to be, and meeting face-to-face is far better than reading requirements, documents, and e-mails, or even a conference call. Another benefit of daily interactions is that the business partners will learn what task or activity might be far more expensive than another solution or take far longer than they expect.

A is incorrect because the team is made up of developers, not just business people. B is incorrect because while the team collaborates with the business partner, the team creates a plan based on the sprint backlog. D is incorrect because the business partners may review statuses and ask for recommendations, but this isn't the best option available. For your PMI-ACP exam, you must always choose the best answer, even if more than one answer is acceptable.

14. As a PMI-ACP candidate you need to recognize the terms and techniques utilized in agile projects. Which one of the following is the best example of an empirical process?

A. Following a plan  
B. Observing results and adapting the code  
C. Making collaborative decisions  
D. Working alone on a project requirement

B. Empirical processes require observation, creativity, and trial and error, so observing results and adapting the code is the best answer. A is incorrect because following a plan describes a defined process. C is incorrect because making collaborative decisions isn't an empirical process. D is incorrect because working alone can involve utilizing either an empirical process or a defined process.

15. You are the agile project manager for your organization and you're helping your development team better understand agile. You have reviewed the Agile Manifesto with your team. Which one of the following is not an attribute of the Agile Manifesto?

A. Promoting collaboration  
B. Expecting changes to the product backlog

- C. Documenting how the code is to be developed
- D. Accepting tradeoffs with the vendor

C. One of the values of the Agile Manifesto is that we value working software over comprehensive documentation. Documentation should be light and minimally sufficient.

A is incorrect because team collaboration is an aspect of the Agile Manifesto. B is incorrect because responding to changes over following a plan is also a value of the Agile Manifesto. D is incorrect because customer collaboration over contract negotiation is a value of the Agile Manifesto.

16. Elizabeth is the project manager of an XP project. Her manager stops by to check on the progress and notices that the developers are working in groups of two rather than individually. What is this approach called?

- A. Pair programming
- B. Pared programming
- C. People-People Programming
- D. P2P (Programmer-to-Programmer)

A. XP utilizes pair programming where one developer codes and the second developer checks the code.

B, C, and D are incorrect choices as these are not valid descriptions of pair programming in XP.

17. Jane is a senior project manager in your company. Wally is a new project manager who is not familiar with the Scrum methodology. Jane explains the five Scrum values to Wally. Which one of the following is not one of the five values of Scrum?

- A. Commitment
- B. Focus
- C. Respect
- D. Innovation

D. Innovation, while encouraged, is not one of the five values of Scrum. The five values are commitment, focus, openness, respect, and courage.

A, B, and C are incorrect because these choices are part of the five values of Scrum.

- 18.** Erin is a new project manager who is working on a Scrum project. She's confused on the difference between a sprint review and a sprint retrospective. What's the difference?
- A.** Sprint reviews are demonstrations of the work completed in the sprint. Sprint retrospectives are demonstrations of all the compiled work completed in the project.
  - B.** Sprint review are for lessons learned. Sprint retrospectives are for product demonstrations.
  - C.** Sprint reviews are for product demonstrations. Sprint retrospectives are for lessons learned.
  - D.** Sprint reviews discuss what's worked in the sprint. Sprint retrospectives are done at the end of the project for a lessons learned opportunity.
  - C.** Sprint reviews are for product demonstrations. Sprint retrospectives are for lessons learned.
- A, B, and D are incorrect descriptions of the sprint reviews and sprint retrospectives.
- 19.** You are the project manager of the BNK Project for your organization. This project is utilizing the XP framework. What is your title in this XP project?
- A.** Project manager
  - B.** Product manager
  - C.** Coach
  - D.** Team leader
  - C.** A project manager in an XP environment is called a coach.
- A, B, and D are incorrect as XP calls the project manager a coach, not a project manager, product manager, or team leader.
- 20.** Your organization uses the Lean agile project management approach. One of the principles of Lean is to remove waste. Which one of the following is an example of waste in a Lean project that should be removed?

- A.** WIP
  - B.** Bottleneck identification
  - C.** Motion
  - D.** Colocation
- C.** Motion is a waste in Lean projects. Moving items from person to person is motion and that takes time and creates waste. If there's not a clear workflow of how items move through the project processes, then there's waste.  
A is incorrect because work in progress (WIP) is needed in Lean and is not waste. B is incorrect because bottlenecks are wasteful, but the identification of a bottleneck is not waste. D is incorrect because colocation is a desirable aspect for the project team.

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**Test-driven development** Test-driven development begins with the developers writing the tests before writing the code. They write the tests with an understanding of what it'll take for the code to pass the tests. Once the tests have been written, the development team writes the code to pass the tests. If the code doesn't pass, then the developers make adjustment to the code and run the tests again, and repeat the process until the code passes. Once the code passes, the developers refactor the code and try the test once more.

**Theory of constraints** The theory of constraints posits that there's always at least one constraint that is holding back the system, or project management approach, from reaching its maximum potential. A constraint is anything that limits your options: time, costs, scope requirements, people, software, hardware, and any number of other factors. You attack the constraint that is most restrictive until it's no longer the most restrictive constraint and then repeat the process with the next most restrictive constraint.

**Usability testing** Usability testing is an approach that observes participants using the software. The participants try to complete certain tasks in the software while the project team or a few developers watch, listen, and take notes. The goal is to identify usability problems, collect data, and gauge how satisfied the users are with the software.

**Voting with dots** Voting with dots, sometimes called multivoting, is a requirements prioritization approach where participants are given a list of requirements and vote on which ones they think deserve the highest priority by labeling them with dots, checkmarks, or even little sticky notes.

**WIP limit** WIP means work in progress. Kanban boards, task boards, and any hybrid approach to agile project management should set a limit on the number of requirements in the WIP.

## Questions

1. You have been identified as a team member on a project. When you begin gathering requirements, what is a logical first question that

should be asked and answered?

- A.** How much is in the budget?
  - B.** How long will the project last?
  - C.** What is the business value?
  - D.** How many team members will participate?
2. You are the project manager of an agile project. An agile team's focus is to maximize value. When the team needs to make a decision, what question should be the first to be asked?
- A.** How long will it take to test?
  - B.** Will the decision made derail the project?
  - C.** What will it cost in man hours?
  - D.** What is the value to the customer?
3. Most agile software developers use continuous integration tools to test code. These tools tell them whether the code passed or failed by communicating what status?
- A.** Red-Yellow-Green
  - B.** Pass/Fail
  - C.** Go/No Go
  - D.** Red-Green-Refactor
4. The agile team for which you are the project manager has determined several key values to deliver to the customer. How should these tasks be tackled by the team?
- A.** The tasks should be prioritized, tested, and delivered incrementally.
  - B.** The tasks should be delivered while in progress, whether tested or not, to gather feedback.
  - C.** The tasks should be delivered according to the project plan.
  - D.** All deliverables should be presented at the end of the project.
5. The agile team for which you are the project manager has identified the highest-value features of the project and wants to deliver them as soon as possible. Why is this a good idea?

- A. It gets the features out of the way.
  - B. The longer the project goes on, the value of a feature may be compromised.
  - C. Delivering the most intense tasks could shorten the project duration.
  - D. It proves the team's understanding of value.
6. As a member of the PMO, you have been analyzing upcoming projects and have identified one particular project that you believe project teams will push back on. You understand this project is meant to implement safety standards for an off-shore manufacturing plant. Some project teams may not understand the value of this project. How do you avoid a long, drawn-out process of getting this project approved to move forward?
- A. Attempt to make the teams understand why it is important
  - B. Have the project outsourced to avoid the pushback
  - C. Make the project mandatory
  - D. Take the project off the list of projects for the year and try to implement it at a different time
7. You have been tasked to evaluate the financial metrics of a potential project. You plan to evaluate the percent of the benefit of the investment to the money invested. This is which of the following financial assessment metrics?
- A. Net present value (NPV)
  - B. Return on investment (ROI)
  - C. Internal rate of return (IRR)
  - D. Future value (FV)
8. A great visual to see your project's progress is an earned value management (EVM) chart. Knowing that an agile project is different than a non-agile project in that the initial plan is likely to change, you still see a benefit in using this visual since an EVM chart is a forward-looking indicator and could be used to assist in predicting which of the following?

- A. Number of team members required
  - B. Completion dates and final costs
  - C. Quality of deliverables
  - D. Timings to begin new iterations
9. When working on an agile project, “risk” most likely means something different than it does on a traditional project. Agile sees risks as potential events or circumstances that could have a negative impact on the project, whereas a non-agile project may define a risk as a “good risk” that could present opportunities for the project. How does an agile project deal with risk?
- A. The team identifies risks and then tackles them at the end of the project so that they can all be addressed at once in a separate task.
  - B. The iterative nature of agile allows the team to schedule the high-risk activities early in the project so that they are tackled sooner rather than later.
  - C. The team keeps the risk-finding results within the team so that the team can address the risk without any outside interference.
  - D. Early in the project planning, to ensure that the project won’t be cancelled, the team does not relate risks to value, so that there is no chance of showing how the project could be delayed or cost more than planned.
10. The agile team you are working with has just finished an iteration and all tasks are completed. You are ready to move to the next iteration. How do you determine which iteration should be next?
- A. The team follows the project plan developed early in the project.
  - B. The PMO has already determined how the project should progress.
  - C. The customer continuously prioritizes the backlog.
  - D. The team leader determines the next iteration.
11. While meeting with the customers or business owners, they introduce several pieces of new functionality into the priority list. Since the

deadline date cannot be moved out, how should the team react to these additions?

- A. Stand firm and tell the customers the project will not be delivered on time
  - B. Be sure the customers understand that lower priority tasks or functionality may drop off the project completely
  - C. Cancel all vacations and days off and let the team know there will be many long days of work ahead to deliver the project on time
  - D. Agree with the customers to have all new items put into a separate category that will be completed if time allows
12. You are working with an agile team that is developing and delivering a software solution to your company's HR group. Several minimum viable product (MVP) releases are scheduled throughout the duration of the project. Why is this a good idea?
- A. To show the progress being made by the development team
  - B. To enable the users to test the product for the development team
  - C. To enable the business to begin to get value from the project prior to the project ending
  - D. To shorten the duration of the project
13. The agile team you are working with utilizes a whiteboard and writes tasks on sticky notes. Initially, you feel like they've taken a step backward by not utilizing an electronic project planning tool. After a period of time, you come to value the whiteboard system more and more. Why do you think this method is beneficial?
- A. It is easy to disregard a sticky note and bypass a task.
  - B. No one takes sticky notes seriously.
  - C. It is visual, and at a glance shows the progress of the project.
  - D. Many people have access to the board and can move notes to their advantage.
14. Agile teams practice frequent verification and validation during and at the end of each iteration. Which one of the following is not a benefit of this method?

- A. It enables the team to catch mistakes and mismatched expectations early.
  - B. It keeps everyone busy.
  - C. It is easy to manage since there are multiple feedback loops.
  - D. It reduces project cost overruns since mistakes are found early prior to additional tasks being built upon a faulty foundation.
15. You are on an agile software implementation project with a very short deadline. How do agile teams shorten the time between identifying a defect and resolving the defect?
- A. Daily build and smoke tests
  - B. Continuous integration
  - C. Usability testing
  - D. Exploratory testing
16. With all the different methods of testing, either a software or product deliverable, when should the team determine what method of testing should be performed?
- A. When the first iteration is complete
  - B. When a deliverable is available for testing
  - C. Before the product is developed
  - D. At the end of the project
17. You've just completed a requirements-gathering session for an agile software implementation team. It became apparent that an outside vendor team must be brought onto the project. You are working with the legal department to draw up a contract for the vendor. What type of contract is best for an agile project?
- A. A contract that accommodates changes
  - B. A fixed-price contract
  - C. A graduated fixed-price contract
  - D. A time and materials contract
18. Approximately midway through an agile project, the business partner asks, "If we stick to the agreed-upon scope, when do you think the

project will be done, and how much will it cost?" How will you gather the information necessary to answer the business partner?

- A. By reviewing the Kanban board
  - B. By checking progress on the backlog
  - C. By analyzing the key performance indicators
  - D. By having a team meeting and logging everyone's status
19. You are attending the kick-off meeting with the agile team and the business owners. The business owners have decided to use MoSCoW as a priority tool. What are the categories for this method?
- A. Priority 1, Priority 2, Priority 3, Priority 4
  - B. Low, medium, high
  - C. Must have, should have, could have, would like to have
  - D. Point method, assigning the most points to the highest priority item
20. Agile teams use different methods to manage work in progress (WIP). What is a drawback of not having limits to WIP?
- A. There is typically enough work to keep everyone busy.
  - B. It keeps the project moving forward.
  - C. Too many tasks are taken on all at once.
  - D. Fail to fully utilize everyone's availability.

## Questions and Answers

1. You have been identified as a team member on a project. When you begin gathering requirements, what is a logical first question that should be asked and answered?
    - A. How much is in the budget?
    - B. How long will the project last?
    - C. What is the business value?
    - D. How many team members will participate?
- The reason projects are carried out is to generate business value. The business risk and the impact of not undertaking the project must

be considered.

A, B, and D are incorrect because the budget, duration, and member participation will be determined once the value-driven delivery is identified.

2. You are the project manager of an agile project. An agile team's focus is to maximize value. When the team needs to make a decision, what question should be the first to be asked?

- A. How long will it take to test?
  - B. Will the decision made derail the project?
  - C. What will it cost in man hours?
  - D. What is the value to the customer?
- D.** The focus on delivering value drives many of the activities and decisions on an agile project. This is the crucial goal of many practices in the agile toolkit.

A, B, and C are incorrect because answers to questions regarding duration, impact, and cost of the decision will be determined after the value to the customer is defined.

3. Most agile software developers use continuous integration tools to test code. These tools tell them whether the code passed or failed by communicating what status?

- A. Red-Yellow-Green
  - B. Pass/Fail
  - C. Go/No Go
  - D. Red-Green-Refactor
- D.** The process of writing a test that initially fails, adding code until the test passes, then refactoring the code is known as Red-Green-Refactor (or Red-Green-Clean).

A, B, and C are incorrect because CI tools do not use these terms to communicate status.

4. The agile team for which you are the project manager has determined several key values to deliver to the customer. How should these tasks be tackled by the team?

- A. The tasks should be prioritized, tested, and delivered incrementally.
- B. The tasks should be delivered while in progress, whether tested or not, to gather feedback.
- C. The tasks should be delivered according to the project plan.
- D. All deliverables should be presented at the end of the project.

A. One of the most important agile themes ties together many fundamental concepts, such as prioritization, incremental delivery, and test-driven development. This is an essential component of agile methods, and lends credence to the early delivery of business value. B is incorrect because tasks should never be delivered before being tested. C is incorrect because agile projects don't utilize a project plan like predictive projects. D is incorrect because presenting all deliverables at the end of a project is setting up the entire project for failure.

- 5. The agile team for which you are the project manager has identified the highest-value features of the project and wants to deliver them as soon as possible. Why is this a good idea?

- A. It gets the features out of the way.
- B. The longer the project goes on, the value of a feature may be compromised.
- C. Delivering the most intense tasks could shorten the project duration.
- D. It proves the team's understanding of value.

B. The longer high-value features take to deliver, the longer the horizon becomes for risks that can reduce value. Maximize success by delivering as many high-value features before things change. Value-driven delivery means making decisions that prioritize the value-added activities and risk-reducing efforts of the project, then accomplishing the tasks based on the priorities.

A is incorrect because the goal isn't to simply get features out of the way, but to deliver value based on the prioritized backlog. C is incorrect because delivering intense tasks first doesn't support completing the requirements with the most value and won't

necessarily shorten the project duration. D is incorrect because while understanding value is important, this doesn't best answer the question as delivering value.

6. As a member of the PMO, you have been analyzing upcoming projects and have identified one particular project that you believe project teams will push back on. You understand this project is meant to implement safety standards for an off-shore manufacturing plant. Some project teams may not understand the value of this project. How do you avoid a long, drawn-out process of getting this project approved to move forward?
  - A. Attempt to make the teams understand why it is important
  - B. Have the project outsourced to avoid the pushback
  - C. Make the project mandatory
  - D. Take the project off the list of projects for the year and try to implement it at a different time
7. You have been tasked to evaluate the financial metrics of a potential project. You plan to evaluate the percent of the benefit of the investment to the money invested. This is which of the following financial assessment metrics?
  - A. Net present value (NPV)
  - B. Return on investment (ROI)
  - C. Internal rate of return (IRR)
  - D. Future value (FV)

B. ROI measures the amount of return on an investment relative to the investment's cost. A is incorrect because NPV is defined as the

present value of cash flow over a series of time periods. The drawback to using the NPV approach is that designating what the inflation rate and interest rate will be in the future is just a best guess. C is incorrect because IRR is the discount rate at which project revenues and project costs equal zero. When a company is selecting which project to invest in, it will calculate the expected rate of return for each project and select the one that is projected to yield the highest IRR. D is incorrect because future value determines what a present amount of funds today is worth in the future.

