Question 1 – write Agile Manifesto – 8 Marks

1.AGILE MANIFESTO

➢ Agile Manifesto is what are the values and Principles to be considered whileworking in Agile.

➢ It is nothing but a document that outlines the 4 basic Values of Agile and 12Principles of Agile.

➢ It’s not only for Scrum but also for all the frameworks that come under Agile likeScrum, XP, Kanban…

**The Four Agile Values**

1. **Individuals and interactions** over processes and tools.
	* People and teamwork are more important than rigid processes and technology.
2. **Working software** over comprehensive documentation.
	* Deliver functional products rather than getting stuck in excessive paperwork.
3. **Customer collaboration** over contract negotiation.
	* Engage with customers regularly to ensure their needs are met, rather than just sticking to the contract.
4. **Responding to change** over following a plan.
	* Adapt to change instead of strictly following a pre-set plan.

**The Twelve Agile Principles**

1. **Customer satisfaction through early and continuous delivery** of valuable software.
2. **Welcome changing requirements,** even late in development.
3. **Deliver working software frequently,** with a preference for shorter timescales.
4. **Business people and developers must work together** daily throughout the project.
5. **Build projects around motivated individuals** and give them the support they need.
6. **Face-to-face communication** is the most effective way to convey information.
7. **Working software is the primary measure of progress.**
8. **Maintain a sustainable development pace** for continuous progress.
9. **Continuous attention to technical excellence** and good design enhances agility.
10. **Simplicity—the art of maximizing work not done—is essential.**
11. **Self-organizing teams produce the best designs,** architectures, and solutions.
12. **Regularly reflect on how to become more effective** and adjust behavior accordingly.

Question 2 – User Stories- Acceptance Criteria-BV-CP – 40 Marks

Write minimum 40 User stories and their Acceptance Criteria along with their BV and CP

A **User Story** is a simple, concise description of a feature or functionality written from the **end user's perspective**. It helps Agile teams understand **who the user is, what they need, and why**

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| User Story No: 1 | Tasks: 2 | Priority: HIGHEST |
| AS A DELIVERY BOY I WANT TO REGISTER IN SCRUM FOODSSO THAT I CAN DELIVER ORDERS |
| BV: 500 | CP: 02 |
| ACCEPTANCE CRITERIARegistration Screen Text Boxes for User Name, Password, Nation ID, Mobile No, Email, Address, Phone Number. Click on Register Button. Send Successful Notification to the user |

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| User Story No: 2 | Tasks: 2 | Priority: HIGHEST |
| **AS A CUSTOMER**I WANT TO REGISTER IN SCRUM FOODSSO THAT I CAN PLACE FOOD ORDERS |
| BV: 500 | CP: 02 |
| Acceptance Criteria:Registration screen includes fields for Name, Email, Phone Number, Password.Click on the "Register" button.Send successful registration notification. |

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| User Story No: 3 | Tasks: 2 | Priority: HIGHEST |
| AS A CUSTOMERI WANT TO LOG IN TO MY ACCOUNTSO THAT I CAN ACCESS MY PROFILE AND PLACE ORDERS |
| BV: 400 | CP: 02 |
| Acceptance Criteria:Login screen should have fields for Email/Phone and Password.Click "Login" button to authenticate.Show error for incorrect credentials. |

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| User Story No: 4 | Tasks: 2 | Priority: HIGHEST |
| **AS A CUSTOMER**I WANT TO SEARCH FOR RESTAURANTSSO THAT I CAN BROWSE AVAILABLE FOOD OPTIONS |
| BV: 450 | CP: 02 |
| Acceptance Criteria:Search bar available on home screen.Users can search by restaurant name, cuisine, or location.Display relevant results based on the search input. |

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| User Story No: 5 | Tasks: 2 | Priority: HIGHEST |
| **AS A DELIVERY BOY**I WANT TO VIEW PENDING ORDERSSO THAT I CAN CHOOSE WHICH ONES TO DELIVER |
| BV: 450 | CP: 02 |
| Acceptance Criteria:Display pending orders on the dashboard.Ability to filter orders based on distance and priority.Allow delivery boys to accept orders. |

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| User Story No: 6 | Tasks: 2 | Priority: HIGHEST |
| **AS A RESTAURANT OWNER**I WANT TO REGISTER MY RESTAURANTSO THAT I CAN START RECEIVING ORDERS |
| BV: 500 | CP: 02 |
| Acceptance Criteria:Registration form includes fields for Restaurant Name, Owner Name, Email, Phone Number, Business License, Address.Click "Register" to submit the application.Admin receives a request for approval. |

