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1. What is meant by impediments in Scrum? Explain with examples.

An impediment in Scrum is anything that is slowing down the Team. Examples for impediments are,

- a sick team member
- a missing resource
- lack of management support or having a bad boss
- cold team room or a team room that is too small
- technical debt like a power outage ,lack of automated testing etc.
- having the team work on more than one release at the same time
- insufficient skill sets on the team
- John who is a team member getting a divorce

If it's blocking the team from doing its work, as above examples do, it's an Impediment.Above examples can be categorized under different categories. Such as,

- technical impediments
- blockers to specific stories
- organizational impediments
- culture
- insufficient education or training on lean-agile-scrum
- insufficient knowledge or skill sets
- people issues
- things not working (that were working before)
- basic things (eg, lack of team room)
- things outside the company (one example: the weather)

2. Explain the difference and similarity between SCRUM and AGILE?

Agile and Scrum share similar methods like collaborative iterations. That is a similarity between AGILE and SCRUM.And also Scrum is an Agile approach. And also both involve incremental builds for projects.But there are few differences between AGILE and SCRUM.
Such as,

AGILE	SCRUM
the leadership plays a vital role.Project head takes cares of all the tasks in the agile method.	Scrum fosters a self-organizing, cross-functional team. There is no team leader, so the entire team addresses the issues or problems.
Design and execution should be kept simple.	Design and execution can be innovative and experimental.
In this method, each step of development like requirements, analysis, design, are continually monitored during the lifecycle.	A demonstration of the functionality is provided at the end of every sprint. So that regular feedback can be taken before next sprint.
Agile can require lots of up-front development process and organizational change.	Not too many changes needed while implementing scrum process.

3. Explain what is meant by Daily Stand-Up?

Each day at the same time, the team meets so as to bring everyone up to date on the information that is vital for coordination: each team members briefly describes any “completed” contributions and any obstacles that stand in their way. Usually, Scrum’s Three Questions ,

- What have you completed since the last meeting?
- What do you plan to complete by the next meeting?
- What is getting in your way?

are used to structure discussion. The meeting is normally held in front of the task board.

This meeting is normally timeboxed to a maximum duration of 15 minutes, though this may need adjusting for larger teams. To keep the meeting short, any topic that starts a discussion is cut short, added to a “parking lot” list, and discussed in greater depth after the meeting, between the people affected by the issue.

4. Explain what is meant by Velocity?

Velocity is a term used in agile software development to illustrate the “rate of progress” for a team or a set of teams.Velocity is a metric for work done, which is often used in agile software development. The simplest way to define velocity is: the number or user stories a team/project can do in one sprint.The first version is actual velocity and involves dividing the total number of story points completed by the number of sprints. For example, if the development team has completed a total of 70 points over two sprints, the team's actual velocity would be 35 points per sprint.

5. Explain what is meant by increment.

An Increment is the sum of all the Product Backlog items completed during a Sprint and the value of the increments of all previous Sprints. At the end of a Sprint, the new Increment must be “Done,” which means it must be in useable condition and meet the Scrum Team’s definition of “Done.” An increment is a body of inspectable, "Done" work that supports empiricism at the end of the Sprint. The increment is a step toward a vision or goal. The increment must be in usable condition regardless of whether the Product Owner decides to release it. The entire point of Scrum is to deliver a "Done" increment.

When a Product Backlog item or an Increment is described as “Done”, everyone must understand what “Done” means. Although this may vary significantly per Scrum Team, members must have a shared understanding of what it means for work to be complete, to ensure transparency. This is the definition of “Done” for the Scrum Team and is used to assess when work is complete on the product Increment.

6. Briefly explains the Agile Manifesto & its Principles.

We are uncovering better ways of developing software by doing it and helping others do it. Though this works, we have come to value:

Individuals and interactions over processes and tools
Working software over comprehensive documentation
Customer collaboration over contract negotiation
Responding to change over following a plan

That is, while there is value in the items on the right, we value the items on the left.

Principle	**Description**
Customer involvement	Customers should be closely involved throughout the development process. Their role is to provide and prioritize new system requirements and to evaluate the iterations of the system.
Incremental delivery	The software is developed in increments with the customer specifying the requirements to be included in each increment.
People not process	The skills of the development team should be recognized and exploited. Team members should be left to develop their own ways of working without prescriptive processes.

Embrace change	Expect the system requirements to change and so design the system to accommodate these changes.
Maintain simplicity	Focus on simplicity in both the software being developed and in the development process. Wherever possible, actively work to eliminate complexity from the system.

7. Explain the drawbacks of the Agile model.

- It can be difficult to keep the interest of customers who are involved in the process.
- Team members may be unsuited to the intense involvement that characterises agile methods.
- Prioritising changes can be difficult where there are multiple stakeholders.
- Maintaining simplicity requires extra work.
- Contracts may be a problem as with other approaches to iterative development.
- In case of some software deliverables, especially the large ones, it is difficult to assess the effort required at the beginning of the software development life cycle.

8. Explain the use of burn-up and burn-down charts.

In agile these are used to keep track of sprints or health releases. They help the project managers to track and communicate the progress of their project. These charts help the team and stakeholders to understand how the progress is in any point of the release or sprint.
A burn down chart shows how much work is remaining to done on the project, where as burn up chart shows how much work has been completed, and the total amount of work.