8. A great visual to see your project's progress is an earned value management (EVM) chart. Knowing that an agile project is different than a non-agile project in that the initial plan is likely to change, you still see a benefit in using this visual since an EVM chart is a forward-looking indicator and could be used to assist in predicting which of the following?
  - A. Number of team members required
  - B. Completion dates and final costs
  - C. Quality of deliverables
  - D. Timings to begin new iterations

**B.** EVM looks forward, trying to predict completion dates and final costs, in addition to scope, schedule, and cost performance.  
A and D are incorrect because the number of team members and when iterations will start and stop are fluid dimensions and not easily tracked. Answer C is incorrect because quality of deliverables can be tracked, but not in an EVM chart.
9. When working on an agile project, "risk" most likely means something different than it does on a traditional project. Agile sees risks as potential events or circumstances that could have a negative impact on the project, whereas a non-agile project may define a risk as a "good risk" that could present opportunities for the project. How does an agile project deal with risk?
  - A. The team identifies risks and then tackles them at the end of the project so that they can all be addressed at once in a separate task.

- B. The iterative nature of agile allows the team to schedule the high-risk activities early in the project so that they are tackled sooner rather than later.
- C. The team keeps the risk-finding results within the team so that the team can address the risk without any outside interference.
- D. Early in the project planning, to ensure that the project won't be cancelled, the team does not relate risks to value, so that there is no chance of showing how the project could be delayed or cost more than planned.

**B.** Iterative development allows high-risk work to be addressed early in the project, to avoid problems further down the road. Agile teams engage the development team, business partners, customers, and other relevant stakeholders to draw on lessons learned, risk logs, and likely risks for the project from multiple views. Risks are directly related to the value of the project, since negative risks will most likely add time, which relates to the cost of the project.

A is incorrect because risks are reserved for the end of the project; in fact, high-risk items are often prioritized to determine project feasibility. C is incorrect because outside subject matter experts and stakeholders are often needed to contribute to risk management. D is incorrect because risks are assessed as anti-value, not ignored. A failure to address risk can actually cause project costs to increase.

10. The agile team you are working with has just finished an iteration and all tasks are completed. You are ready to move to the next iteration. How do you determine which iteration should be next?
- A. The team follows the project plan developed early in the project.
  - B. The PMO has already determined how the project should progress.
  - C. The customer continuously prioritizes the backlog.
  - D. The team leader determines the next iteration.
- C.** The team works through a list of items that have identifiable value and have been prioritized by the customer.
- A is incorrect because agile teams understand that the plan developed in the beginning of the project is fluid and is subject to change, so

trying to follow an early developed plan is probably not feasible. B is incorrect because the project management office doesn't determine how the project should progress. D is incorrect because the team leader doesn't determine the next iteration.

11. While meeting with the customers or business owners, they introduce several pieces of new functionality into the priority list. Since the deadline date cannot be moved out, how should the team react to these additions?
  - A. Stand firm and tell the customers the project will not be delivered on time
  - B. Be sure the customers understand that lower priority tasks or functionality may drop off the project completely
  - C. Cancel all vacations and days off and let the team know there will be many long days of work ahead to deliver the project on time
  - D. Agree with the customers to have all new items put into a separate category that will be completed if time allows

B. The agile team can certainly accept changes either early or late during the project duration because of the iteration methodology. But the team still needs to work within the timeframe and budget of the project, so the customer must understand that although the new pieces of functionality can be added to the project, it can only be done at the expense of a lower-priority work item. Agile teams are committed to being “agile,” so dictating timeframes or lack of work/life balance are not part of the agile methodology. Project managers must not overwork the project team to maintain the pace of the project work. A is incorrect because lower-priority requirements should be dropped from the project scope to accommodate higher-priority items to balance the fixed constraints of time and costs. C is incorrect because it's poor management to cancel vacation days and time off as this will affect team morale and team support of the project. D is incorrect because requirements should be prioritized into the product backlog, not a separate list of requirements. The existing product backlog will already map to the fixed time constraint.
12. You are working with an agile team that is developing and delivering a software solution to your company's HR group. Several minimum

viable product (MVP) releases are scheduled throughout the duration of the project. Why is this a good idea?

- A. To show the progress being made by the development team
- B. To enable the users to test the product for the development team
- C. To enable the business to begin to get value from the project prior to the project ending
- D. To shorten the duration of the project
- C. Incremental releases can allow for some ROI while the team develops the remaining functionality.

A is incorrect because releasing the MVP is to deliver value, not to show the project progress is being made. B is incorrect because the software should be fully tested and functional before being released to the user community. D is incorrect because utilizing MVP releases will not shorten the duration of the project, since the MVPs are defined in the project life cycle.

13. The agile team you are working with utilizes a whiteboard and writes tasks on sticky notes. Initially, you feel like they've taken a step backward by not utilizing an electronic project planning tool. After a period of time, you come to value the whiteboard system more and more. Why do you think this method is beneficial?

- A. It is easy to disregard a sticky note and bypass a task.
  - B. No one takes sticky notes seriously.
  - C. It is visual, and at a glance shows the progress of the project.
  - D. Many people have access to the board and can move notes to their advantage.
  - C. Since the whiteboard is usually located in the team's area, meetings can be held around the whiteboard and the team's WIP is easily visible along with any tasks that may be falling behind. It is also valuable to the business partner to see a growing collection of completed work. This is an example of a high-touch/low-tech tool.
- A is incorrect because the whiteboard approach will utilize a pull system to pull the next prioritized item into WIP, not bypass the item. B is incorrect because agile teams consistently use sticky notes as part of the high-touch/low-tech tool. D is incorrect because the team

follows the rules of the pull system and does not reorder the requirements or identified tasks.

14. Agile teams practice frequent verification and validation during and at the end of each iteration. Which one of the following is not a benefit of this method?
- A. It enables the team to catch mistakes and mismatched expectations early.
  - B. It keeps everyone busy.
  - C. It is easy to manage since there are multiple feedback loops.
  - D. It reduces project cost overruns since mistakes are found early prior to additional tasks being built upon a faulty foundation.
- B.** Busywork does not add value to the project.

A, C, and D are incorrect because a key practice on an agile team is frequent verification and validation. Having a gap between requested and delivered features will lead to rework, project delays, and cost overruns. It is important to discover the discrepancy early to adjust the direction of the development. This method enables the team to catch mistakes and mismatched expectations early, is easy to manage because it provides multiple feedback loops, and reduces project cost overruns since mistakes are found before tasks are built upon a faulty foundation.

15. You are on an agile software implementation project with a very short deadline. How do agile teams shorten the time between identifying a defect and resolving the defect?
- A. Daily build and smoke tests
  - B. Continuous integration
  - C. Usability testing
  - D. Exploratory testing
- B.** Continuous integration executes far more tests per day than the other options, and less time passes before a problem is identified.
- A is incorrect because daily build and smoke tests don't shorten the resolution of a defect. C is incorrect because usability testing requires planning and participants to test the software. D is incorrect

because exploratory testing allows testers to explore and test different facets of the software. Continuous integration is done several times throughout the day.

16. With all the different methods of testing, either a software or product deliverable, when should the team determine what method of testing should be performed?
- A. When the first iteration is complete
  - B. When a deliverable is available for testing
  - C. Before the product is developed
  - D. At the end of the project
- C. If acceptance tests are designed before the development of a deliverable, you are more likely to end up with tests for the majority of the work.
- A, B, and D are incorrect because determining the method of testing after the project has started means you are trying to fit the developed product into a test scenario.
17. You've just completed a requirements-gathering session for an agile software implementation team. It became apparent that an outside vendor team must be brought onto the project. You are working with the legal department to draw up a contract for the vendor. What type of contract is best for an agile project?
- A. A contract that accommodates changes
  - B. A fixed-price contract
  - C. A graduated fixed-price contract
  - D. A time and materials contract
- A. Agile contracts need to accommodate changes that take into account the difficulty of defining the requirements in advance.
- B, C, and D are incorrect because agile contracts can also be used with fixed-price, graduated-fixed price, and time and materials contracts, but with the understanding that they have some sort of limits, whether it be a fixed timeframe or dollar amount.
18. Approximately midway through an agile project, the business partner asks, "If we stick to the agreed-upon scope, when do you think the

project will be done, and how much will it cost?" How will you gather the information necessary to answer the business partner?

- A. By reviewing the Kanban board
  - B. By checking progress on the backlog
  - C. By analyzing the key performance indicators
  - D. By having a team meeting and logging everyone's status
- B.** The most reliable metrics to use are the key performance indicators (KPIs). This will give you the rate of progress, remaining work to be completed, the likely completion date, and the likely costs remaining.

A, C, and D are incorrect because the Kanban board, backlog, and statuses will give you only bits of information, whereas the KPIs will provide a broader picture of the project at any given time.

19. You are attending the kick-off meeting with the agile team and the business owners. The business owners have decided to use MoSCoW as a priority tool. What are the categories for this method?
- A. Priority 1, Priority 2, Priority 3, Priority 4
  - B. Low, medium, high
  - C. Must have, should have, could have, would like to have
  - D. Point method, assigning the most points to the highest priority item

**C.** The MoSCoW method of prioritization labels tasks as must have, should have, could have, and would like to have but not at this time. Any method can be used on an agile project, but the MoSCoW labels are clear in many members' opinions.

A, B, and D are incorrect because they are not the MoSCoW categories. MoSCoW is a good method to avoid the tendency to label too many items as priority 1 or high priority or the most points assigned, which becomes ineffective. A business partner will rarely ask for a new feature to be assigned a lower priority, because they know it most likely won't get done. While point systems can be effective, MoSCoW challenges the stakeholders to identify priorities rather than assigning points.

**20.** Agile teams use different methods to manage work in progress (WIP). What is a drawback of not having limits to WIP?

- A.** There is typically enough work to keep everyone busy.
- B.** It keeps the project moving forward.
- C.** Too many tasks are taken on all at once.
- D.** Fail to fully utilize everyone's availability.
- C.** Without limits on WIP, a project team may undertake too many different tasks at once.

A is incorrect because there is typically enough work for everyone to contribute. B is incorrect because not setting a limit on WIP can cause too many tasks to be in motion at one time. D is incorrect because setting the WIP limit doesn't prevent everyone from contributing, but encourages the idea of generalizing specialists.

**Wireframe** A wireframe is a simple, straightforward diagram that shows your project solution. Wireframes often address the different elements in the user interface, screen and system organization, navigation paths, user interface look and feel, and user interaction with the solution.

**Withdraw** One way to resolve a conflict, at least temporarily, is to withdraw from the situation and avoid further discussion. One party simply says, for example, “Let’s discuss this later after we’ve cooled off” and leaves the room. This method requires a healthy level of emotional intelligence.

## Questions

1. You are on an agile team that includes many stakeholders who have not worked with an agile project in the past. Several stakeholders have some valid concerns about some agile methods. How can you make them more comfortable with the process?
  - A. Explain that it has worked in the past
  - B. Tell the concerned stakeholders that this is how all future projects must be executed
  - C. Educate stakeholders, address their concerns, and keep them engaged
  - D. Manage their expectations
2. Why is it so important to incorporate multiple touchpoints with stakeholders before, during, and after iterations?
  - A. To hear about change requests and identify potential risks and issues
  - B. To inform all stakeholders of the development team’s direction
  - C. To demonstrate the team’s value with multiple meetings
  - D. So the stakeholders understand everyone is working hard
3. A new stakeholder has joined your team. He is having a hard time focusing on really engaging with the team since his daily responsibilities are taking a lot of time. You’ve spoken with the team member’s manager about this issue, but no solution has yet been proposed. What could the team do to help alleviate the problem?

- A. Pitch in to help the stakeholder get his daily job done
  - B. Overload the stakeholder so he can't work on his daily responsibilities until the weekend
  - C. Pay for a temp or contractor to take over his daily responsibilities to free him up to work on the project
  - D. Go to his boss and explain how this is creating problems for the team
4. How do agile project charters differ from non-agile project charters?
- A. Agile charters set forth high-level goals, whereas non-agile charters are very detailed.
  - B. Agile charters name team members, whereas non-agile charters define teams.
  - C. Agile charters define the definitive outcome of the project, whereas non-agile charters define the desired outcome.
  - D. Agile charters define a stable project plan, whereas non-agile charters outline a high-level project plan.
5. An essential discussion that should take place early in the project is the definition of “done.” Why is this critical?
- A. This allows team members to negotiate the meaning of “done” early in the project.
  - B. New tasks can be unveiled while discussing the meaning of “done.”
  - C. All stakeholders must understand fully what “done” means so there are no surprises at the last minute.
  - D. To continue to define the meaning of “done.”
6. During an agile team meeting, there seems to be a misunderstanding of the requirements of a screen being developed. A team member begins to draw a wireframe of the screen on the whiteboard. What is the purpose of the wireframe?
- A. To test the design
  - B. To determine what reports will be included in the output of the design

- C. To get a consensus regarding the content and flow of the design
  - D. To understand how long the design will take to develop
7. Agile teams very often create personas to help the team move forward in a project. Which of the following is the best description of a persona?
- A. A persona is a high-level discussion of requirements.
  - B. A persona helps the team empathize with the users of the solution.
  - C. A persona is a new role developed to engage the stakeholders.
  - D. A persona is an image that helps communicate what the result of the project is.
8. Which of the following is the preferred method of communication?
- A. E-mail
  - B. Instant messaging
  - C. Face to face
  - D. Conference calls
9. Your agile team leader encourages knowledge sharing at which of the following points of a project?
- A. When someone shows an interest in a task
  - B. At the end of an iteration
  - C. Throughout the entire project
  - D. At the end of the project
10. You are a new project manager in your organization and your manager has asked you to read the Agile Manifesto. Since working collaboratively is highlighted in several parts of the Agile Manifesto, you find that your leader fosters the practice of engaging stakeholders much more frequently than you have seen in the past. How is this beneficial?
- A. The team receives better input and ideas, develops better problem-solving skills, and becomes more willing to take ownership.
  - B. All stakeholders get to know each other better.

- C. The stakeholders stay in their swim lanes rather than being called out from overstepping.
  - D. The frequent meetings are a good break from heads-down work.
11. Which of the following is the definition of a workshop?
- A. A gathering where delays are explained
  - B. A meeting discussing why the last iteration was a success
  - C. A meeting discussing what progress has been made
  - D. A meeting defining activities and contributions
12. Why is it important for an agile leader to continuously improve their emotional IQ?
- A. Emotional intelligence enables the agile leader to manage their own emotions and others' emotions.
  - B. The leader's emotions have a direct impact on the deliverables.
  - C. Agile projects are often changing, so the leader should have the skills to gauge the productivity of the team.
  - D. The agile leader should continuously improve their IQ.
13. When your agile leader sends meeting invitations, the goals, rules, timing, and the meeting agenda are all clearly defined. Why is this practice highly beneficial?
- A. You know you can schedule another meeting 15 minutes after this one ends.
  - B. There is no ambiguity about why the meeting was scheduled.
  - C. You know that at least for this timeframe you won't have any phone calls.
  - D. You can ask another team member a question that they have not yet responded to.
14. A disagreement about a project requirement has been brewing on your team. You've noticed that the agile leader is not taking any action to resolve this disagreement. What might be the agile leader's reason for keeping their distance for now?
- A. The leader wants the people involved to try to resolve the difference themselves.

- B. The leader doesn't know the answer or where to find the answer.
  - C. The leader's friend is on one side of the disagreement.
  - D. The leader is waiting for the point at which the team blows up to intervene.
- 15. Since agile leaders are not project dictators, how are decisions made?
  - A. The most senior member of management makes the decisions.
  - B. The stakeholders collectively agree on and share decisions.
  - C. The business partners make decisions.
  - D. The development team typically makes decisions.
- 16. A decision needs to be made by the agile team. Someone on the team suggests saving time by skipping discussion and using a show of hands to indicate whether team members are for or against the decision. What would be the most legitimate reason to object to this decision-making approach?
  - A. You are concerned some members will vote for the cheapest way to resolve the issue.
  - B. You are concerned some members will vote for the fastest way to resolve the issue.
  - C. You are concerned some members will not vote for the decision you want.
  - D. You are concerned that there will be no ideas for a better alternative to the decision.
- 17. A decision needs to be made by the agile team. The team decides to go with the decision model of thumbs up/down/sideways. You can assume what the thumbs up and thumbs down indicate, but you've never seen the thumbs sideways vote. What does this mean?
  - A. Team members with thumbs sideways don't care either way.
  - B. Team members with thumbs sideways have a question that needs further discussion.
  - C. Team members with thumbs sideways can't make up their minds.