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| User Story No: 7 | Tasks: 2 | Priority: HIGHEST |
| **AS A RESTAURANT OWNER**I WANT TO UPDATE MY MENUSO THAT CUSTOMERS CAN VIEW THE LATEST FOOD OPTIONS |
| BV: 450 | CP: 02 |
| Acceptance Criteria:Provide an interface for menu management.Allow adding, updating, and removing menu items.Display updated menu instantly. |

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| User Story No: 8 | Tasks: 2 | Priority: HIGHEST |
| **AS AN ADMIN**I WANT TO APPROVE OR REJECT RESTAURANT REGISTRATION REQUESTSSO THAT ONLY VERIFIED RESTAURANTS JOIN THE PLATFORM |
| BV: 500 | CP: 02 |
| Acceptance Criteria:Display all pending restaurant registration requests.Provide options to approve or reject requests.Notify the restaurant of the decision. |

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| User Story No: 9 | Tasks: 2 | Priority: HIGHEST |
| **AS A REGIONAL ADMIN**I WANT TO TRACK ORDER STATUSESSO THAT I CAN MONITOR DELIVERY PERFORMANCE |
| BV: 450 | CP: 02 |
| Acceptance Criteria:Display live order tracking dashboard.Provide filtering options by status (Pending, In Progress, Delivered, Canceled).Generate reports for order status trends. |

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| User Story No: 10 | Tasks: 2 | Priority: HIGHEST |
| **AS A BUSINESS OWNER**I WANT TO VIEW REVENUE REPORTSSO THAT I CAN ANALYZE BUSINESS PERFORMANCE |
| BV: 500 | CP: 02 |
| Acceptance Criteria:Display revenue statistics for restaurants and delivery services.Provide filtering options by date, location, and category.Generate downloadable reports. |

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| User Story No: 11 | Tasks: 2 | Priority: HIGHEST |
| **AS A CUSTOMER**I WANT TO SAVE MY FAVORITE RESTAURANTSSO THAT I CAN QUICKLY ACCESS THEM FOR FUTURE ORDERS |
| BV: 450 | CP: 02 |
| Acceptance Criteria:Provide an option to mark restaurants as favorites.Display saved restaurants in a "Favorites" section.Ensure that users can remove favorites at any time. |

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| User Story No: 12 | Tasks: 2 | Priority: HIGHEST |
| **AS A CUSTOMER**I WANT TO VIEW MY ORDER HISTORYSO THAT I CAN REORDER PREVIOUS MEALS EASILY |
| BV: 450 | CP: 02 |
| Acceptance Criteria:Display past orders with details (date, restaurant, items, total price).Provide a "Reorder" button.Ensure that only completed orders are displayed. |

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| User Story No: 13 | Tasks: 2 | Priority: HIGHEST |
| **AS A CUSTOMER**I WANT TO APPLY DISCOUNT COUPONSSO THAT I CAN GET REDUCED PRICES ON MY ORDERS |
| BV: 500 | CP: 02 |
| Acceptance Criteria:Display a field for entering promo codes at checkout.Validate discount codes before applying.Show the updated total price after discount is applied. |

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| User Story No: 14 | Tasks: 2 | Priority: HIGHEST |
| **AS A DELIVERY BOY**I WANT TO RECEIVE NOTIFICATIONS FOR NEW ORDERSSO THAT I CAN RESPOND QUICKLY |
| BV: 500 | CP: 02 |
| Acceptance Criteria:Send real-time notifications for new order assignments.Allow delivery boys to accept or reject an order.Update order status once accepted. |

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| User Story No: 15 | Tasks: 2 | Priority: HIGHEST |
| **AS A RESTAURANT OWNER**I WANT TO VIEW CUSTOMER FEEDBACKSO THAT I CAN IMPROVE MY SERVICE |
| BV: 450 | CP: 02 |
| Acceptance Criteria:Display customer ratings and comments for past orders.Allow restaurant owners to respond to feedback.Provide analytics on overall customer satisfaction. |

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| User Story No: 16 | Tasks: 2 | Priority: HIGHEST |
| **AS AN ADMIN**I WANT TO BAN FRAUDULENT USERSSO THAT THE PLATFORM REMAINS TRUSTWORTHY |
| BV: 500 | CP: 02 |
| Acceptance Criteria:Provide a dashboard to monitor user activity.Allow admins to flag suspicious accounts.Implement an account suspension and review process. |