9. Explain the role of the Scrum Master?

We can divide the roles of the scrum master in to 3 main categories as,

- Service to the product owner
- Service to the development team
- Service to the organization

<u>Scrum master service to the product owner</u>

- Ensuring that goals, scope, and product domain are understood by everyone on the Scrum Team as well as possible.
- Finding techniques for effective Product Backlog management.
- Helping the Scrum Team understand the need for clear and concise Product Backlog items.
- Understanding product planning in an empirical environment.
- Ensuring the Product Owner knows how to arrange the Product Backlog to maximize value.
- Understanding and practicing agility.
- Facilitating Scrum events as requested or needed

Scrum master service to the development team

- Coaching the Development Team in self-organization and cross-functionality.
- Helping the Development Team to create high-value products.
- Removing impediments to the Development Team's progress.
- Facilitating Scrum events as requested or needed.
- Coaching the Development Team in organizational environments in which Scrum is not yet fully adopted and understood.

Scrum master service to the organization

- Leading and coaching the organization in its Scrum adoption;
- Planning Scrum implementations within the organization;
- Helping employees and stakeholders understand and enact Scrum and empirical product development;
- Causing change that increases the productivity of the Scrum Team; and,
- Working with other Scrum Masters to increase the effectiveness of the application of Scrum in the organization.

10.Explain what is meant by story point in Scrum?

A metric used in Scrum to estimate the difficulty of implementing a given user story. This is an abstract measure of effort. In simple terms, a story point is a number that tells the team about the difficulty level of the story. Difficulty could be related to complexities, risks, and efforts involved.

11.Name a few other Agile frameworks

- Lean Software Development
- Kanban
- Extreme Programming or XP

- Crystal
- Dynamic Systems Development Method (DSDM)
- Feature Driven Development or FDD
- Agile Project Management or APM
- OpenUp

There are many agile frameworks. They share much of the same overarching philosophy, as well as many of the same characteristics and practices. From an implementation standpoint, however, each has its own unique mix of practices, terminology, and tactics.

12. Is it ever suggested to use waterfall over Scrum? If yes, explain when.

According to our opinion it depends on the project.

If the project is simple, short term with fully defined requirements, then the waterfall model would be prefered. In other cases, Agile Scrum would be prefered. The reason is that the waterfall model does not have iterations and each stage comes after the previous stage completes.

So it will be a total wastage of time to use this model for complex and long term projects because if you find out a missing requirement or some other design level issue at the testing level, you would have to go to the initial step again to redo the whole thing.

The scrum, on the other hand, is specially used in conditions when requirements are not fully mature initially and are to evolve with time called the Rolling Wave process. It divides a complex project into smaller deliverable and fully functional releases. Each release goes through the planning, development and testing processes and reviewed at the end of its development, a time span called a Sprint in Scrum which is not more than one month. Hence it is easier to ensure that the project is on the right track all along.

13. What is the difference between Sprint Planning Meeting and Sprint Retrospective Meeting?

The Sprint Planning Meeting is the first meeting to kick off the sprint. In Scrum, the sprint planning meeting is attended by the product owner, ScrumMaster and the entire Scrum team. Outside stakeholders may attend by invitation of the team, although this is rare in most companies.

Sprint Retrospective Meeting is basically an improvement meeting which is held to find ways to identify potential pitfalls, past mistakes, and through them seek out new ways to avoid them, which are attended by all – the product owner, ScrumMaster, development team members, and

optionally with the stakeholders.So the Sprint retrospective meeting is to find what things the team is doing well, what activities should be continued, and what more can be done to improve the next Sprint to be more enjoyable or productive.

The Sprint Retrospective occurs prior to the next sprint planning.

14. Explain about “Planning Poker” technique?

Planning Poker is an agile estimating and planning technique that is consensus based. To start a poker planning session, the product owner or customer reads an agile user story or describes a feature to the estimators.

Each estimator is holding a deck of Planning Poker cards with values like 0, 1, 2, 3, 5, 8, 13, 20, 40 and 100, which is the sequence we recommend. The values represent the number of story points, ideal days, or other units in which the team estimates.

The estimators discuss the feature, asking questions of the product owner as needed. When the feature has been fully discussed, each estimator privately selects one card to represent his or her estimate. All cards are then revealed at the same time.

If all estimators selected the same value, that becomes the estimate. If not, the estimators discuss their estimates. The high and low estimators should especially share their reasons. After further discussion, each estimator reselects an estimate card, and all cards are again revealed at the same time.

The poker planning process is repeated until consensus is achieved or until the estimators decide that agile estimating and planning of a particular item needs to be deferred until additional information can be acquired.

15. Agile and scrum certifications are hot in the market and organizations are expecting the candidates to hold one or more out of it. Name few certifications. (aware of them :))

- PMI Agile Certified Practitioner (PMI-ACP)
- Scrum Alliance (Certified Scrum Master/Certified Scrum Product Owner/ Certified Scrum Developer)
- Scrum Alliance (Certified Scrum Professional)
- Scrum.org (Professional Scrum Master/ Professional Scrum Product Owner/ Professional Scrum Developer-I)
- SAFe Scaled Agilist