- D. Team members with thumbs sideways don't have enough knowledge to vote.
- 18. Why is it important that all stakeholders are involved in decision-making?
  - A. So they attend meetings
  - B. So they can tell their management it was their decision
  - C. So they are committed to the decision
  - D. So they don't condemn a decision that wasn't theirs
- 19. Your agile leader has invited all stakeholders, including customers and sponsors, to scheduled planning meetings. All of the following choices are valid reasons for this invitation except for which one?
  - A. To hear all their concerns
  - B. To be sure all priorities are being addressed by all involved in the project
  - C. To uncover issues
  - D. To determine success or failure of a project member
- 20. How does your agile team leader ensure that stakeholders stay engaged?
  - A. Replace the first person who is not staying engaged in the team to set precedence
  - B. Report anyone who is not staying engaged to the person's manager
  - C. Report on benefits or issues regarding specific stakeholder involvement in status reports
  - D. Don't invite anyone who is not staying engaged to subsequent meetings

## Questions and Answers

1. You are on an agile team that includes many stakeholders who have not worked with an agile project in the past. Several stakeholders have some valid concerns about some agile methods. How can you make them more comfortable with the process?

- A. Explain that it has worked in the past
  - B. Tell the concerned stakeholders that this is how all future projects must be executed
  - C. Educate stakeholders, address their concerns, and keep them engaged
  - D. Manage their expectations
- C. Once stakeholders show concern about the methods used on an agile project, the most effective way to put their fears to rest is to educate them and keep them involved in the project as it progresses. During an iteration, decisions are made with stakeholders' input, the team does some work, and when the iteration is coming to an end, the team gets back together with the stakeholders to show them the progress that was made. A and B are incorrect because telling stakeholders that this process has worked in the past or this is the way of the future will not allow them to buy into the process. Most people need to see it to believe it. D is incorrect because, although always a good idea, managing expectations is not the best way to get people to be more comfortable with the agile approach.

2. Why is it so important to incorporate multiple touchpoints with stakeholders before, during, and after iterations?
- A. To hear about change requests and identify potential risks and issues
  - B. To inform all stakeholders of the development team's direction
  - C. To demonstrate the team's value with multiple meetings
  - D. So the stakeholders understand everyone is working hard

A. Meeting with the stakeholders often will ensure that the team hears their change requests and identifies potential risks and issues. Agile methods allow these multiple touchpoints in the methodology. B is incorrect because telling the stakeholders the direction the development team is going isn't part of an agile team's way of doing things. Incorporating stakeholders' ideas and values means making sure nothing is planned without the stakeholders' support. C is incorrect because scheduling multiple meetings doesn't demonstrate value. D is incorrect because telling the stakeholders that the project

team is working hard isn't as valuable as the team creating results—that's what stakeholders want and value in the project.

3. A new stakeholder has joined your team. He is having a hard time focusing on really engaging with the team since his daily responsibilities are taking a lot of time. You've spoken with the team member's manager about this issue, but no solution has yet been proposed. What could the team do to help alleviate the problem?
  - A. Pitch in to help the stakeholder get his daily job done
  - B. Overload the stakeholder so he can't work on his daily responsibilities until the weekend
  - C. Pay for a temp or contractor to take over his daily responsibilities to free him up to work on the project
  - D. Go to his boss and explain how this is creating problems for the team

C. Very often, the people selected to be on an agile project team are the busiest people in the organization because of their knowledge. But the team needs members who can most effectively help the team to understand the requirements and make the critical decisions. It might be beneficial for the project to pay to have someone take over the stakeholder's daily responsibilities to free up time to devote to the project. A is incorrect because the team cannot pitch in to help the stakeholder, which would compound the problem as then their work would slip behind schedule. B is incorrect because overloading the stakeholder would force him to decide where to place his time and is contrary to agile principles. D is incorrect because his manager is aware of the issues.
4. How do agile project charters differ from non-agile project charters?
  - A. Agile charters set forth high-level goals, whereas non-agile charters are very detailed.
  - B. Agile charters name team members, whereas non-agile charters define teams.
  - C. Agile charters define the definitive outcome of the project, whereas non-agile charters define the desired outcome.

- D.** Agile charters define a stable project plan, whereas non-agile charters outline a high-level project plan.

A. An agile project and a non-agile project both have the same general goal, but the level of detail in an agile project is different. Since agile methods often involve technology or requirements that are uncertain and outcomes that cannot be definitively defined, the agile project charter has less detail than a non-agile project charter. The agile charter is a living document and subject to change as the project progresses. B, C, and D are incorrect because they are incorrect statements about agile project charters.

- 5.** An essential discussion that should take place early in the project is the definition of “done.” Why is this critical?

A. This allows team members to negotiate the meaning of “done” early in the project.

B. New tasks can be unveiled while discussing the meaning of “done.”

C. All stakeholders must understand fully what “done” means so there are no surprises at the last minute.

D. To continue to define the meaning of “done.”

C. Defining “done” is critical for satisfying all stakeholders’ expectations and to ensure everyone agrees as to what success is. A and B are incorrect because the definition of done is not meant to be used to negotiate new functionality or ideas, or to unveil new functionality at the last minute. D is incorrect because the definition of done isn’t an evolving concept, but defines done for all elements of the project.

- 6.** During an agile team meeting, there seems to be a misunderstanding of the requirements of a screen being developed. A team member begins to draw a wireframe of the screen on the whiteboard. What is the purpose of the wireframe?

A. To test the design

B. To determine what reports will be included in the output of the design

C. To get a consensus regarding the content and flow of the design

**D.** To understand how long the design will take to develop

**C.** Gaining consensus regarding the content and flow of a piece of software by developing a wireframe will confirm everyone has a complete understanding of what the output will entail. A, B, and D are incorrect because wireframes are not detailed enough to test the design, determine what the output reports will be, or understand how long the build will take.

**7.** Agile teams very often create personas to help the team move forward in a project. Which of the following is the best description of a persona?

- A.** A persona is a high-level discussion of requirements.
- B.** A persona helps the team empathize with the users of the solution.
- C.** A persona is a new role developed to engage the stakeholders.
- D.** A persona is an image that helps communicate what the result of the project is.

**B.** Developing a persona for a project helps the team understand what the users of their solution need and how the solution will be used in real-life situations. A, C, and D are incorrect because a persona is not a discussion of requirements, a role to engage stakeholders, or an image that helps communicate what the result of the project is; rather, it is a tool to help understand why a particular solution is required.

**8.** Which of the following is the preferred method of communication?

- A.** E-mail
  - B.** Instant messaging
  - C.** Face to face
  - D.** Conference calls
- C.** Face-to-face communication provides the best opportunity to ask questions, get immediate feedback, and understand body language in order to acknowledge agreement or clarify misunderstandings. A, B, and D are incorrect because, although these communication methods can be effective, they should be used only when a face-to-face discussion is not feasible.

- 9.** Your agile team leader encourages knowledge sharing at which of the following points of a project?
- A.** When someone shows an interest in a task
  - B.** At the end of an iteration
  - C.** Throughout the entire project
  - D.** At the end of the project
- C.** Knowledge sharing throughout the project ensures information is not in any one person's possession. A, B, and D are incorrect because sharing information only when it is asked for or at the end of an iteration or the project is a certain setup for failure. At that point, it will be time consuming and costly to unravel mistakes.
- 10.** You are a new project manager in your organization and your manager has asked you to read the Agile Manifesto. Since working collaboratively is highlighted in several parts of the Agile Manifesto, you find that your leader fosters the practice of engaging stakeholders much more frequently than you have seen in the past. How is this beneficial?
- A.** The team receives better input and ideas, develops better problem-solving skills, and becomes more willing to take ownership.
  - B.** All stakeholders get to know each other better.
  - C.** The stakeholders stay in their swim lanes rather than being called out from overstepping.
  - D.** The frequent meetings are a good break from heads-down work.
- A.** Many agile practices are based on a collaborative approach, which enables the team to share ideas, hear input and feedback from all stakeholders, and take ownership of successes and failures because they've participated in the decision. B is incorrect because stakeholders get to know each other's abilities and quirks by simply working together daily. Stakeholders in an agile project will learn that to have a successful project, there needs to be a highly collaborative team in place. D is incorrect because while some people will like meetings as a break from the work, that's not the best answer for this question.

- 11.** Which of the following is the definition of a workshop?
- A. A gathering where delays are explained
  - B. A meeting discussing why the last iteration was a success
  - C. A meeting discussing what progress has been made
  - D. A meeting defining activities and contributions
- D.** Retrospectives, planning meetings, and estimating sessions are all examples of workshops. Workshops are designed for active participation by all stakeholders to uncover issues and make the process more understandable and simple. A, B, and C are incorrect because they are definitions of other types of meetings.
- 12.** Why is it important for an agile leader to continuously improve their emotional intelligence?
- A. Emotional intelligence enables the agile leader to manage their own emotions and others' emotions.
  - B. The leader's emotions have a direct impact on the deliverables.
  - C. Agile projects are often changing, so the leader should have the skills to gauge the productivity of the team.
  - D. The agile leader should continuously improve their emotional IQ.
- A.** An agile leader needs to be able to understand when team members are upset, angry, frustrated, or stuck in order to coach and assist them to a favorable outcome. When a leader walks into the team's area and starts to vent about something, the team will easily replicate the leader's emotion. B is incorrect because emotional intelligence does not have an impact on the deliverables, but on the people creating the deliverables. C is incorrect because while agile projects do change often, the point of emotional intelligence isn't to gauge productivity. D is incorrect because the leader needs to continuously work on their emotional intelligence for the success of the team, which is different than just the leader's emotional IQ.
- 13.** When your agile leader sends meeting invitations, the goals, rules, timing, and the meeting agenda are all clearly defined. Why is this practice highly beneficial?

- A. You know you can schedule another meeting 15 minutes after this one ends.
- B. There is no ambiguity about why the meeting was scheduled.
- C. You know that at least for this timeframe you won't have any phone calls.
- D. You can ask another team member a question that they have not yet responded to.

**B.** Stakeholders need to know that the leader is not calling a meeting just to waste their time. Including in the invitation the meeting's goals, ground rules (such as no cell phones or being late), timing, etc., assures stakeholders that it is a structured meeting that won't be a waste of time. A, C, and D are incorrect because they are only incidental benefits of a detailed meeting invitation.

14. A disagreement about a project requirement has been brewing on your team. You've noticed that the agile leader is not taking any action to resolve this disagreement. What might be the agile leader's reason for keeping their distance for now?
- A. The leader wants the people involved to try to resolve the difference themselves.
  - B. The leader doesn't know the answer or where to find the answer.
  - C. The leader's friend is on one side of the disagreement.
  - D. The leader is waiting for the point at which the team blows up to intervene.

**A.** A good agile leader evaluates the level of the disagreement and allows the team members to resolve the differences themselves if it is still at a manageable level. This will build the team members' support for the decision and respect for each other.

B is incorrect because an agile leader isn't expected to intervene if the team is attempting to be self-directed and resolve issues. C is incorrect because an agile leader doesn't take sides based on friendship. The leader needs to take emotion out of their involvement and not take sides no matter who is on the team. D is incorrect because an agile leader steps in to diffuse a disagreement before it spirals out of control. The agile leader knows that conflict is often

good and a self-directed team is empowered to make decisions in the project.

**15.** Since agile leaders are not project dictators, how are decisions made?

- A. The most senior member of management makes the decisions.
- B. The stakeholders collectively agree on and share decisions.
- C. The business partners make decisions.
- D. The development team typically makes decisions.

**B.** Agile methods foster team empowerment, which increases stakeholders' need for effective decision making. There are two methods by which this can be accomplished: collective agreement, where the team agrees with the decision or approach, and a shared decision, which means the team and the stakeholders arrive at decision together, rather than one party making the project decision. A, C, and D are incorrect because decisions are made by the whole project team, not just the most senior member of management, business partners, or the development team.

**16.** A decision needs to be made by the agile team. Someone on the team suggests saving time by skipping discussion and using a show of hands to indicate whether team members are for or against the decision. What would be the most legitimate reason to object to this decision-making approach?

- A. You are concerned some members will vote for the cheapest way to resolve the issue.
  - B. You are concerned some members will vote for the fastest way to resolve the issue.
  - C. You are concerned some members will not vote for the decision you want.
  - D. You are concerned that there will be no ideas for a better alternative to the decision.
- D.** With just a "for" or "against" vote, there will be no discussion that might produce a better or alternative decision for the issue. Without a discussion, people won't know why a decision should be

made for or against a particular solution.

A and B are incorrect because these answers don't address the primary issue of not allowing conversation regarding the decision (besides, voting for the cheapest or quickest way to resolve an issue is not in the best interest of the project or the stakeholders). C is incorrect because you want the team to make the best decision for the project, not the solution that you are in favor of.

17. A decision needs to be made by the agile team. The team decides to go with the decision model of thumbs up/down/sideways. You can assume what the thumbs up and thumbs down indicate, but you've never seen the thumbs sideways vote. What does this mean?

- A. Team members with thumbs sideways don't care either way.
- B. Team members with thumbs sideways have a question that needs further discussion.
- C. Team members with thumbs sideways can't make up their minds.
- D. Team members with thumbs sideways don't have enough knowledge to vote.

B. Team members who have a thumb sideways vote have a concern or conflict with the decision and would like to discuss it further. A, C and D are incorrect because a sideways thumb doesn't mean that the person doesn't care, can't decide, or doesn't have enough knowledge to vote.

18. Why is it important that all stakeholders are involved in decision-making?

- A. So they attend meetings
- B. So they can tell their management it was their decision
- C. So they are committed to the decision
- D. So they don't condemn a decision that wasn't theirs

C. If stakeholders are not involved in decision-making, they will not be committed to any decision made and subsequently will not be committed to the project. A, B, and D are incorrect because the reason for involving all stakeholders in decision-making isn't to get

them to attend meetings, to enable them to take credit for decisions, or to prevent them from condemning decisions.

19. Your agile leader has invited all stakeholders, including customers and sponsors, to scheduled planning meetings. All of the following choices are valid reasons for this invitation except for which one?

- A. To hear all their concerns
- B. To be sure all priorities are being addressed by all involved in the project
- C. To uncover issues
- D. To determine success or failure of a project member

D. The point of inviting the stakeholders to these meetings is not to determine the success or failure of a project team member. A, B, and C are incorrect because they are all valid reasons for the invitation. Agile methods emphasize bringing project priorities into alignment with stakeholders' priorities. Agile projects do not plan or initiate work that the stakeholders don't support or value.

20. How does your agile team leader ensure that stakeholders stay engaged?

- A. Replace the first person who is not staying engaged in the team to set precedence
  - B. Report anyone who is not staying engaged to the person's manager
  - C. Report on benefits or issues regarding specific stakeholder involvement in status reports
  - D. Don't invite anyone who is not staying engaged to subsequent meetings
- C. Reporting on stakeholders' contributions and giving credit where credit is due in a status report or steering committee report will keep their involvement visible and help maintain their interest and encourage further engagement. A, B, and D are incorrect because eliminating a person from the team or meetings or "tattling" on the stakeholder is not the right approach to take in this situation.

**Storming** Storming is the second stage of Tuckman's Model of Team Development in which people jockey for positions, claim ownership of what they want to work on, or even voice strong opinions on project objectives. Storming can appear to be combative and full of conflict, but it's a natural part of team development.

**Tacit knowledge** Knowledge a person has gained through their experience and doing work is tacit knowledge. Teams have tacit knowledge about the project work and how things operate in their colocated environment.

**Tuckman's Model of Team Development** Tuckman's Model of Team Development is a model that shows project team members moving from forming through storming, norming, and performing. Teams may shift back to earlier stages based on project conditions. Adjourning is a fifth stage that the team goes through when it disbands.

**Value management team** The value management team is composed of business people looking for return on investment for the project work. They look for opportunities to increase value, predict breakeven points, and forecast how the project will contribute to cutting costs in the organization and/or increasing revenue.

**Velocity** Velocity is the capacity of work the team can complete per iteration. Velocity is defined by how many story points the team can complete in one iteration.

## Questions

1. You have been identified as a stakeholder on an agile software development team. As you join your first meeting, you are surprised that there are only ten people on the team; you thought it would be a much bigger team since it is a large implementation. Why do you think the team is so small?
  - A. The agile methodology is so new, no one wanted to be on the team.
  - B. One person was selected from each department.