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| User Story No: 17 | Tasks: 2 | Priority: HIGHEST |
| **AS A REGIONAL ADMIN**I WANT TO REVIEW DELIVERY TIME STATISTICSSO THAT I CAN ENSURE QUICKER DELIVERIES |
| BV: 450 | CP: 02 |
| Acceptance Criteria:Acceptance Criteria:Provide reports on average delivery times per region.Allow filtering by restaurant and delivery boy.Identify problem areas for improvement. |

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| User Story No: 18 | Tasks: 2 | Priority: HIGHEST |
| **AS A CUSTOMER**I WANT TO TRACK MY ORDER IN REAL TIMESO THAT I KNOW THE EXACT DELIVERY STATUS |
| BV: 450 | CP: 02 |
| Acceptance Criteria:Provide live tracking for active orders.Show estimated delivery time and updates.Notify users when the delivery boy is near. |

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| User Story No: 19 | Tasks: 2 | Priority: HIGHEST |
| **AS A CUSTOMER**I WANT TO CANCEL AN ORDER WITHIN A SPECIFIED TIMESO THAT I CAN AVOID INCORRECT PURCHASES |
| BV: 450 | CP: 02 |
| Acceptance Criteria:Allow order cancellation within a specific window.Show refund options where applicable.Send confirmation upon cancellation. |

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| User Story No: 20 | Tasks: 2 | Priority: HIGHEST |
| **AS A CUSTOMER**I WANT TO CONTACT CUSTOMER SUPPORTSO THAT I CAN RESOLVE ORDER ISSUES QUICKLY |
| BV: 500 | CP: 02 |
| Acceptance Criteria:Provide a customer support chat feature.Offer different support channels (phone, chat, email).Send a support ticket confirmation. |

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| User Story No: 21 | Tasks: 2 | Priority: HIGHEST |
| **AS A DELIVERY BOY**I WANT TO VIEW ORDER DETAILS CLEARLYSO THAT I CAN ENSURE ACCURATE DELIVERY |
| BV: 500 | CP: 02 |
| Acceptance Criteria:Display order items, customer details, and address.Provide navigation assistance.Ensure updates on any order modifications |

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| User Story No: 22 | Tasks: 2 | Priority: HIGHEST |
| I WANT TO REPORT A DELIVERY ISSUESO THAT I CAN GET SUPPORT FOR DELIVERY COMPLICATIONS |
| BV: 450 | CP: 02 |
| Acceptance Criteria:Allow reporting of incorrect addresses or missing items.Provide support ticket generation.Ensure timely response from support. |

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| User Story No: 23 | Tasks: 2 | Priority: HIGHEST |
| **AS A RESTAURANT OWNER**I WANT TO SET DELIVERY TIMINGSSO THAT CUSTOMERS KNOW WHEN TO EXPECT SERVICE |
| BV: 500 | CP: 02 |
| Acceptance Criteria:Allow restaurant owners to set operating hours.Display availability to customers in the app.Notify customers of any changes. |

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| User Story No: 24 | Tasks: 2 | Priority: HIGHEST |
| **AS AN ADMIN**I WANT TO GENERATE BUSINESS REPORTSSO THAT I CAN TRACK PLATFORM PERFORMANCE |
| BV: 500 | CP: 02 |
| Acceptance Criteria:Provide automated report generation.Allow filtering by time, region, and user type.Export reports in multiple formats. |

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| User Story No: 25 | Tasks: 2 | Priority: HIGHEST |
| **AS AN ADMIN**I WANT TO GENERATE BUSINESS REPORTSSO THAT I CAN TRACK PLATFORM PERFORMANCE |
| BV: 450 | CP: 02 |
| Acceptance Criteria:Show average delivery time per driver.Track success rate of deliveries.Generate performance reports. |

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| User Story No: 26 | Tasks: 2 | Priority: HIGHEST |
| **AS A CUSTOMER**I WANT TO RECEIVE ORDER CONFIRMATION NOTIFICATIONSSO THAT I KNOW MY ORDER HAS BEEN PLACED SUCCESSFULLY |
| BV: 450 | CP: 02 |
| Acceptance Criteria:Send email/SMS confirmation after order placement.Display confirmation on the app screen.Include estimated delivery time in the notification. |