- C. Agile methods recommend the delivery team to be 12 or fewer members.
  - D. Agile methods call for very specialized roles.
2. Your agile team consists of generalizing specialists. What is a generalizing specialist?
- A. A person that knows just one skill
  - B. A person that is skilled in more than one discipline
  - C. A person that knows what each role is responsible for
  - D. A person that know their job duties well
3. Your agile team leader has described the iteration goals at a high level and is allowing the team to decide how to complete the iteration. What does this action prove to the team?
- A. That the leader doesn't know how to accomplish the iteration
  - B. That the leader trusts the self-organizing team and their expertise to complete the goal
  - C. That the team leader is busy working on his normal job
  - D. That the team leader is not a micro-manager
4. You are on a self-directing agile team and would like to take the lead on a task that you are very familiar with and feel very strongly about. What is the process to take the lead?
- A. Explain and show to your team that this task falls within your expertise and you know you can lead it to success
  - B. Ask the project leader if it would be okay to lead this process
  - C. In a meeting with stakeholders, explain that you've done this task before and it would be a good idea for you to take the lead
  - D. Subtly overpower the leader and take charge of the task
5. Your team leader has built a safe environment for disagreement. How has this empowered the team to move forward without obstacles?
- A. There is a method to create a list of reasons why tasks cannot be completed and brought to management.
  - B. The team decided to avoid conflict.

- C. The team leader takes responsibility for all decisions made.
  - D. The team is encouraged to join in constructive conflict to make better decisions.
- 6. You are on a new agile team and your leader keeps emphasizing that for the first iteration, everyone needs to follow the rules that have been described by previous agile teams in the organization. Why do you think this is so important to your leader?
  - A. It is best to start a project by following a method that has been tested, proven, and refined by others.
  - B. The leader wants to be able to explain the rules and then go back to her normal job and let the team work on its own.
  - C. The leader wants the team members to prove they can follow rules.
  - D. The team leader doesn't want the team to try to move the project off course early in the process.
- 7. As a member of an agile team, at what level of mastering a skill do you think you can make the best decision rather than relying on the rules?
  - A. Competent
  - B. Competent
  - C. Proficient
  - D. Expert
- 8. The formation and development of teams normally follow the Tuckman Model of forming, storming, norming, and performing. Your team leader is obviously aware of this model, but he is new to the organization and is having trouble understanding why the forming stage has gone so quickly. Which of the following might be the reason?
  - A. The team was handpicked by management, so they know they must get along.
  - B. Most of the team members have worked together on previous projects.

- C. Their team members really don't care if they get along or not.
  - D. Most of the team members are from the same department.
- 9. You are the project manager of a new agile project for your organization and you're explaining to the business team how agile works. You explain that at which of the following stages of adaptive leadership the leader may ask many questions?
  - A. Directing
  - B. Coaching
  - C. Supporting
  - D. Delegating
- 10. You are an agile team leader and you've come to realize that there is very little interest in the project coming from team members. What is a good method to motivate team members for the duration of the project?
  - A. Offer them a raise if they become engaged
  - B. Offer a bonus if the project is a success
  - C. Align the project goals to the corporate goals
  - D. Align the project goals to team members' personal goals
- 11. In the middle of an iteration, the team leader noticed that one member was having an issue with a decision the entire team made. The leader asked the team member for a one-on-one discussion. What type of session do you think this was?
  - A. Training
  - B. Coaching
  - C. Mentoring
  - D. Directing
- 12. Beth is the project manager for an agile project in her organization. She's explaining to the team how the team should communicate effectively in the project. What is the preferred method of communication for an agile team?
  - A. Secured and saved e-mail so there is a paper trail

- B.** Conference calls where attendance is mandatory
  - C.** Face-to-face discussions
  - D.** One-on-one phone calls
- 13.** You are the project manager of an agile project for your organization and you'd like the team to be colocated. When is an agile team considered to be colocated?
  - A.** When all team members are within 33 feet of each other with no barriers
  - B.** When all team members are located on the same floor of a building
  - C.** When all team members are in the same city
  - D.** When all team members are on the same campus
- 14.** You are on a colocated agile team and sometimes the team area gets so noisy that it is hard to concentrate. On these days, you are very glad to have access to which of the following?
  - A.** Cafeteria
  - B.** Your boss's office
  - C.** A small private office, sometimes known as a cave
  - D.** Another floor
- 15.** You are on an agile team and in a meeting one of your co-workers said she learned how to correct a piece of code by osmotic communication. What does this mean?
  - A.** She dreamed what the correction should be
  - B.** She did a search on Google
  - C.** She read about the solution in a book
  - D.** She overheard a conversation in the agile team's commons that discussed the solution
- 16.** You are leading an agile team whose members are located in several areas of the world. You've arranged conference calls and insisted that everyone have their computer cameras on so that team members can associate names and faces with participants. It is impossible to have the team members meet face to face because of the cost. What is

an alternate method of enabling team members to get to know each other?

- A. Have them send each other pictures
  - B. Have each member write a short biography and share it with team members
  - C. Pair up team members to work on tasks, and rotate the pairs
  - D. Have team members get to know each other's primary language
17. You have been selected to lead a team with members located all over the world. You pushed to use the agile method of running a team and upper management thought that was an excellent suggestion. Why is running a distributed team with an agile methodology feasible?
- A. Being agile allows you to select two or three people in each location to work together with the project's goals in mind.
  - B. Agile teams use short iterations to complete tasks and receive feedback to ensure the project is on the right track.
  - C. Almost everyone has Internet access, which allows for immediate communication.
  - D. Agile teams are used to running themselves, so your involvement as the leader will be minimal.
18. You are looking at a burndown chart located in the agile team area. What is this chart telling you?
- A. How many members are rolling off the project
  - B. How much work needs to be completed on the project
  - C. How many test scripts have been run
  - D. When you can schedule your vacation
19. You are looking at a burnup chart located in the agile team's area. What is this chart telling you?
- A. When to add additional members to the project
  - B. How many test scripts are left to execute
  - C. How much work has been completed
  - D. When the project will end

- 20.** You are the project manager for your organization and you're sharing a velocity chart with the product owner. What is measured in a velocity chart?
- A. The team's capacity
  - B. How many members are on the team at any given time
  - C. How quickly the project is progressing
  - D. How many hours have been burned on the project

## Questions and Answers

- 1.** You have been identified as a stakeholder on an agile software development team. As you join your first meeting, you are surprised that there are only ten people on the team; you thought it would be a much bigger team since it is a large implementation. Why do you think the team is so small?
- A. The agile methodology is so new, no one wanted to be on the team.
  - B. One person was selected from each department.
  - C. Agile methods recommend the delivery team to be 12 or fewer members.
  - D. Agile methods call for very specialized roles.

C. Agile methods recommend that a team of 12 or fewer be assembled to allow the members to form relationships and be able to communicate more directly. If more team members are needed, teams will be broken into subteams and their work will be coordinated. Agile team members are selected based on the ability to commit to a common purpose, agree on how goals are measured, and take shared ownership of the project.

A is incorrect because the newness of the agile approach in an organization isn't the best choice for the team size limit. B is incorrect because agile teams are formed by skills, not by representatives from each department. D is incorrect because agile calls for generalizing specialists on the project team.

- 2.** Your agile team consists of generalizing specialists. What is a generalizing specialist?
- A.** A person that knows just one skill
  - B.** A person that is skilled in more than one discipline
  - C.** A person that knows what each role is responsible for
  - D.** A person that know their job duties well
- B.** A generalizing specialist is a person that is skilled in multiple disciplines. A team composed of generalizing specialists can share the workload and avoid bottlenecks that many project encounters. If a coder that also has the skills to interview an end user of the product a handoff can be avoided from the interviewer to the coder which will avoid a misinterpretation and save time and money.
- A is incorrect because a generalizing specialist is not a person with just one skill, but a person who has more than one skill related to the project discipline. C and D are incorrect because the term generalizing specialist doesn't refer to a person that understands each role and responsibility or to a person that knows their job duties well.
- 3.** Your agile team leader has described the iteration goals at a high level and is allowing the team to decide how to complete the iteration. What does this action prove to the team?
- A.** That the leader doesn't know how to accomplish the iteration
  - B.** That the leader trusts the self-organizing team and their expertise to complete the goal
  - C.** That the team leader is busy working on his normal job
  - D.** That the team leader is not a micro-manager
- B.** The team leader recognizes that the team members are in the best position to organize the work, which in turn alleviates the roadblocks when a list of tasks is pushed to the team. Agile leaders are there to serve the people doing the work by blocking any interruptions, removing roadblocks, communicating, and providing support.
- A, C, and D are incorrect because encouraging the project team to be self-organizing is the agile leader's role, and attributing any other reason to this decision would be mere speculation.

4. You are on a self-directing agile team and would like to take the lead on a task that you are very familiar with and feel very strongly about. What is the process to take the lead?
- A. Explain and show to your team that this task falls within your expertise and you know you can lead it to success
  - B. Ask the project leader if it would be okay to lead this process
  - C. In a meeting with stakeholders, explain that you've done this task before and it would be a good idea for you to take the lead
  - D. Subtly overpower the leader and take charge of the task
- A. A feature of a high-performing agile team is that leadership can be switched seamlessly without a power struggle. If the team understands that you can have a successful outcome, either in a small task or a complete iteration, the likely reaction will be, "Go for it!" B is incorrect because members of a self-organizing team should not have to ask for permission or nudge someone out of the way to take the lead. C is incorrect because the team member wouldn't ask permission from the stakeholders, but would address the project team. D is incorrect because leading a portion of the project isn't a political game, but is an example of emergent leadership from the project team.
5. Your team leader has built a safe environment for disagreement. How has this empowered the team to move forward without obstacles?
- A. There is a method to create a list of reasons why tasks cannot be completed and brought to management.
  - B. The team decided to avoid conflict.
  - C. The team leader takes responsibility for all decisions made.
  - D. The team is encouraged to join in constructive conflict to make better decisions.
- D. Constructive conflict is encouraged because better decisions are made, and team members can stand behind their agreement.
- A is incorrect because this answer doesn't describe the safe environment or the agile approach to getting things done. B is incorrect because avoiding conflict guarantees the wrong decision or a single person making decisions. C is incorrect because the agile

team leader is not there to take responsibility for good or bad decisions, but to remove roadblocks, communicate, deflect interruptions, and provide what the team requires.

6. You are on a new agile team and your leader keeps emphasizing that for the first iteration, everyone needs to follow the rules that have been described by previous agile teams in the organization. Why do you think this is so important to your leader?
  - A. It is best to start a project by following a method that has been tested, proven, and refined by others.
  - B. The leader wants to be able to explain the rules and then go back to her normal job and let the team work on its own.
  - C. The leader wants the team members to prove they can follow rules.
  - D. The team leader doesn't want the team to try to move the project off course early in the process.

A. Original agile teams have tried and tested many theories to learn how to begin a project. They found that before you can understand how and why all pieces work together, you need to develop a high-level understanding of the process. So, following the rules that have been tested, proven, and refined will get you to the basics of the project.  
B is incorrect because an agile leader should be fully committed to their project, so there is no conflict between jobs. C is incorrect because following rules in the beginning will keep a project on course, rather than introducing scope creep, and isn't intended to prove anything. D is incorrect because changing the rules of agile is acceptable, but only after the team has mastered the rules and has good reasons to change.
7. As a member of an agile team, at what level of mastering a skill do you think you can make the best decision rather than relying on the rules?
  - A. Competent
  - B. Competent
  - C. Proficient

#### D. Expert

C. At the proficient level of mastering a skill, your decision making is still analytical, but you are becoming more comfortable relying on a gut feel rather than a rule.

A is incorrect because at the advanced beginner stage, you are beginning to understand the context of the rules, which isn't the best stage to begin tailoring the processes or changing the agile rules. B is incorrect because during the competent stage, you are deciding which rules are best for the situation. D is incorrect because becoming an expert means decisions are intuitive and spontaneous.

8. The formation and development of teams normally follow the Tuckman Model of forming, storming, norming, and performing. Your team leader is obviously aware of this model, but he is new to the organization and is having trouble understanding why the forming stage has gone so quickly. Which of the following might be the reason?
  - A. The team was handpicked by management, so they know they must get along.
  - B. Most of the team members have worked together on previous projects.
  - C. They team members really don't care if they get along or not.
  - D. Most of the team members are from the same department.

B. Not all teams will follow this model completely, and the team lead needs to look for signs of which phase the team is in and plan accordingly. Most of this team has worked together previously, so the initial phase, forming, is not as necessary as it would be for a completely new team.

A is incorrect because even teams that are selected by management may still go through forming. C is incorrect because teams do need to care if they get along. D is incorrect because even teams from the same department may still need to move through forming if they've not worked together in the past and as they learn about the project.

  9. You are the project manager of a new agile project for your organization and you're explaining to the business team how agile

works. You explain that at which of the following stages of adaptive leadership the leader may ask many questions?

- A. Directing
- B. Coaching
- C. Supporting
- D. Delegating

A. Early in a team's formation, the leader directly helps with project activities and lays out a picture of what needs to be accomplished. The leader may also ask a lot of questions to ensure the team understands the team's direction.

B is incorrect because in the coaching phase, the leader mainly resolves conflicts so that relationships are not damaged. C is incorrect because during the supporting phase, the leader is still needed for conflict resolution in addition to challenging the team with high-level goals. D is incorrect because the delegating stage is rarely achieved because teams are empowered.

10. You are an agile team leader and you've come to realize that there is very little interest in the project coming from team members. What is a good method to motivate team members for the duration of the project?

- A. Offer them a raise if they become engaged
- B. Offer a bonus if the project is a success
- C. Align the project goals to the corporate goals
- D. Align the project goals to team members' personal goals

D. A good method of motivating the team is to understand the individual goals of the project team members and show the correlation between the project goals and the individual goals.

A and B are incorrect because offering a raise or bonus might engage team members for a short time, but probably not for the long run. C is incorrect because aligning the project goals to the corporate goals still does not answer "What's in it for me?" for the team members, but aligning the project goals to the individual's personal goals (for example, a promotion to a management position) will give them the motivation to be successful.

**11.** In the middle of an iteration, the team leader noticed that one member was having an issue with a decision the entire team made. The leader asked the team member for a one-on-one discussion. What type of session do you think this was?

- A.** Training
- B.** Coaching
- C.** Mentoring
- D.** Directing

**B.** Coaching is defined as helping a team member to stay on track, improve skills, and overcome issues. During an iteration is the right time to address individual team members, whereas between iterations it is more practical to coach the entire team.

A is incorrect because training is teaching a skill by instruction and is very structured. This is not the right situation for a training session. C is incorrect because mentoring involves having a relationship with someone you can bounce ideas off and ask for advice. D is incorrect because directing is when the project manager gives direct instructions for how to do a task, something that is not generally encouraged in agile projects.

**12.** Beth is the project manager for an agile project in her organization. She's explaining to the team how the team should communicate effectively in the project. What is the preferred method of communication for an agile team?

- A.** Secured and saved e-mail so there is a paper trail
- B.** Conference calls where attendance is mandatory
- C.** Face-to-face discussions
- D.** One-on-one phone calls

**C.** Face-to-face discussions are the recommended method of communication on agile teams.

A, B, and D are incorrect choices as e-mail, conference calls, and one-on-one phone calls are considered alternative methods if people can't meet in person, but agile recommends face-to-face communication to avoid misinterpretation or confusion.

**13.** You are the project manager of an agile project for your organization and you'd like the team to be colocated. When is an agile team considered to be colocated?

A. When all team members are within 33 feet of each other with no barriers

B. When all team members are located on the same floor of a building

C. When all team members are in the same city

D. When all team members are on the same campus

A. An agile team is only considered to be colocated when all team members are within 33 feet of each other with no barriers.

B, C, and D are incorrect because the team members are not sufficiently proximate to be considered colocated in agile. When team members are dispersed and use technology to communicate, they are considered virtually colocated even if the team members are on the same floor, city, or campus. Within 33 feet of one another is the best choice to describe colocation.

**14.** You are on a colocated agile team and sometimes the team area gets so noisy that it is hard to concentrate. On these days, you are very glad to have access to which of the following?

A. Cafeteria

B. Your boss's office

C. A small private office, sometimes known as a cave

D. Another floor

C. Common areas ("commons") sometimes can be very distracting. Agile teams often include private offices, or "caves," in their team space so that private conversations, calls, or just quiet time for a team member can take place.

A, B, and D are incorrect because going to a different area can be time consuming and, in some cases, even more distracting.

**15.** You are on an agile team and in a meeting one of your co-workers said she learned how to correct a piece of code by osmotic communication. What does this mean?

- A. She dreamed what the correction should be
- B. She did a search on Google
- C. She read about the solution in a book
- D. She overheard a conversation in the agile team's commons that discussed the solution

**D.** Osmotic communication is described as useful information that is overheard when working in a common area.

A is incorrect because osmotic communications doesn't describe finding answers by dreaming solutions. B is incorrect because searching Google is an example of research, not osmotic communications. C is incorrect because reading a book may be a good source of information, but it's not osmotic communication.

- 16.** You are leading an agile team whose members are located in several areas of the world. You've arranged conference calls and insisted that everyone have their computer cameras on so that team members can associate names and faces with participants. It is impossible to have the team members meet face to face because of the cost. What is an alternate method of enabling team members to get to know each other?