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| User Story No: 27 | Tasks: 2 | Priority: HIGHEST |
| **AS A CUSTOMER**I WANT TO ADD MULTIPLE ADDRESSES TO MY PROFILESO THAT I CAN CHOOSE WHERE TO DELIVER MY ORDER |
| BV: 500 | CP: 02 |
| Acceptance Criteria:Allow users to save multiple addresses in their profile.Provide an option to select an address during checkout.Ensure users can edit or delete saved addresses. |

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| User Story No: 28 | Tasks: 2 | Priority: HIGHEST |
| **AS A DELIVERY BOY**I WANT TO VIEW MY DAILY EARNINGSSO THAT I CAN TRACK MY INCOME |
| BV: 450 | CP: 02 |
| Acceptance Criteria:Show total earnings for the day/week/month.Provide breakdown of earnings per delivery.Include details of completed and pending payments. |

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| User Story No: 29 | Tasks: 2 | Priority: HIGHEST |
| **AS A RESTAURANT OWNER**I WANT TO MANAGE INVENTORY FOR MY MENU ITEMSSO THAT CUSTOMERS ONLY SEE AVAILABLE DISHES |
| BV: 450 | CP: 02 |
| Acceptance Criteria:Allow restaurant owners to update stock availability.Hide out-of-stock items from the menu.Send alerts when stock is running low. |

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| User Story No: 30 | Tasks: 2 | Priority: HIGHEST |
| **AS A REGIONAL ADMIN**I WANT TO RECEIVE ALERTS FOR DELIVERY DELAYSSO THAT I CAN INTERVENE IF NECESSARY |
| BV: 450 | CP: 02 |
| Acceptance Criteria:Send alerts if an order is delayed beyond the estimated time.Provide an escalation workflow to resolve delays.Generate reports on delay frequency and causes. |

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| User Story No: 31 | Tasks: 2 | Priority: HIGHEST |
| **AS A CUSTOMER**I WANT TO SEARCH AND VIEW RESTAURANTSSO THAT I CAN FIND MY PREFERRED DINING OPTIONS |
| BV: 450 | CP: 02 |
| Acceptance Criteria:Display a search bar to filter restaurants by name, cuisine, and location.Show restaurant ratings and reviews.Allow users to view restaurant details. |

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| User Story No: 32 | Tasks: 2 | Priority: HIGHEST |
| **AS A CUSTOMER** I WANT TO VIEW A RESTAURANT'S MENUSO THAT I CAN CHOOSE FOOD ITEMS TO ORDER |
| BV: 500 | CP: 02 |
| Acceptance Criteria:Display categorized menu items with images and prices.Allow users to select and add items to cart.Show dietary information where applicable. |

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| User Story No: 33 | Tasks: 2 | Priority: HIGHEST |
| **AS A CUSTOMER**I WANT TO PLACE A FOOD ORDERSO THAT I CAN GET IT DELIVERED TO MY LOCATION |
| BV: 500 | CP: 02 |
| Acceptance Criteria:Provide an "Order Now" button on selected items.Show order summary before confirmation.Send order details to the restaurant upon checkout. |

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| User Story No: 34 | Tasks: 2 | Priority: HIGHEST |
| **AS A CUSTOMER**I WANT TO MAKE PAYMENTS SECURELYSO THAT I CAN COMPLETE MY TRANSACTION |
| BV: 500 | CP: 02 |
| Acceptance Criteria:Provide multiple payment options (Credit/Debit card, UPI, Cash on Delivery).Ensure secure transactions with encryption.Generate digital receipts post-payment. |

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| User Story No: 35 | Tasks: 2 | Priority: HIGHEST |
| **AS A CUSTOMER**I WANT TO MAKE PAYMENTS SECURELYSO THAT I CAN COMPLETE MY TRANSACTION |
| BV: 500 | CP: 02 |
| Acceptance Criteria:Provide multiple payment options (Credit/Debit card, UPI, Cash on Delivery).Ensure secure transactions with encryption.Generate digital receipts post-payment. |

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| User Story No: 36 | Tasks: 2 | Priority: HIGHEST |
| **AS A CUSTOMER**I WANT TO PROVIDE FEEDBACK & RATINGSSO THAT I CAN HELP IMPROVE SERVICE QUALITY |
| BV: 450 | CP: 02 |
| Acceptance Criteria:Allow rating restaurants and delivery experience.Provide a comment section for feedback.Display average ratings for transparency. |

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| User Story No: 37 | Tasks: 2 | Priority: HIGHEST |
| **AS A DELIVERY BOY**I WANT TO NAVIGATE TO THE CUSTOMER'S LOCATIONSO THAT I CAN DELIVER THE ORDER EFFICIENTLY |
| BV: 450 | CP: 02 |
| Acceptance Criteria:Provide an integrated map feature with optimized routes.Offer turn-by-turn navigation support.Allow for alternative route suggestions in case of traffic. |

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| User Story No: 38 | Tasks: 2 | Priority: HIGHEST |
| **AS A CUSTOMER**I WANT TO LOG OUT SAFELYSO THAT I CAN PROTECT MY ACCOUNT INFORMATION |
| BV: 450 | CP: 02 |
| Acceptance Criteria:Provide a "Logout" button in account settings.Ensure session is securely terminated.Redirect to login screen after logout. |

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| User Story No: 39 | Tasks: 2 | Priority: HIGHEST |
| **AS A RESTAURANT OWNER**I WANT TO VIEW CUSTOMER FEEDBACKSO THAT I CAN IMPROVE MY SERVICE QUALITY |
| BV: 450 | CP: 02 |
| Acceptance Criteria:Display customer reviews and ratings.Allow restaurant owners to respond to feedback.Provide analytics on overall customer satisfaction. |

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| User Story No: 40 | Tasks: 2 | Priority: HIGHEST |
| **AS A RESTAURANT OWNER**I WANT TO VIEW ALL INCOMING ORDERSSO THAT I CAN PREPARE THEM ON TIME |
| BV: 500 | CP: 02 |
| Acceptance Criteria:Display a dashboard with all active orders.Show order details including items, quantity, and customer details.Allow filtering orders by status (Pending, In Progress, Completed). |

Question 3– What is epic? Write 2 epics

An **epic** is a large user story that captures a broad feature or requirement in a project. **It consists of** **multiple smaller user stories that can be broken down and worked on** incrementally. Epics help teams organize work and prioritize development efforts.

1.Review and Rating epic

As a customer, I want to rate my overall order experience so that I can share feedback on food quality and delivery service.

Acceptance Criteria:

Provide a 1-5 star rating system.

Allow customers to select different ratings for food and delivery.

Ensure ratings are only allowed after order completion.

As a customer, I want to leave a written review so that I can provide more details about my experience.

Acceptance Criteria:

Allow customers to write a review after giving a rating.

Provide a character limit for reviews.

Ensure customers can edit or delete reviews within 24 hours.

2.Food order tracking

As a customer, I want to view the real-time status of my order so that I know when to expect my food.

Acceptance Criteria:

Show order status updates (Order Placed, Preparing, Out for Delivery, Delivered).

Provide estimated delivery time.

Send notifications when the order status changes.

As a customer, I want to track the delivery boy’s location on a map so that I can see how far my food is.

Acceptance Criteria:

Display a live map with the delivery boy’s current location.

Update the location every few seconds.

Provide estimated arrival time based on traffic conditions.

Question 4 –What is the difference between BV and CP – 2 Marks

### ****Difference Between BV (Business Value) and CP (Complexity Points)****

1. **BV (Business Value):**
	* Represents the importance or impact of a user story on the business.
	* Higher BV means the feature(user story) is more valuable to **users or revenue generation.**
	* Helps prioritize which features should be developed first.

 Techniques used: MOSCOW, Currency note technique

1. **CP (Complexity Points):**
	* Represents the effort or difficulty required to implement a user story.
	* Higher CP means the feature **is more complex** and **may take longer** to develop.
	* Helps in estimating workload and sprint planning.

 Techniques used: Planning poker

**Example:**

* A feature like **"User Registration"** may have **BV = 500 (high value)** but **CP = 2 (low complexity)** as it is essential but simple to implement.
* A feature like **"AI-based Recommendation System"** may have **BV = 700 (very high value)** but **CP = 10 (high complexity)** because it requires advanced development.

Question 5 –Explain about Sprint– 5 Marks

A **Sprint** is a time-boxed iteration in Scrum where a team works on a defined set of tasks to create an increment of a product. Below are its key components:

#### ****1. Time-box Duration****

* A **Sprint typically lasts 1 to 4 weeks** and can custom the duration.
* The duration is fixed and should remain consistent for all Sprints.