- A. Have them send each other pictures
- B. Have each member write a short biography and share it with team members
- C. Pair up team members to work on tasks, and rotate the pairs
- D. Have team members get to know each other's primary language

**C.** Pairing up team members on a task or iteration gives them the opportunity to talk one-on-one more often and learn how to react and deal with each other.

A and B are incorrect as pictures and a biography will not help team members get to know each other's work ethics and goals. D is incorrect because learning each other's primary language is an admirable goal, but not realistic for most projects.

- 17.** You have been selected to lead a team with members located all over the world. You pushed to use the agile method of running a team and

upper management thought that was an excellent suggestion. Why is running a distributed team with an agile methodology feasible?

- A. Being agile allows you to select two or three people in each location to work together with the project's goals in mind.
  - B. Agile teams use short iterations to complete tasks and receive feedback to ensure the project is on the right track.
  - C. Almost everyone has Internet access, which allows for immediate communication.
  - D. Agile teams are used to running themselves, so your involvement as the leader will be minimal.
- B.** The short iterations during an agile project require continuous collaboration and coordination. Each iteration is similar to a mini-project, meaning it is complete when delivered, making chunks of work easier to manage than an entire project at the end of the project's life cycle.

A is incorrect because virtual teams don't have to work in groups of two or three people. C is incorrect because, while virtual teams do use Internet connectivity for communications, it's not the best answer presented. D is incorrect because teams may eventually be self-led and self-organized, but the project manager will still be involved in facilitating and coaching the team.

**18.** You are looking at a burndown chart located in the agile team area. What is this chart telling you?

- A. How many members are rolling off the project
  - B. How much work needs to be completed on the project
  - C. How many test scripts have been run
  - D. When you can schedule your vacation
- B.** A burndown chart indicates how much work is left to complete the project. A burndown chart can also show the remaining tasks in the current iteration. It is the team's decision on what will be measured on a burndown chart, such as hours, stories, iterations, etc. A is incorrect because a burndown chart doesn't show the number of people leaving the project team. C is incorrect because a burndown chart doesn't show the number of test scripts completed. D is

incorrect because a burndown chart can allude to a project's likely completion, based on the number of tasks completed, but its primary goal is to show the amount of work left to complete in the project. Other matrices exist that show team members' status, how many test scripts have been run, or a calendar for the team to schedule time off.

- 19.** You are looking at a burnup chart located in the agile team's area. What is this chart telling you?
- A. When to add additional members to the project
  - B. How many test scripts are left to execute
  - C. How much work has been completed
  - D. When the project will end
- C.** A burnup chart indicates how much work has been completed. The advantage to a burnup chart is that it can also track the project scope, items not started, or what is in progress.
- A, B, and D are incorrect because a burnup chart doesn't show these items. There are other matrices that will track members, what work is left to complete, and when the project will end.
- 20.** You are the project manager for your organization and you're sharing a velocity chart with the product owner. What is measured in a velocity chart?
- A. The team's capacity
  - B. How many members are on the team at any given time
  - C. How quickly the project is progressing
  - D. How many hours have been burned on the project
- A.** A velocity chart measures the team's capacity for work per iteration. After tracking several iterations, the velocity chart will become a powerful tool for planning and estimating by using the team's average velocity of the previous iterations. Another benefit of the velocity chart is that it takes into consideration interruptions and scope creep.
- B, C, and D are incorrect because a velocity chart doesn't show these items. Other matrices can be used to track members, time, and how many hours have been used to date.

**User story formula** The user story formula includes role, functionality, and benefit and is seen as: As a <role> I want this <functionality> so that I'll receive this <benefit>.

**Value-based analysis** Value-based analysis examines the business value and assesses the worth of what the project will create. Value-based analysis is the business benefit minus the cost of the project.

**Value-based decomposition** Value-based decomposition is a visual decomposition of the project scope, requirements, features, or risk. Value-based decomposition is a way to examine the requirements and determine the value of each requirement for prioritization and relationships among the components.

**Wideband Delphi Technique** The Wideband Delphi Technique, sometimes called just the Delphi Technique, has rounds of anonymous surveys to create estimates, gather risks, or gather requirements. It helps to build consensus without everyone following one person's point of view.

## Questions

1. You are an agile project manager and your team, which is new to agile project management, is concerned about planning the project. You advise the team that adaptive planning is the most effective and efficient way to plan the course of an agile project and offer which of the following reasons?
  - A. Adaptive planning allows team members to become adjusted to the plan.
  - B. Adaptive planning is based on the concept that the plan is in motion.
  - C. Adaptive planning allows the business partners to share the plan with their teams.
  - D. Adaptive planning is stable after the prototype is complete.
2. You are new to an agile team. You have been hearing the term “agile discovery” and are not quite sure what that means. You asked your team leader and she explained it as which of the following?

- A. The project plan developed in the beginning of the project is being followed and tracked.
  - B. The plans and requirements developed in the beginning of the project are ever-changing, so broad estimates are used to reflect the uncertainty.
  - C. The team is learning how to develop a solid project plan.
  - D. The team is anticipating roadblocks and trying to avoid them.
3. You are an agile project manager and your agile team is approaching their next iteration. There seems to be a disagreement about how the work items are prioritized since new functionality has been introduced. How can you assist the project team and the product owner when analyzing the priorities?
- A. By analyzing the value of each task and delivering the highest-value items first
  - B. By determining how long it will take to complete each task and do the quick ones first
  - C. By analyzing the impact of testing and leaving the longer durations to the end of the iteration
  - D. By determining what functionality the users determined to be most critical and delivering that first
4. Beth is leading a new agile project and her team is uncertain of some of the concepts. The team doesn't understand the idea of timeboxing a portion of the project. In an agile team's environment, what is a timebox?
- A. An alarm that sounds when a task needs to end
  - B. A time period during which designated work is completed
  - C. The agile term for a month
  - D. The minimum amount of time a task should take to complete
5. While on an agile project team, you've already gone through the value-based analysis of prioritization for the first few iterations along with all stakeholders. Now you need to estimate how long each iteration will take to complete. What process does agile prefer for making such estimates?

- A. Decompose, or break down, requirements into chunks of work, estimate how long each task will take to complete, and plan the task
  - B. Understand how many people are available, determine how many tasks need to be completed, and split the tasks between the team
  - C. Determine how many tasks are in the entire project, chunk the tasks into specific iterations, and determine how long each iteration will take
  - D. Allowing the team leader to determine the time frame of each iteration
6. You have been on several agile teams, so you are very familiar with user stories. There are several new people on your team and you've been asked to describe what a "user story" is. How do you explain this in just a few words?
- A. A user story is a small chunk of functionality that should take one to three days to finish.
  - B. A user story is a narrative of requirements.
  - C. A user story is the background of the user community.
  - D. A user story is how the user community plans to use the product.
7. Once all user stories are written, they are compiled to create a backlog, or master list, of all work that needs to be completed, sorted by priority. As a story is completed and delivered, it is removed from the backlog. How is this process beneficial?
- A. Having all work to be done listed in a single document is a key agile practice, which shows the progress of scope and the status of the project.
  - B. Having all work on one list makes it easier to bypass a story that didn't pass testing successfully.
  - C. It provides a visual display of how long the project is going to take.
  - D. It provides a visual display of how much the project is going to cost.

8. The business partner continuously refines, or grooms, the backlog. This includes adding new stories, reprioritizing stories, and removing stories. What is the development team responsible for in this process?

  - A. Adding new story functionality
  - B. Deleting stories that don't work
  - C. Estimating the work so the customer can prioritize effectively
  - D. Changing the business needs
9. Making absolute estimates on how long it will take to complete a task is very difficult, so agile teams use which of the following methods to estimate more accurately?

  - A. Estimate how many user stories can be done in a day
  - B. Base absolute estimates on hour rather than day
  - C. Use comparative estimates or relative sizing
  - D. Use value-based priority
10. Who should own the process of story point sizing?

  - A. The PMO
  - B. The agile team
  - C. The agile team leader
  - D. The business partner
11. When your agile team is estimating story points, it is important to include which of the following?

  - A. Vacations and sick days
  - B. Testing and refactoring
  - C. Server backup time
  - D. Meeting times
12. When your agile team is nearing the end of creating story point estimates, you go through a reality check by which of the following processes?

  - A. Affinity estimating

- B.** T-shirt sizing
  - C.** Story maps
  - D.** Relative sizing
- 13.** Your agile team has decided to display a product roadmap. What is this roadmap used for?
- A.** To display where the team is in the project life cycle
  - B.** To display how many user stories have been completed
  - C.** To display product releases and what will be included
  - D.** To display the total number of story points in the project
- 14.** Your agile team has decided to use planning poker to determine point estimates for their user stories. What happens when several members estimate a user story at three points or under and several members estimate the same story at ten points?
- A.** The points assigned to the story are averaged.
  - B.** The high and low are discarded and then the points remaining are averaged.
  - C.** The user story is changed so everyone can agree upon the point value.
  - D.** The story is discussed again to come to a consensus.
- 15.** There is a tool that agile teams use that is usually timeboxed and explores an approach, investigates an issue, or reduces a project risk. What is this tool called?
- A.** Iteration
  - B.** Spike
  - C.** User story
  - D.** Relative unit
- 16.** One of the iterations your agile team was going to work on was deemed a “fast failure.” What does this mean?
- A.** The iteration was too large.
  - B.** All the work for the iteration was developed, tested, and failed.
  - C.** The proof-of-concept of the iteration wasn’t successful.

- D.** There were not enough user stories in the iteration to succeed.
- 17.** Your agile team is in the release planning phase for the next iteration. What is the most accurate tool to use to determine how much work can be done in the next release?
- A.** User stories
  - B.** Velocity
  - C.** Story points
  - D.** Affinity estimating
- 18.** Why is the velocity of completed iterations used to estimate the project's progress and duration estimates for the remainder of the project?
- A.** Previous iterations include all variables of development.
  - B.** The same number of user stories are completed in each iteration.
  - C.** The same team members should be on each iteration.
  - D.** The team is more capable of completing tasks after several iterations.
- 19.** Your agile team is planning for the next iteration. How should this process begin?
- A.** By breaking down user stories into tasks
  - B.** By defining the acceptance criteria
  - C.** By selecting what user stories should be in the iteration
  - D.** By analyzing the user stories in the backlog
- 20.** Once an iteration is in progress, a daily standup meeting occurs. This is a very quick meeting that is timeboxed at 15 minutes or less, and the team members stand so the meeting stays focused and on track. There are only three questions that should be answered by every team member that has an active task. Which one of the following is not a question included in the daily standup meeting?
- A.** What have I worked on since the last meeting?
  - B.** What do I plan to finish today?
  - C.** How far behind am I?

- D.** Are there any impediments to my progress?

## Questions and Answers

1. You are an agile project manager and your team, which is new to agile project management, is concerned about planning the project. You advise the team that adaptive planning is the most effective and efficient way to plan the course of an agile project and offer which of the following reasons?

  - A. Adaptive planning allows team members to become adjusted to the plan.
  - B. Adaptive planning is based on the concept that the plan is in motion.
  - C. Adaptive planning allows the business partners to share the plan with their teams.
  - D. Adaptive planning is stable after the prototype is complete.

**B.** Recognizing that the plan devised in the beginning of the project is most likely flawed, agile embraces adaptive planning, based on the concept that the plan is in motion. An effective way to be successful on an agile project is to plan to replan. Distributing planning throughout the life cycle of the project allows the team to better adjust to new information.  
A is incorrect because adaptive planning is not allowing the project team to become adjusted to the plan. C is incorrect because adaptive planning isn't the project team share plans with partners. D is incorrect because the project plan isn't stable after the prototype.
2. You are new to an agile team. You have been hearing the term “agile discovery” and are not quite sure what that means. You asked your team leader and she explained it as which of the following?

  - A. The project plan developed in the beginning of the project is being followed and tracked.
  - B. The plans and requirements developed in the beginning of the project are ever-changing, so broad estimates are used to reflect the uncertainty.

- C. The team is learning how to develop a solid project plan.
  - D. The team is anticipating roadblocks and trying to avoid them.
- B.** Agile discovery is a term used to describe the evolution and fluidity of agile project plans in contrast with designing a plan in the beginning of the project. A, C, and D are incorrect as agile discovery isn't reliant on the project plan being defined and followed at the beginning of the project. Agile discovery is not focused on the team removing roadblocks, but does acknowledge that roadblocks may take time and resources to address to keep the project moving forward.
3. You are an agile project manager and your agile team is approaching their next iteration. There seems to be a disagreement about how the work items are prioritized since new functionality has been introduced. How can you assist the project team and the product owner when analyzing the priorities?
- A. By analyzing the value of each task and delivering the highest-value items first
  - B. By determining how long it will take to complete each task and do the quick ones first
  - C. By analyzing the impact of testing and leaving the longer durations to the end of the iteration
  - D. By determining what functionality the users determined to be most critical and delivering that first

**A.** Agile planning is based on value-based analysis, meaning the business value of deliverables is analyzed and delivered first. Agile teams can assist the business partners by factoring in likely development costs to make informed decisions. The time it takes to complete a task needs to have a cost associated with it before the priority is determined. The users typically don't contribute to this process, but the value management team and the product owner will determine business value.

B is incorrect because the team doesn't do the quick tasks first, but does the tasks by prioritization. C is incorrect because the team also doesn't do the longer durations at the end of an iteration. D is

incorrect because the prioritization is based on the overall business value.

4. Beth is leading a new agile project and her team is uncertain of some of the concepts. The team doesn't understand the idea of timeboxing a portion of the project. In an agile team's environment, what is a timebox?
  - A. An alarm that sounds when a task needs to end
  - B. A time period during which designated work is completed
  - C. The agile term for a month
  - D. The minimum amount of time a task should take to complete

**B.** An agile timebox is typically a short period of time in which designated work is completed. The team can use an iteration timebox that represents how many tasks can be completed during that timeframe. If a task is not completed during the given amount of time, it is moved to the next timebox and reprioritized. Choices A, C, and D are incorrect as these answers are incorrect definitions of a timeboxed duration.
5. While on an agile project team, you've already gone through the value-based analysis of prioritization for the first few iterations along with all stakeholders. Now you need to estimate how long each iteration will take to complete. What process does agile prefer for making such estimates?
  - A. Decompose, or break down, requirements into chunks of work, estimate how long each task will take to complete, and plan the task
  - B. Understand how many people are available, determine how many tasks need to be completed, and split the tasks between the team
  - C. Determine how many tasks are in the entire project, chunk the tasks into specific iterations, and determine how long each iteration will take
  - D. Allowing the team leader to determine the time frame of each iteration

A. Breaking down the requirements into small, refined chunks of work will enable your group to better estimate how long each task will take and plan a reasonable iteration.

B is incorrect because while knowing how many team members are available to complete the tasks is also critical, agile first considers the decomposition of the work and then the team assigns the work accordingly. C is incorrect because this approach is not based first on value and doesn't consider the likelihood of change. Agile address the known requirements for each iteration during iteration planning. D is incorrect because iterations are pre-determined at the start of the project.

6. You have been on several agile teams, so you are very familiar with user stories. There are several new people on your team and you've been asked to describe what a "user story" is. How do you explain this in just a few words?

A. A user story is a small chunk of functionality that should take one to three days to finish.

B. A user story is a narrative of requirements.

C. A user story is the background of the user community.

D. A user story is how the user community plans to use the product.

A. A user story is a small chunk of functionality that typically takes one to three days to complete. The user story should answer the questions that the team needs answered to define the task in more detail. There is no set of right or wrong questions to ask or answers; the team should come up with what best fits their needs.

B, C, and D are incorrect as these definitions are inaccurate descriptions of user stories.

7. Once all user stories are written, they are compiled to create a backlog, or master list, of all work that needs to be completed, sorted by priority. As a story is completed and delivered, it is removed from the backlog. How is this process beneficial?
- A. Having all work to be done listed in a single document is a key agile practice, which shows the progress of scope and the status of the project.

- B. Having all work on one list makes it easier to bypass a story that didn't pass testing successfully.
- C. It provides a visual display of how long the project is going to take.
- D. It provides a visual display of how much the project is going to cost.

A. Managing the project requirements in a single document is a fundamental agile practice. A single source of information about the work being done lends itself to effective communication and provides a visual of scope and status. B, C, and D are incorrect because the backlog process isn't meant to bypass a story or determine how long the project will last or the cost of the project.