#### ****2. Defined Goal****

* Each Sprint has a **Sprint Goal**, which provides a clear purpose and focus for the team.
* The goal is aligned with business objectives and customer needs.

#### ****3. Sprint Planning****

* A meeting where the team **selects backlog items** to work on in the Sprint.
* The team defines the **scope, tasks, and estimates effort**.
* The output is a **Sprint Backlog** (list of tasks for the Sprint).

#### ****4. Daily Stand-up Meeting****

* A **15-minute daily meeting** where team members discuss:
	+ What they did yesterday.
	+ What they plan to do today.
	+ Any blockers or issues.
* Helps ensure **alignment and transparency**.

#### ****5. Development and Testing****

* The team works on **design, coding, and testing** to complete backlog items.
* Testing is done continuously to ensure quality.
* Developers and testers collaborate closely.

#### ****6. Incremental Delivery****

* Each Sprint delivers a **working product increment** that can be reviewed.
* The product should be potentially **shippable** after every Sprint.

#### ****7. Sprint Review****

* A meeting at the end of the Sprint to **showcase the completed work**.
* Stakeholders provide feedback on the increment.
* Helps in **improving the product** before the next Sprint.

#### ****8. Sprint Retrospective****

* A meeting where the team reflects on the Sprint.
* Identifies **what went well, what needs improvement, and action items** for the next Sprint.
* Aims for **continuous improvement**.

#### ****9. Backlog Refinement (Grooming)****

* An ongoing process where the team:
	+ Reviews and updates the **Product Backlog**.
	+ Breaks down large tasks into smaller, clear items.
	+ Ensures backlog items are ready for future Sprints.

Question 6 – Explain Product backlog and sprint back log– 5 Marks

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| **Sl No.** | **Product Backlog** | **Sprint Backlog** |
| 1 | Anything that needed to accomplish the project vision | Anything that needed to fulfill the sprint goal |
| 2 | **Product owner owns** | **Development team owns** |
| 3 | **Contains requirements, defects , tasks** | **Subset of product backlog items which is defined as priority by product owner** |
| 4 | **Everyone contributes to the product backlog** | **Only the development team contributes to the sprint backlog** |
| 5 | Product backlog refinement meeting is to refine the product backlog | Sprint Planning meeting is to refine the sprint backlog items |
| 6 | Product backlog evolves and changes will be done by the PO through the product life cycle | No changes are allowed to the sprint backlog items once the sprint has started |
| 7 | Release burn down metric is used | Sprint Burndown metric is used |
| 8 | Estimation is done at a user story level | Estimation is done at the activity or task level |
| 9 | Daily standup meetings does not discuss product backlog items | Daily standup meetings discussess the sprint backlog in accordance with sprint goal |
| 10 | **Continuously updated** | **Fixed for the Sprint duration** |

Question 7 – What is impediments log? write 2 impediments – 5 Marks

**An Impediments** Log is a documented **list of obstacles or blockers that hinder the progress** of a Scrum team. It helps track and resolve issues efficiently to ensure smooth Sprint execution. The Scrum Master is responsible for managing and addressing these impediments.

Examples of Impediments

Technical Blockers – The development team is unable to proceed due to server downtime or missing software dependencies.

Resource Constraints – A key team member is unavailable, delaying critical tasks.

Question 8 – Explain Velocity of the Team

**Velocity** is a key metric in Scrum **that measures the amount of work a team completes in a Sprint**. It helps in forecasting future Sprints and planning releases effectively.

The calculation of velocity is performed by the **development team itself as they are responsible for estimating the effort required to complete each user story or backlog item.**

### ****How is Velocity Calculated?****

1. **Determine Completed Work** – At the end of a Sprint, sum up the **story points** (or effort estimates) of all **fully completed** user stories.
2. **Average Over Multiple Sprints** – Calculate the average of completed story points over the last **3-5 Sprints** to get a stable velocity.
3. **Forecast Future Work** – Use this velocity to estimate how much work the team can complete in upcoming Sprints.