- 8. The business partner continuously refines, or grooms, the backlog. This includes adding new stories, reprioritizing stories, and removing stories. What is the development team responsible for in this process?
  - A. Adding new story functionality
  - B. Deleting stories that don't work
  - C. Estimating the work so the customer can prioritize effectively
  - D. Changing the business needs
- C. The only task the development team is responsible for in the grooming process is estimating the work so that the customer can prioritize it to ensure it is value-based.  
A, B, and D are incorrect. The development team doesn't add new story functionality, delete stories, or change the business needs.
- 9. Making absolute estimates on how long it will take to complete a task is very difficult, so agile teams use which of the following methods to estimate more accurately?
  - A. Estimate how many user stories can be done in a day
  - B. Base absolute estimates on hour rather than day
  - C. Use comparative estimates or relative sizing
  - D. Use value-based priority

**C.** Agile teams rely on relative sizing, which uses a relative unit called story points. Estimating in terms of relative size rather than absolute allows the making of more useful estimates rather than trying to predict an absolute time period. The team can only complete so many user stories per iteration. A is incorrect because user stories are not mapped to days of an iteration. B is incorrect because estimates are not made by hours, but rather by relative sizing of the user stories. D is incorrect because value-based prioritization is how the product backlog is organized, not how user stories are estimated.

**10.** Who should own the process of story point sizing?

- A.** The PMO
- B.** The agile team
- C.** The agile team leader
- D.** The business partner

**B.** The story point sizing process is created and owned by the agile team. The team is the most qualified to determine the amount of effort required to complete each story. A and D are incorrect because the PMO and business partner are not involved with that level of detail of the project. C is incorrect because the agile team leader supports the team in creating the story point sizing, but is not responsible for the task.

**11.** When your agile team is estimating story points, it is important to include which of the following?

- A.** Vacations and sick days
- B.** Testing and refactoring
- C.** Server backup time
- D.** Meeting times

**B.** Story point estimates should include all known activities required to complete the story, which should include testing and refactoring, level of complexity, level of risk, etc. Including all activities proves to be more accurate, in contrast to adding a certain fudge factor.

A, C, and D are incorrect. Vacations and sick days should not be a factor in the estimate, only the known activities should be considered.

Server backup times are not included as part of the story point estimating. Meeting times are also not included in estimating the stories.

12. When your agile team is nearing the end of creating story point estimates, you go through a reality check by which of the following processes?
  - A. Affinity estimating
  - B. T-shirt sizing
  - C. Story maps
  - D. Relative sizing

A. Affinity estimating is a comparative view of the estimates. You want to compare the sizes of story points to each other. Confirm that all story points with an estimate of three story points are all about the same size, effort, level of risk, etc. B is incorrect because T-shirt sizing refers to an actual process of estimating the story sizes. C is incorrect because a story map is a tool to determine the project priorities. D is incorrect because relative sizing is the agile method used to assign the story points.
13. Your agile team has decided to display a product roadmap. What is this roadmap used for?
  - A. To display where the team is in the project life cycle
  - B. To display how many user stories have been completed
  - C. To display product releases and what will be included
  - D. To display the total number of story points in the project

C. A product roadmap is a visual display of the product releases and what will be included in each release. This is a high-level planning tool that should be revised as necessary. A, B, and D are incorrect because the team's status, completed user stories, and total story points are not reflected in the product roadmap, which reflects the project at a much higher level.
14. Your agile team has decided to use planning poker to determine point estimates for their user stories. What happens when several members

estimate a user story at three points or under and several members estimate the same story at ten points?

- A. The points assigned to the story are averaged.
  - B. The high and low are discarded and then the points remaining are averaged.
  - C. The user story is changed so everyone can agree upon the point value.
  - D. The story is discussed again to come to a consensus.
- D. When there is a difference in the estimated points of this extent, there is most likely a misunderstanding or not all user story information has been shared. The user story needs to be discussed further and the team needs to come to a consensus of the point value of the story.  
A, B, and C are incorrect because they are not rules of planning poker.

15. There is a tool that agile teams use that is usually timeboxed and explores an approach, investigates an issue, or reduces a project risk. What is this tool called?

- A. Iteration
  - B. Spike
  - C. User story
  - D. Relative unit
- B. A spike is a key tool used by agile teams to resolve problems as early as possible. A spike is a short effort that can be done at any time during a project. It is not unusual for spikes to be scheduled at the beginning of a project before any development efforts begin. A, C, and D are incorrect choices. Iterations, user stories, and relative units do not investigate issues or project risks.

16. One of the iterations your agile team was going to work on was deemed a “fast failure.” What does this mean?

- A. The iteration was too large.
- B. All the work for the iteration was developed, tested, and failed.
- C. The proof-of-concept of the iteration wasn’t successful.

- D. There were not enough user stories in the iteration to succeed.
- C. Fast failure means the proof-of-concept effort was not successful and therefore the iteration was eliminated. The term fast failure is primarily used for entire projects to allow a company to reduce the cost invested, allowing those funds to be placed on viable projects. A, B, and D are incorrect because fast failure does not apply to the size of the iteration, development, or how many user stories are in an iteration; the failure of the iteration is decided prior to the iteration starting.
17. Your agile team is in the release planning phase for the next iteration. What is the most accurate tool to use to determine how much work can be done in the next release?
- A. User stories
  - B. Velocity
  - C. Story points
  - D. Affinity estimating
- B. Agile generally uses the velocity trend over the last several iterations to plan how much work can be completed in the next release. Gathering groups of user stories or summing story points factor into the velocity in which iterations are completed. A, C, and D are incorrect choices as user stories, story points, and affinity estimating are not used to determine how much work can be done in the next release of the project.
18. Why is the velocity of completed iterations used to estimate the project's progress and duration estimates for the remainder of the project?
- A. Previous iterations include all variables of development.
  - B. The same number of user stories are completed in each iteration.
  - C. The same team members should be on each iteration.
  - D. The team is more capable of completing tasks after several iterations.
- A. Previous iterations typically include all tasks and pitfalls of an iteration. B is incorrect because the same number of user stories can't

be used to predict future progress since not all stories are equal in complexity. C is incorrect because although consistent team membership is a plus, changes in members should not change the velocity of an iteration. D is incorrect because the tasks of each iteration will be different.

**19.** Your agile team is planning for the next iteration. How should this process begin?

- A.** By breaking down user stories into tasks
- B.** By defining the acceptance criteria
- C.** By selecting what user stories should be in the iteration
- D.** The process of planning for the next iteration should begin by analyzing the high-value user stories in the backlog and having the business partners prioritize or reprioritize the stories.

A, B, and C are incorrect because, although they are included in the planning meeting, analyzing the user stories in the backlog is performed first.

**20.** Once an iteration is in progress, a daily standup meeting occurs. This is a very quick meeting that is timeboxed at 15 minutes or less, and the team members stand so the meeting stays focused and on track. There are only three questions that should be answered by every team member that has an active task. Which one of the following is not a question included in the daily standup meeting?

- A.** What have I worked on since the last meeting?
- B.** What do I plan to finish today?
- C.** How far behind am I?
- D.** Are there any impediments to my progress?
- C.** “How far behind am I?” is not a question that participants answer in the daily standup.

A, B, and D are incorrect because they are the only questions that should be answered by each member with an active task. If there needs to be any further questioning or discussion, it should occur after the meeting.

**Secondary risk** Secondary risk occurs when one risk is solved but the risk solution inadvertently creates one or more new risks.

**Special causes of variance** Special causes of variance are unusual occurrences that influence project progress. For example, the power went out for two days, or three team members caught the flu, or there was an emergency in the business.

**Swarming** Swarming happens when multiple people, often the entire project team, attack a single problem, user story, or task.

**Technical debt** Technical debt is the backlog of work that's caused if the team fails to do regular clean-up on the project code. It's the maintenance, standardization, and refactoring of the code.

**Transference** Transference is anything that you do that transfers the risk to someone else, usually with a contractual relationship. You hire someone to manage that part of the risk.

**Trend analysis** Trend analysis allows you to predict future performance based on what's happened already in the project.

**Zero-sum reward** A zero-sum reward means that only one person can win, such as employee of the month. That can create envy and make the non-winners feel poorly about their work and contributions.

## Questions

1. Beth is the project manager of a new agile project in her organization. Her team has identified a significant problem, though the problem may not happen until late in the project timeline. What is the best way to minimize the impact of a problem during a project even if it may not occur to late in the project?
  - A. Ignore the problem
  - B. Don't waste time trying to fix the problem until later in the project
  - C. Identify it early, diagnose it, and fix it as soon as possible

- D.** Make the fix a task in the next iteration
2. As the agile team leader, you have visibility to the project's budget and you realize that as the team progresses through iterations, the cost of the project continues to increase. What might be the cause?
- A. Scope creep
  - B. Technical debt
  - C. Unexplained increase of hours worked
  - D. Adding testers to the team
3. Your agile team leader has asked the entire team to submit the cycle time for the next three iterations. What does the leader mean by cycle time?
- A. The time it takes to complete each iteration from start to finish
  - B. The time it takes to determine what is in the iteration
  - C. The time it will take to complete all three iterations
  - D. The time that is between each iteration for review and feedback
4. When the agile team leader notices that the throughput of the team has gone up, the team leader can attribute the increase to which of the following?
- A. The productivity of one team member has increased.
  - B. The testing went well.
  - C. The iteration was estimated more accurately.
  - D. The development was more efficient.
5. Your agile team leader has decided to track defect cycle time. Which of the following best describes what is being tracked?
- A. How many defects were discovered during a cycle time
  - B. How long it took to fix a defect from introduction to completion of the fix
  - C. Which developer was creating the defects during a cycle time
  - D. How inaccurate the estimate was of the cycle time
6. Your agile team leader posts the team's defect rates found by month and found by release. The team keeps a very close eye on these charts

and does their best to keep these rates as low as possible. Occasionally, a defect will make it all the way through testing and quality assurance. What are these types of defects called?

- A. Run-away defects
  - B. Technical debt
  - C. Escaped defects
  - D. Failure mode
7. Your agile team's defect rates seem to vary quite a bit from iteration to iteration. Your team leader understands that not every iteration will be the same, but feels the variation is significant enough to investigate. What type of variation can your leader label this?
- A. Common cause variation
  - B. Special cause variation
  - C. Severe variation
  - D. Mild variation
8. Your agile team leader has been tracking the iteration velocity and has compared that to the time left on the project. The leader has determined that the fewest number of iterations that can be done per month is seven and the most possible is ten iterations. What is this measurement called?
- A. Trend analysis
  - B. Control limits
  - C. Variance analysis
  - D. Cycle time
9. An agile team begins with a list of business features, broken out into logical groups of work. This list is then prioritized by business value by attributing a dollar value to each iteration. Once the agile development team analyzes the list and adds the risks and threats, along with the risk impact in dollars, the list is then reprioritized. What is the result of this activity called?
- A. Risk-adjusted backlog
  - B. Expected monetary value

- C. Risk probability
  - D. Risk impact
- 10. An agile team analyzes the risks of the requirements to assign a risk probability and an impact score to each risk. Those scores are used to calculate risk severity. How are the high-risk items handled by the agile team?
  - A. They change the requirement so it isn't a risk.
  - B. The team schedules the high-risk items in early iterations to be handled before they become compounded.
  - C. The team asks the business partner to create a new requirement.
  - D. The team leaves the high-risk items all in one iteration toward the end of the project.
- 11. There are lots of opportunities for problem solving and transparency throughout the project. What agile tasks are used to minimize the need for ad hoc problem solving?
  - A. Writing user stories
  - B. Using trend analysis
  - C. Iteration reviews and retrospectives
  - D. Determining the special cause variation
- 12. Your agile team leader has scheduled a problem-solving session because development has stopped due to a roadblock. The agile method is to involve not only the business partner and project lead but also the entire team. Why is this method beneficial?
  - A. The developers have the best theoretical solutions.
  - B. Having the entire team involved will keep the meeting shorter.
  - C. The team will introduce multiple fixes to select from.
  - D. The team together can identify, diagnose, and solve the issue, which facilitates buy-in.
- 13. When your agile team leader involves the entire team in problem solving, what message does that send to the team?
  - A. The team lead doesn't trust one person's recommendation.

- B. The team lead believes team members can be supportive beyond their roles.
  - C. The team lead doesn't think the business partners have the resolution.
  - D. The team lead doesn't know the resolution.
- 14. The new agile team leader learned early in the project what types of problems should be vetted through the entire team for consensus. What types of problems require team involvement?
  - A. When a task cannot move forward
  - B. To make decisions on training standards
  - C. When developers can't agree on successful code
  - D. To determine how to reduce project costs
- 15. Why is it important for the agile team leader to ensure there is a safe and open environment for the team?
  - A. So there is no turnover in the team
  - B. So the team feels free to admit to problems and failures and ask for help
  - C. To protect the budget
  - D. So the entire team becomes friends
- 16. In addition to providing caves for agile team members to retreat to for some quiet time, what else can the team leader suggest to allow team members time to concentrate?
  - A. Allowing colocated team members to work remotely
  - B. Scheduling team members to go to caves
  - C. Designating a certain period as a quiet work time in colocated areas
  - D. Banning cell phones in the work area
- 17. Consider the importance of project communications among the project team stakeholders. With what method does your agile leader encourage feedback from stakeholders?
  - A. Having a weekly conference call with stakeholders

- B. Sending out status reports to stakeholders and asking for feedback
  - C. Conducting iteration reviews that include all stakeholders
  - D. Enlisting stakeholder feedback only when there is a roadblock
- 18. When analyzing variances and it is determined that the difference is a common cause variance, what is the next step the agile leader should take?
  - A. Accept the variance and move forward
  - B. Get all stakeholders' approval to accept the variance
  - C. Have the agile team determine how to close the variance
  - D. Evaluate the variance again to see if the difference can be closed
- 19. Your project's business partner is pushing to add more features to each iteration. Your agile team has already projected what the next few iterations will include based on the business partner's priorities and the team's risk analysis. What do you think the business partner is missing by pushing for additional features?
  - A. The time it takes to perform housekeeping of code
  - B. Team members get sick or schedule vacation days during iterations
  - C. The time it takes to write user stories
  - D. The time it takes to test code
- 20. Your team leader uses several agile tools to uncover potential problems before they occur. Which of the following is one of those tools?
  - A. Affinity estimating
  - B. User story
  - C. Iteration planning
  - D. Daily standup meetings

## Questions and Answers

1. Beth is the project manager of a new agile project in her organization. Her team has identified a significant problem, though the problem

may not happen until late in the project timeline. What is the best way to minimize the impact of a problem during a project even if it may not occur too late in the project?

- A. Ignore the problem
- B. Don't waste time trying to fix the problem until later in the project
- C. Identify it early, diagnose it, and fix it as soon as possible
- D. Make the fix a task in the next iteration

**C.** Beth should identify the issue early so it can be diagnosed and fixed before it begins to affect the rest of the project.

A is incorrect because Beth shouldn't ignore the problem—that won't resolve the problem. B is incorrect because waiting until later in the project to address the problem may allow the problem to grow larger and it doesn't prepare the team for tackling the problem. D is incorrect because this too is a delay tactic. Beth should address the problem as soon as possible with the project team.

2. As the agile team leader, you have visibility to the project's budget and you realize that as the team progresses through iterations, the cost of the project continues to increase. What might be the cause?

- A. Scope creep
- B. Technical debt
- C. Unexplained increase of hours worked
- D. Adding testers to the team

**B.** Of all the choices, the best answer for the cost increase is technical debt. Technical debt is the backlog of things that should be done, but aren't, because of a push to deliver features, such as regular cleanup, maintenance, and refactoring. This increases the cost of development in future iterations because these tasks need to be done at some point. It is much easier and efficient to factor the time it takes to complete this maintenance during the iteration opposed to doing it at some other time.

A is incorrect because scope creep refers to the small, undocumented changes that enter the project. C is incorrect because the hours worked are mapped against each user story. D is incorrect because

there is no evidence in the question that additional testers have been added to the project team.

3. Your agile team leader has asked the entire team to submit the cycle time for the next three iterations. What does the leader mean by cycle time?
  - A. The time it takes to complete each iteration from start to finish
  - B. The time it takes to determine what is in the iteration
  - C. The time it will take to complete all three iterations
  - D. The time that is between each iteration for review and feedback

A. Cycle time is the time it takes to complete an iteration from start to finish. Cycle time is a subset of lead time, which measures the time it will take to complete the entire project.  
B, C, and D are incorrect because cycle time doesn't address the time required to determine what's in the iteration, the duration of the iterations, or the timeboxed ceremonies between iterations.
4. When the agile team leader notices that the throughput of the team has gone up, the team leader can attribute the increase to which of the following?
  - A. The productivity of one team member has increased.
  - B. The testing went well.
  - C. The iteration was estimated more accurately.
  - D. The development was more efficient.

A. The best answer is that throughput is increasing because the productivity of one team member has increased, which could be a cause of the other choices in this question. There could be many reasons for the increase in throughput; adding more team members or outsourcing a piece of the project are more examples.  
B is incorrect because testing could still go well without velocity being affected. C is incorrect because iterations can be estimated accurately, but productivity meets the estimate. D is incorrect because development could still be efficient, but productivity could not increase.

5. Your agile team leader has decided to track defect cycle time. Which of the following best describes what is being tracked?
- A. How many defects were discovered during a cycle time
  - B. How long it took to fix a defect from introduction to completion of the fix
  - C. Which developer was creating the defects during a cycle time
  - D. How inaccurate the estimate was of the cycle time

**B.** Defect cycle time is the measurement of how long it took to fix a defect once it was discovered. The defect cycle time length directly affects the cost and time frame of an iteration, or cycle time.

A is incorrect because it's not how many defects were discovered, but how long it takes to fix a defect. C is incorrect because who is creating the defects isn't part of the defect cycle time. D is incorrect because accuracy of the estimate of a cycle time is tracked, but it's not part of the defect cycle time amount.

6. Your agile team leader posts the team's defect rates found by month and found by release. The team keeps a very close eye on these charts and does their best to keep these rates as low as possible. Occasionally, a defect will make it all the way through testing and quality assurance. What are these types of defects called?
- A. Run-away defects
  - B. Technical debt
  - C. Escaped defects
  - D. Failure mode

**C.** Defects that make it through all checkpoints to production are called escaped defects. This is the costliest type of defect since its remediation will require a significant amount of rework, testing, retesting, and discovering any dependent code and then repeating the testing process.

A is incorrect because run-away defects isn't a valid term. B is incorrect because technical debt describes the code and solution that needs to be refactored or cleaned before releasing the product. D is incorrect because failure mode describes the team's attitude and habits in the project.

7. Your agile team's defect rates seem to vary quite a bit from iteration to iteration. Your team leader understands that not every iteration will be the same, but feels the variation is significant enough to investigate. What type of variation can your leader label this?
- A. Common cause variation
  - B. Special cause variation
  - C. Severe variation
  - D. Mild variation
- A. A common cause variation is one that refers to day-to-day differences of doing work.
- B is incorrect because special cause variation is variance caused by special or new factors. C and D are incorrect because severe variation and mild variation aren't valid agile terms.
8. Your agile team leader has been tracking the iteration velocity and has compared that to the time left on the project. The leader has determined that the fewest number of iterations that can be done per month is seven and the most possible is ten iterations. What is this measurement called?
- A. Trend analysis
  - B. Control limits
  - C. Variance analysis
  - D. Cycle time
- B. This tool, or measurement, is called control limits. Setting a minimum and maximum of a certain entity, whether it be velocity, budget, time off, etc., lets the agile stakeholder know exactly what can be done, spent, or utilized in a given period.
- A is incorrect because trend analysis is a forward-looking analysis estimating what might happen in the future. C is incorrect because variance analysis is the difference between estimates. D is incorrect because cycle time is the duration of time it will take to complete a task.
9. An agile team begins with a list of business features, broken out into logical groups of work. This list is then prioritized by business value

by attributing a dollar value to each iteration. Once the agile development team analyzes the list and adds the risks and threats, along with the risk impact in dollars, the list is then reprioritized. What is the result of this activity called?

- A. Risk-adjusted backlog
- B. Expected monetary value
- C. Risk probability
- D. Risk impact

A. A risk-adjusted backlog does not really produce a precise dollar value for either the list of work to be done or the risks or threats involved in the development. Instead, the exercise is used to facilitate discussions between the business team and the agile team about how to sequence the work items.

B is incorrect because expected monetary value (EVM) is the probability of a risk times the impact of the risk event. C is incorrect because risk probability is the odds of a risk happening. D is incorrect because risk impact represents the effect the risk will have on the project objectives.

10. An agile team analyzes the risks of the requirements to assign a risk probability and an impact score to each risk. Those scores are used to calculate risk severity. How are the high-risk items handled by the agile team?

- A. They change the requirement so it isn't a risk.
- B. The team schedules the high-risk items in early iterations to be handled before they become compounded.
- C. The team asks the business partner to create a new requirement.
- D. The team leaves the high-risk items all in one iteration toward the end of the project.

B. High-risk requirements are scheduled in early iterations, if possible, to be dealt with and even avoided in the project because the risks were identified and scheduled earlier in the project timeline rather than later.

A is incorrect because changing the requirement will not make the project a success. C is incorrect because creating a new requirement

doesn't address the risk event. D is incorrect because leaving high-risks requirements to be done at the end of a project is not a viable option as the risk can have a greater impact later in the project than earlier in the project because it can affect work that's already been completed.

11. There are lots of opportunities for problem solving and transparency throughout the project. What agile tasks are used to minimize the need for ad hoc problem solving?

- A. Writing user stories
  - B. Using trend analysis
  - C. Iteration reviews and retrospectives
  - D. Determining the special cause variation
- C. Efforts to identify issues during an iteration's review and retrospective are included in the estimate of the iteration. Agile methods consider the team's lessons learned to be too critical to be saved for the post-mortem of a project, so they are presented at the end of each iteration.

A is incorrect because user stories don't address problems in the project. B is incorrect because trend analysis uses lagging metrics to see what's already happened in the project. D is incorrect because determining the special cause variation isn't an agile task that's part of the agile project management approach.

12. Your agile team leader has scheduled a problem-solving session because development has stopped due to a roadblock. The agile method is to involve not only the business partner and project lead but also the entire team. Why is this method beneficial?

- A. The developers have the best theoretical solutions.
  - B. Having the entire team involved will keep the meeting shorter.
  - C. The team will introduce multiple fixes to select from.
  - D. The team together can identify, diagnose, and solve the issue, which facilitates buy-in.
- D. One of the most important benefits of an all-inclusive problem-solving session is that the team will buy into a fix that they have

discussed and solved, whereas they might not buy into a fix coming from someone that has not seen the entire picture of the issue.

A is incorrect because there's no evidence that developers have the best theoretical solutions. B is incorrect because the duration of the meeting won't necessarily affect the benefits of the meeting. C is incorrect because while the team may introduce multiple solutions, this isn't the best answer presented.

- 13.** When your agile team leader involves the entire team in problem solving, what message does that send to the team?
- A.** The team lead doesn't trust one person's recommendation.
  - B.** The team lead believes team members can be supportive beyond their roles.
  - C.** The team lead doesn't think the business partners have the resolution.
  - D.** The team lead doesn't know the resolution.
- B.** When the entire team is involved in problem solving, that sends them the message that they are not pigeonholed to be only a developer, tester, coder, etc. Since agile teams work so closely, they are more apt to bounce ideas off each other.
- A and C are incorrect because an agile team leader wouldn't go to one person or a business partner to solve a problem or even try themselves but should instead involve the whole team. D is incorrect; just because the agile leader asks for input does not indicate they don't know what to do, rather, it demonstrates the leader values the input of others. The agile methodology is to engage the entire team.
- 14.** The new agile team leader learned early in the project what types of problems should be vetted through the entire team for consensus. What types of problems require team involvement?
- A.** When a task cannot move forward
  - B.** To make decisions on training standards
  - C.** When developers can't agree on successful code
  - D.** To determine how to reduce project costs

**A.** The agile team leader should not bring the team together to problem solve when the issue is focused to specific roles.  
B and C are incorrect because, for example, developers may not have an opinion on how trainers should standardize their documentation, and a technical writer probably cannot help solve a coding issue. The team should be brought together when every team member potentially has valuable input on the issue. D is incorrect because reducing the project costs isn't a team problem-solving challenge and usually happens prior to the project, with the product owner and value management team.

**15.** Why is it important for the agile team leader to ensure there is a safe and open environment for the team?

- A.** So there is no turnover in the team
- B.** So the team feels free to admit to problems and failures and ask for help
- C.** To protect the budget
- D.** So the entire team becomes friends

**B.** Having a safe and open environment is critical to reassuring team members that they will not be criticized for admitting to a problem or failure. Asking for help allows the team to meet deadlines, avoid cost overruns, and try different approaches.

A is incorrect because while no or little staff turnover is an admirable goal, it's not the best choice presented. C is incorrect because the safe and open environment is not created to protect the budget. D is incorrect because, while agile projects do promote some social aspects, friendships among the project team isn't the best choice or goal of the open and safe environment.

**16.** In addition to providing caves for agile team members to retreat to for some quiet time, what else can the team leader suggest to allow team members time to concentrate?

- A.** Allowing colocated team members to work remotely
- B.** Scheduling team members to go to caves
- C.** Designating a certain period as a quiet work time in colocated areas

- D.** Banning cell phones in the work area
- C.** Designating a certain amount of time daily to allow team members to focus on their task without interruption is a good idea.  
A is incorrect because working remotely is not always a typical option, although sometimes it cannot be avoided. B is incorrect because scheduled cave time may be counterproductive by removing members at a time that may not be convenient. D is incorrect because cell phones are common tools for organizational communication. A rule may be created, however, to take phone calls out of the common area.
- 17.** Consider the importance of project communications among the project team stakeholders. With what method does your agile leader encourage feedback from stakeholders?
- A.** Having a weekly conference call with stakeholders  
**B.** Sending out status reports to stakeholders and asking for feedback  
**C.** Conducting iteration reviews that include all stakeholders  
**D.** Enlisting stakeholder feedback only when there is a roadblock  
**C.** Confirming and soliciting feedback from stakeholders at the end of each iteration not only saves time by ensuring the team is on the right path, but also saves cost due to unnecessary rework.  
A and B are incorrect because conference calls and status reports may spark feedback, but having an iteration review ensures all stakeholders are working from the same requirements. D is incorrect because the project manager and the project team want stakeholder feedback for positive and negative scenarios, not only when there are roadblocks to the project.
- 18.** When analyzing variances and it is determined that the difference is a common cause variance, what is the next step the agile leader should take?
- A.** Accept the variance and move forward  
**B.** Get all stakeholders' approval to accept the variance  
**C.** Have the agile team determine how to close the variance  
**D.** Evaluate the variance again to see if the difference can be closed

**A.** When the agile team has determined the difference is a common cause variance, the team leader should accept that there will be small differences and move on to the next task. Trying to rectify a common cause variance is a form of micromanaging the project instead of focusing on true roadblocks.

B is incorrect because common causes of variances are implicitly accepted. C and D are incorrect because common causes of variances are part of the agile framework and don't need to be closed.

- 19.** Your project's business partner is pushing to add more features to each iteration. Your agile team has already projected what the next few iterations will include based on the business partner's priorities and the team's risk analysis. What do you think the business partner is missing by pushing for additional features?

- A.** The time it takes to perform housekeeping of code
- B.** Team members get sick or schedule vacation days during iterations
- C.** The time it takes to write user stories
- D.** The time it takes to test code

**A.** Since business partners are focused on their requirements and the value that is added to the business, they may overlook the time it takes to perform housekeeping on the code being written. This cleanup and simplification, called refactoring, is essential to having solid code that works now and is easy to maintain in the future.

B is incorrect because team members getting sick or vacation days isn't a consideration in ideal days of agile projects. C is incorrect because writing user stories doesn't happen during the iteration. D is incorrect because testing code is part of the iteration timeline.

- 20.** Your team leader uses several agile tools to uncover potential problems before they occur. Which of the following is one of those tools?

- A.** Affinity estimating
- B.** User story
- C.** Iteration planning
- D.** Daily standup meetings

**D.** Daily standup meetings are an important tool used to identify potential problems by answering the question if there are any roadblocks that need to be removed.

A is incorrect because affinity estimating is an approach to sizing stories, not addressing potential problems. B and C are incorrect because while user stories and iteration planning are valuable tools to use to identify issues, the best approach that's part of the agile framework is to utilize the daily standup meeting.

**Process cycle efficiency** Process cycle efficiency is a metric in value stream analysis that is calculated by dividing the amount of value-added time by the total cycle time. The higher the process cycle efficiency value, the more successful the project is. Lower values indicate a high amount of non-value-added activity and waste in the project.

**Project pre-mortem** The project pre-mortem is an event that happens before any delivery occurs on your project. It's the earliest opportunity for your team to consider improvements to their software process. This event produces a detailed look from your team at all potential causes of failure on the project ahead, ranked by priority.

**Shore's Self-Assessment Chart** Shore's Self-Assessment Chart calls for the team to plot scores across the areas of planning, developing, thinking, collaborating, and releasing along a radar diagram.

**Systems thinking** Systems thinking is a structured approach to do the work and includes analysis of the system's processes to reach the defined result.

**Tabaka's Assessment Model** Tabaka's Assessment Model allows teams to score themselves on questions on self-organization, empowerment, and participatory decision making. With data in hand, teams can then focus on the areas with the lowest scores for improvement.

**Value stream analysis** Value stream analysis is a Lean manufacturing technique that begins with identifying the product or service to analyze. Value stream analysis studies the current state of a process and then designs the future state for the process with a goal of efficiency and improvement. Value stream analysis gathers data across at least one iteration on what your process includes and determines overall efficiency for each iteration.

## Questions

1. Your team leader has created a high-level outline for the first few iterations. You are new to agile project management and asked why lessons learned are in each iteration rather than at the end of the project. Your team leader gave which of the following explanations?

- A. To add time to the iteration in case any roadblocks are encountered
  - B. To enable the team to apply the benefits of lessons learned to the next iteration, and so on
  - C. To show the business partners that we are sharing information
  - D. To show the business partners that we understand the project goals
2. You are on a new agile team and the stakeholders are using the agile methodology without trying to tailor the processes at all. Why is this a good idea?
- A. With any change, the team is at risk of losing the benefit for which the methodology was designed
  - B. To make the project move faster
  - C. So a project manager or team lead can be eliminated
  - D. So all the predesigned organizational templates can be used
3. Your agile team leader is discussing whether to tailor the agile methodologies because of what he refers to as systems thinking. Which of the following best describes systems thinking?
- A. When the software is being analyzed for defects
  - B. Analyzing a project that is far off course
  - C. Classifying projects in terms of their complexity
  - D. When the stakeholders cannot agree on requirements
4. Your agile project manager has asked for a proof of understanding from the team describing the customer's requirements. What would you deliver?
- A. A written document describing, in the team's terms, the customer's requirements
  - B. A high-level prototype of the requirements
  - C. A project plan listing requirements and sequence of events
  - D. A feedback meeting where the team describes their understanding to the business partners

5. While your agile team is going through a value stream mapping exercise, you have been asked for total cycle time. What two factors should be considered when calculating total cycle time?

  - A. Value-added time and non-value added time
  - B. Systems thinking and process analysis
  - C. Building and testing
  - D. Testing and documenting
6. Your agile team leader recognizes that the team is disagreeing and seems to be overthinking a requirement. The team feels that a value stream mapping session would help identify the discrepancy. Once the scenario is defined, what is the next step?

  - A. Define the starting point and ending point
  - B. Review the requirements
  - C. Write user stories
  - D. Write test scripts
7. As you look at your agile team's high-level project plan, you notice there are three pre-mortems scheduled. You ask your leader to define a pre-mortem. Which of the following is the explanation given?

  - A. It is a session that identifies the business requirements.
  - B. It is a session that identifies why the project will be a huge success.
  - C. It is a session that envisions failures and how to mitigate them.
  - D. It is a session that identifies which team members need to be added to the team.
8. The agile method of developing in small increments, delivering a product, and receiving stakeholders' feedback lends itself to which of the following?