### ****Example Calculation:****

* Sprint 1: **30 story points**
* Sprint 2: **25 story points**
* Sprint 3: **35 story points**

 **Velocity = (30 + 25 + 35) / 3 = 30 story points per Sprint**

Question 9 – Draw Sprint Burn Charts n Product Burn Down Charts– 3 Marks

1.Sprint Burn Charts



Date - February 13th, 2025 - February 13th, 2025

Date - February 13th, 2025 to February 13th, 2025

Sprint goal - Registration feature must be complete

Remaining work Guideline

(Number of story points left to complete this sprint ) (Ideal burn rate)

2. Product Burn Down Charts

Inspite of Story points here we can consider sprints(no. of sprints) in the X axis

Both **Sprint Burndown Chart** and **Product Burndown Chart** are visual tools used in Agile to track progress, but they focus on different scopes.

| **Feature** | **Sprint Burndown Chart** | **Product Burndown Chart** |
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| **Scope** | Tracks work within a single Sprint | Tracks progress of the entire product backlog |
| **Timeframe** | Covers one Sprint (1–4 weeks) | Covers multiple Sprints until project completion |
| **Purpose** | Shows how much work remains in the Sprint backlog | Shows overall progress toward completing the product |
| **X-Axis** | Sprint days | Sprint numbers (release cycle) |
| **Y-Axis** | Remaining work (story points or tasks) for the Sprint | Remaining work (story points or features) for the product |
| **Usage** | Helps monitor daily progress and identify if the Sprint is on track | Helps stakeholders and teams understand long-term progress |

### ****Key Difference****

* **Sprint Burndown** ensures the team is progressing well within a Sprint.
* **Product Burndown** provides a **high-level view** of project progress across multiple Sprints.

Question 10 – Explain about Product Grooming – 2 Marks

### ****Product Grooming (Backlog Refinement)****

**Product Grooming**, also known as **Backlog Refinement**, is an **ongoing process** in Agile where the **Product Backlog** is **reviewed, updated, and prioritized to ensure clarity** and readiness for future Sprints.

### ****Key Activities in Product Grooming:****

1. **Prioritizing backlog items** based on business value.
2. **Breaking down large user stories** into smaller, manageable tasks.
3. **Clarifying requirements** and adding necessary details.
4. **Estimating effort** for backlog items with the development team.
5. **Removing outdated or irrelevant tasks** from the backlog.

Question 11 – Explain the roles of Scrum Master and Product Owner – 3 Marks

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| **Criteria** | **Product Owner** | **Scrum Master** |
| **Responsibility** | Manages the **Product Backlog** and prioritizes tasks. | Ensures the team follows **Scrum principles** and processes. |
| **Focus Area** | Maximizing **business value** of the product. | Improving **team efficiency** and removing impediments. |
| **Key Activities** | Defines **product vision**, gathers requirements, and works with stakeholders. | Facilitates Scrum events, supports the team, and fosters continuous improvement. |
| **Decision-Making** | Decides **what features** should be built and their priority. | Helps the team **decide how** to implement and complete work efficiently. |
| **Stakeholder Interaction** | **Works closely with customers and stakeholders.** | **Works with the development team and protects them from disruptions.** |
| **Nature of Work** | **Strategic** – Focuses on business goals and product success. | **Facilitative** – Helps the team work efficiently and removes roadblocks. |

A **Product Owner (PO)** is a key role in Scrum responsible for **defining the product vision**, managing the **Product Backlog**, and ensuring the development team delivers **maximum business value**.

A **Scrum Master** is a key role in Scrum responsible for **facilitating the Scrum process**, ensuring the team follows Agile principles, and **removing impediments** to help the team work efficiently.

 Question 12 – Explain all Meetings Conducted in Scrum Project – 8 Marks

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| --- | --- | --- | --- |
| Meeting | Purpose | Time-box Duration | Participants |
| **1. Sprint Planning** | Defines Sprint goals and selects backlog items for the Sprint. | 2–4 hours (for a 2-week Sprint) | Product Owner, Scrum Master, Development Team |
| **2. Daily Stand-up (Daily Scrum)** | A short meeting to discuss progress, upcoming tasks, and blockers. | 15 minutes | Development Team, Scrum Master (optional), Product Owner (optional) |
| **3. Sprint Review** | Demonstrates the completed work to stakeholders and collects feedback. | 1–2 hours | Development Team, Product Owner, Scrum Master, Stakeholders |
| **4. Sprint Retrospective** | Reflects on the Sprint to identify what went well and what needs improvement. | 1–1.5 hours | Development Team, Scrum Master, Product Owner (optional) |
| **5. Backlog Refinement (Grooming)** | Reviews, updates, and prioritizes backlog items for future Sprints. | Ongoing (1–2 hours per Sprint) | Product Owner, Scrum Master, Development Team |

### ****Importance of Scrum Meetings****

* Ensure **clear communication and collaboration** within the team.
* Help teams **adapt quickly to changes** and improve efficiency.
* Enable **continuous improvement** in Agile development.