  - A. Value stream mapping
  - B. Systems thinking
  - C. Process analysis
  - D. Continuous improvement

- 9.** Methods used in agile projects to elicit feedback include prototypes, simulations, and demonstrations. Why is it essential to deliver one of these methods to users of the product for feedback, sooner rather than later?
- A.** It allows users to begin training on the new functionality.
  - B.** To learn if there are differences between requirements and what is wanted.
  - C.** It allows users to create new forms that will be required for the new system.
  - D.** It allows users to eliminate certain roles in their group.
- 10.** Your agile team leader has scheduled retrospectives for the team after each iteration. The purpose of this meeting is best described by which of the following?
- A.** It's an opportunity for the team to inspect and improve their methods and teamwork.
  - B.** It allows the team to voice their grievances.
  - C.** It allows the team to prioritize new requirements.
  - D.** It allows team members to switch roles.
- 11.** Your agile team leader feels strongly about the benefits of retrospectives being held after each iteration. Why do you think it is so important to her?
- A.** Non-productive team members can be eliminated.
  - B.** It proves to the stakeholders that the team leader is taking charge of the project.
  - C.** It allows the team leader to know all the details of each iteration.
  - D.** The results of a retrospective can offer immediate improvements.
- 12.** In an agile environment, the steps set the stage, gather data, generate insights, decide what to do, and close represent which process?
- A.** Value stream mapping
  - B.** Feedback
  - C.** Pre-mortems

#### **D. Retrospectives**

- 13.** During a retrospective, your team leader may single out an issue that was faced during an iteration and ask the team to go through the exercise of the five whys. What is this meant to accomplish?
  - A.** It typically gets to the root of the cause.
  - B.** It prevents the team from shifting blame.
  - C.** It gathers five reasons for the issue.
  - D.** It allows five team members to offer their opinion.
- 14.** Your agile leader occasionally asks the team to do a self-assessment, meaning a team self-assessment, not an individual self-assessment. The questions that the team addresses for this assessment revolve around which of the following?
  - A.** How the team gets along
  - B.** How the team performs and delivers together
  - C.** How the team reacts to business partners
  - D.** How the team makes decisions
- 15.** When your agile team is going through a pre-mortem, each member is asked to write down possible reasons they think some task or action might fail. The best method to reveal everyone's list and consolidate it is to go around the room round-robin. What is the top benefit of this approach?
  - A.** No one is reading an entire list of problems.
  - B.** When common issues are identified, other team members can cross it off their list.
  - C.** Each issue can be discussed when presented.
  - D.** It forces everyone to attend and stay for the entire meeting.
- 16.** After conducting a retrospective for your last iteration, what type of improvement could you expect to see on your agile team?
  - A.** Productivity
  - B.** Attendance
  - C.** Remote access

- D. Fewer meetings**
17. When the result of a retrospective has identified issues and root causes, the next step is to decide how to avoid the same types of issues going forward. What is one agile method to accomplish this process?
- A. Fishbone analysis**
  - B. Prioritize with dots**
  - C. Triple nickels**
  - D. SMART goals**
18. When starting a new agile project, you are told you will be using a hybrid model. What does this mean?
- A. The first half of the project will be done in a traditional project method.**
  - B. The team member selection will be done traditionally.**
  - C. An agile model is used in combination with a traditional method.**
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19. Setting the stage for a retrospective includes which of the following?
- A. Inviting all stakeholders**
  - B. Distributing a clear and concise agenda**
  - C. Asking for anonymous input**
  - D. Defining a specific start and stop time**
20. Which of the following is a method utilized to close a retrospective and reinforce its value?
- A. Have a stakeholder dinner**
  - B. Have the team hold a separate meeting to discuss wins**
  - C. Give out awards to the best performer**
  - D. Go through a plus/delta exercise**

## Questions and Answers

**1.** Your team leader has created a high-level outline for the first few iterations. You are new to agile project management and asked why lessons learned are in each iteration rather than at the end of the project. Your team leader gave which of the following explanations?

- A.** To add time to the iteration in case any roadblocks are encountered
  - B.** To enable the team to apply the benefits of lessons learned to the next iteration, and so on
  - C.** To show the business partners that we are sharing information
  - D.** To show the business partners that we understand the project goals
- B.** Taking immediate action from lessons learned is critical for agile projects where the environment changes quickly or a high degree of risk exists, because not making any adjustments in the projects trajectory could result in project failure.

A is incorrect because adding lessons learned to each iteration may add time to the process but it is not intended to be used as a buffer. C is incorrect because the value of lessons learned is not to show business partners that you're sharing information. D is incorrect because lessons learned are opportunities for improvement, not to show the understanding of project goals.

**2.** You are on a new agile team and the stakeholders are using the agile methodology without trying to tailor the processes at all. Why is this a good idea?

- A.** With any change, the team is at risk of losing the benefit for which the methodology was designed
  - B.** To make the project move faster
  - C.** So a project manager or team lead can be eliminated
  - D.** So all the predesigned organizational templates can be used
- A.** Making changes to the agile methodology prior to learning the benefits can be risky. Agile methods have been developed and refined based on many projects and by experienced team leaders and members. Most agile tasks are related and dependent on other tasks,

so dropping or adding tasks may throw the agile project out of balance.

B is incorrect because tailoring can, once the approach of agile project management is mastered, make the project move faster. C is incorrect because tailoring doesn't remove the project manager or team lead. D is incorrect because the goal of tailoring is to customize the approach for a specific environment and to add value to the project, not to fit the project to organizational templates.

3. Your agile team leader is discussing whether to tailor the agile methodologies because of what he refers to as systems thinking. Which of the following best describes systems thinking?
  - A. When the software is being analyzed for defects
  - B. Analyzing a project that is far off course
  - C. Classifying projects in terms of their complexity
  - D. When the stakeholders cannot agree on requirements

C. One part of systems thinking includes classifying projects in terms of their complexity in two areas: project requirements and the technological approach. Complex projects have some uncertainty with requirements and technology, so they are well suited for the out-of-the-box agile methodology. Projects that have a low or simple complexity can tailor some of the agile methods to suit the project. A is incorrect because looking for defects in the software is part of software testing. B is incorrect because systems thinking doesn't address projects that are performing poorly. D is incorrect because systems thinking is not part of conflict resolution for project requirements.
4. Your agile project manager has asked for a proof of understanding from the team describing the customer's requirements. What would you deliver?
  - A. A written document describing, in the team's terms, the customer's requirements
  - B. A high-level prototype of the requirements
  - C. A project plan listing requirements and sequence of events

- D.** A feedback meeting where the team describes their understanding to the business partners

**B.** Building a prototype that describes the team's understanding of requirements is the most efficient way to show proof of understanding. This prototype can be used going forward as part of the building of the product.

A is incorrect because writing a document that could be set aside could be a waste of time and is not considered of value in agile. C is incorrect because building a project plan is not an agile project management approach. D is incorrect because there's not a specific feedback meeting or ceremony for giving evidence of a team's understanding on the business requirements.

- 5.** While your agile team is going through a value stream mapping exercise, you have been asked for total cycle time. What two factors should be considered when calculating total cycle time?
- A.** Value-added time and non-value added time
  - B.** Systems thinking and process analysis
  - C.** Building and testing
  - D.** Testing and documenting

**A.** When going through a value stream mapping exercise, both value-added and non-value-added time must be accounted for to get an accurate total cycle time metric. Throughout the process, the non-value-added time should be closely evaluated to identify delays and roadblocks that should be removed. There is more time that needs to be calculated into building, testing, and documenting than what those tactical tasks entail, which is the non-value-added time.

B, C, and D are incorrect because value stream mapping does not consider systems thinking, process analysis, building, testing, or documenting as part of the total cycle to the same depth as identification of value- and non-value-added activities.

- 6.** Your agile team leader recognizes that the team is disagreeing and seems to be overthinking a requirement. The team feels that a value stream mapping session would help identify the discrepancy. Once the scenario is defined, what is the next step?

- A.** Define the starting point and ending point
- B.** Review the requirements
- C.** Write user stories
- D.** Write test scripts

**A.** Begin mapping the value stream by identifying the starting point and ending point. Next, identify the steps in the process, any supporting groups, and alternative flows. Once all time estimates are calculated, examine the value-added and non-value-added times to determine what can be eliminated.

**B** is incorrect because reviewing the requirements is not as robust as identifying both the starting point, which could include the requirements, and the ending point of the project. **C** and **D** are incorrect because neither writing user stories nor writing test scripts is best next step as part of the value stream mapping activity.

7. As you look at your agile team's high-level project plan, you notice there are three pre-mortems scheduled. You ask your leader to define a pre-mortem. Which of the following is the explanation given?
- A.** It is a session that identifies the business requirements.
  - B.** It is a session that identifies why the project will be a huge success.
  - C.** It is a session that envisions failures and how to mitigate them.
  - D.** It is a session that identifies which team members need to be added to the team.

**C.** A pre-mortem is a session where all stakeholders will meet to generate a list of potential failure points and determine how to mitigate the possibility of the failure. The business owner's participation is required since the team will offer resolutions to avoid a failure that the business owner will need to agree with. **A** is incorrect because business requirements are identified prior to a pre-mortem, since they are the source for the discussion. **B** is incorrect because at the point of conducting a pre-mortem, it would be improbable that the team envisions everything working as planned. **D** is incorrect because All team members are identified by the time of a pre-mortem.

**8.** The agile method of developing in small increments, delivering a product, and receiving stakeholders' feedback lends itself to which of the following?

- A.** Value stream mapping
- B.** Systems thinking
- C.** Process analysis
- D.** Continuous improvement

**D.** The agile method of developing in small increments, delivering a product to stakeholders at each iteration, and receiving feedback often lends itself to continuous improvement. This method may uncover the true business requirements by making improvements and enhancements, which results in an improvement to the requirements. Each iteration may add another layer of improvement as the project moves closer to the final business purpose solution.

A, B, and C are incorrect because value stream mapping, systems thinking, and process analysis are all methods used to achieve continuous improvement.

**9.** Methods used in agile projects to elicit feedback include prototypes, simulations, and demonstrations. Why is it essential to deliver one of these methods to users of the product for feedback, sooner rather than later?

- A.** It allows users to begin training on the new functionality.
- B.** To learn if there are differences between requirements and what is wanted.
- C.** It allows users to create new forms that will be required for the new system.
- D.** It allows users to eliminate certain roles in their group.

**B.** Delivering this type of feedback is used to learn if there are any differences between what the requirements indicate compare to what the users find valuable. There may have been fields or even complete functions that were overlooked and can be uncovered prior to the development getting too far down the road. The user groups should take no action other than providing feedback when offered one of these methods.

A is incorrect because these are feedback elicitation techniques, not truly opportunities for providing functionality for the customers. C is incorrect because the goal isn't to introduce new forms, but to ensure requirements. D is incorrect because these approaches do not eliminate roles, but help to confirm requirements.

10. Your agile team leader has scheduled retrospectives for the team after each iteration. The purpose of this meeting is best described by which of the following?

- A. It's an opportunity for the team to inspect and improve their methods and teamwork.
- B. It allows the team to voice their grievances.
- C. It allows the team to prioritize new requirements.
- D. It allows team members to switch roles.

A. Retrospectives are meant to allow a team to inspect and improve their methods and teamwork. During a retrospective, three questions should be addressed: What is going well? What areas could use improvement? What could we be doing differently? When solutions are identified, they are validated. If they work well, they can be adopted as part of the ongoing process. If they fail, the team can consider trying something else or going back to the earlier process. B is incorrect because the point of a retrospective is not to air grievances, but to improve upon the approach. C is incorrect because the product owner will prioritize the product backlog before each iteration begins, not in the retrospective. D is incorrect because the team doesn't switch roles in the retrospective.

11. Your agile team leader feels strongly about the benefits of retrospectives being held after each iteration. Why do you think it is so important to her?

- A. Non-productive team members can be eliminated.
- B. It proves to the stakeholders that the team leader is taking charge of the project.
- C. It allows the team leader to know all the details of each iteration.
- D. The results of a retrospective can offer immediate improvements.

**D.** In a traditional project, retrospectives, or lessons learned, typically are held at the end of the project, offering lessons learned to the next project manager, who may or may not read the findings. The agile method of conducting a retrospective after almost every iteration offers immediate improvements to be made while the project is still in motion, benefiting the current project.

A is incorrect because retrospectives are not an opportunity to remove project team members. B is incorrect because retrospectives aren't to prove to stakeholders the role of the project team. C is incorrect because the team leader will already know the status of the iteration.

- 12.** In an agile environment, the steps set the stage, gather data, generate insights, decide what to do, and close represent which process?

- A.** Value stream mapping
- B.** Feedback
- C.** Pre-mortems
- D.** Retrospectives

**D.** Retrospectives follow these five steps to provide valuable lessons learned to each subsequent iteration. The team can take the roadblocks and problems encountered during an iteration, along with their resolutions, and act upon them to improve the process in the next iteration.

A, B, and C are incorrect as these steps are not applicable to value stream mapping, feedback, or retrospectives.

- 13.** During a retrospective, your team leader may single out an issue that was faced during an iteration and ask the team to go through the exercise of the five whys. What is this meant to accomplish?

- A.** It typically gets to the root of the cause.
- B.** It prevents the team from shifting blame.
- C.** It gathers five reasons for the issue.
- D.** It allows five team members to offer their opinion.

**A.** Typically, when the first question regarding an issue is asked, an automatic response is offered, usually giving an excuse of why

something became an issue. When the question of “why” is asked multiple times, the participants normally get to the root cause of the issue as they peel away excuses.

B is incorrect because this exercise is for root cause analysis, not to hide issues or shift blame. C is incorrect because the approach isn’t looking for five reasons, but root cause analysis. D is incorrect because the approach isn’t looking for five opinions from project team members, but is looking for root cause analysis.

14. Your agile leader occasionally asks the team to do a self-assessment, meaning a team self-assessment, not an individual self-assessment. The questions that the team addresses for this assessment revolve around which of the following?
- A. How the team gets along
  - B. How the team performs and delivers together
  - C. How the team reacts to business partners
  - D. How the team makes decisions
- B. The team self-assessment is meant to gauge the team members performance together. The results of this assessment will identify what is working well and where improvements can be made. The team then meets to determine how to implement improvements and how to celebrate what is working well.
- A is incorrect because the assessment isn’t intended to determine how the team is getting along, but is more performance-driven. C is incorrect because assessments don’t address reactions to business partners. D is incorrect because the assessment isn’t about how the team makes project decisions.
15. When your agile team is going through a pre-mortem, each member is asked to write down possible reasons they think some task or action might fail. The best method to reveal everyone’s list and consolidate it is to go around the room round-robin. What is the top benefit of this approach?
- A. No one is reading an entire list of problems.
  - B. When common issues are identified, other team members can cross it off their list.

- C. Each issue can be discussed when presented.
  - D. It forces everyone to attend and stay for the entire meeting.
- C. Presenting issues one at a time allows for discussion in the moment in addition to keeping the entire team engaged. When the list of failure points is complete and agreed upon, the team can prioritize the list and incorporate the fixes in the upcoming iterations.
- A is incorrect because while this statement is true, it's not the best reason why the round-robin approach works well. B is incorrect because while this statement is also true, the goal is to discuss the issues, not simply cross them off team members' lists. D is incorrect because the goal isn't to force attendance, but participation and problem solving.

**16.** After conducting a retrospective for your last iteration, what type of improvement could you expect to see on your agile team?

- A. Productivity
- B. Attendance
- C. Remote access
- D. Fewer meetings

A. Several benefits can be uncovered, but productivity of the team might increase by applying lessons learned and reducing rework. In addition, capabilities might be improved because of better knowledge sharing, and quality may improve by removing potential causes of defects.

B is incorrect because attendance isn't usually something that needs to be improved as part of a retrospective. C is incorrect because many teams don't work in a collocated environment, so remote access is somewhat typical in agile project teams. D is incorrect because fewer meetings isn't usually an outcome of retrospectives.

**17.** When the result of a retrospective has identified issues and root causes, the next step is to decide how to avoid the same types of issues going forward. What is one agile method to accomplish this process?

- A. Fishbone analysis
- B. Prioritize with dots

- C. Triple nickels
- D. SMART goals

**D.** Team members can turn their action items into goals that are SMART, meaning: specific, measurable, attainable, relevant, and timely. Once there is a clear understanding of the goals, each issue is discussed and correlated into a SMART goal. Adjustments are made if necessary, then the fix is executed where appropriate.

A is incorrect because fishbone analysis is referring to the fishbone chart, which is used during the root cause analysis approach. B is incorrect because prioritize with dots is a user story or feature prioritization scheme, not an outcome of a retrospective. C is incorrect because triple nickels is a brainstorming technique used in retrospectives based on five minutes of brainstorming and discussion.

18. When starting a new agile project, you are told you will be using a hybrid model. What does this mean?

- A. The first half of the project will be done in a traditional project method.
- B. The team member selection will be done traditionally.
- C. An agile model is used in combination with a traditional method.
- D. There will be no user acceptance until the end of the project.

**C.** In some cases, using a combination of agile methodology and traditional project methods can make sense, depending on the project. Finding the lowest-risk option to bring a project to success is, by far, the best route to go. Being rigid in your perception of the correct methodology may not always be the best methodology, and agile is meant to accommodate change.

A is incorrect because the hybrid approach doesn't follow a set formula of a portion being predictive and another portion being agile. B is incorrect because the hybrid approach doesn't really address team member selection. D is incorrect because there's always some formality to user acceptance of the project outcomes.

19. Setting the stage for a retrospective includes which of the following?

- A. Inviting all stakeholders
- B. Distributing a clear and concise agenda

**C.** Asking for anonymous input  
**D.** Defining a specific start and stop time

**B.** Defining a clear purpose and agenda for the meeting sets the expectation that this is not just another get-together to discuss the project. There is a need to establish team values and working agreements laying out what behavior is acceptable and what is not. A is incorrect because not all stakeholders are invited to the retrospective. C is incorrect because anonymous input isn't part of the retrospective. D is incorrect because while a specific start and stop time is a good idea, it's not the best answer presented. Meetings should always have an agenda and rules.

**20.** Which of the following is a method utilized to close a retrospective and reinforce its value?

**A.** Have a stakeholder dinner  
**B.** Have the team hold a separate meeting to discuss wins  
**C.** Give out awards to the best performer  
**D.** Go through a plus/delta exercise

**D.** While all answers might be acceptable, the method most likely would be going through a plus/delta exercise listing on the plus side —what the team would like to do more of and on the delta side— what types of things that didn't go well.

A, B, and C are incorrect choices. While hosting a dinner, having meetings to discuss wins, and giving out awards can be fun for the project team, the team also needs to address the negative aspects that need improvement in the project.