In addition to the core Scrum meetings, **Release Planning** and **Ad-hoc Meetings** play an important role in project execution.

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| --- | --- | --- | --- |
| **Meeting** | **Purpose** | **Time-box Duration** | **Participants** |
| **Release Planning** | Defines the **high-level roadmap** for multiple Sprints, focusing on product delivery goals and timelines. | **2–4 hours (or more depending on release complexity)** | Product Owner, Scrum Master, Development Team, Stakeholders |
| **Ad-hoc Meetings** | Unplanned discussions to address urgent issues, clarifications, or collaboration needs outside scheduled Scrum meetings. | **As needed (no fixed duration)** | Relevant team members based on the issue |

Question 13 – Explain Sprint Size and Scrum Size– 2 Marks

#### ****1. Sprint Size****

* **Sprint Size** refers to the **amount of work** the Scrum team plans to accomplish during a Sprint.
* Sprint size is typically measured in **story points**, which represent the effort required to complete tasks.
* The **ideal Sprint size** is small enough to ensure quick delivery and feedback, but large enough to produce meaningful increments.
* Typically, **Sprints are 1 to 4 weeks long**, and the size of a Sprint depends on the team's **capacity, velocity, and complexity of tasks**.

#### ****2. Scrum Size****

* **Scrum Size** refers to the **size of the Scrum team** involved in the project.
* A Scrum team generally consists of **10 or fewer people**:
	+ **Development Team** (5-9 members): Cross-functional, responsible for delivering the work.
	+ **Scrum Master**: Facilitates the Scrum process.
	+ **Product Owner**: Manages the product backlog.
* Teams larger than 10 members might need to be **split** into smaller teams to ensure **effective communication** and collaboration.

Question 14 – Explain DOR and DOD – 2 Marks

#### ****1. Definition of Ready (DoR)****

* **DoR** outlines the criteria that must be met for a **Product Backlog item (PBI)** or **user story** to be considered **ready for development**.
* It ensures that the team has all the necessary information and resources to start working on a task without delays.
* **Prepared by**: The **Product Owner** works with the team to define and ensure that the backlog items meet these criteria, so they are actionable.
* **Typical Criteria in DoR**:
	+ Clear acceptance criteria.
	+ User stories are well-defined and understood.
	+ Required designs, specifications, and dependencies are identified.

#### ****2. Definition of Done (DoD)****

* **DoD** defines the **conditions that must be met for a product increment** or **user story** to be considered **completed** and ready for release.
* It ensures that the team delivers a **high-quality, shippable product increment** at the end of the Sprint.
* **Prepared by**: The **Development Team** in collaboration with the Scrum Master and Product Owner to ensure quality standards and consistency.
* **Typical Criteria in DoD**:
	+ Code is written and tested.
	+ User stories meet acceptance criteria.
	+ Documentation (if required) is complete.
	+ The feature is integrated and deployable.

### ****Key Difference****

* **DoR** ensures the task is **ready to start**, while **DoD** ensures the task is **completed** with all necessary quality checks.

Question 15 – Explain Prioritization Techniques and MVP – 3 Marks

#### ****1. Prioritization Techniques****

In Scrum, prioritization ensures that the most important and valuable tasks are completed first. Here are some commonly used **prioritization techniques**:

* **MoSCoW (Must Have, Should Have, Could Have, Won't Have)**
	+ **Must Have**: Essential requirements for the product to be viable.
	+ **Should Have**: Important but not critical for immediate release.
	+ **Could Have**: Desirable but can be delayed if necessary.
	+ **Won't Have**: Not needed in this release cycle.

#### ****2. Minimum Viable Product (MVP)****

* **MVP** refers to the **smallest version of a product** that can be released to **test assumptions** and **gather feedback** from real users.
* The goal of an MVP is to build a **basic version** with core functionalities that provide **value to users** and help validate the product concept.
* It focuses on learning what works and what doesn’t, allowing for **rapid iterations** and ensuring the product development aligns with user needs and market demand.

Question 16 – Difference between Business Analyst n Product Owner – 3 Marks

A **Business Analyst (BA)** is responsible for **gathering, analyzing, and documenting business requirements** and ensuring that the product or project aligns with the business goals. They act as a bridge between stakeholders and the development team, ensuring clear communication and understanding of requirements.

A **Product Owner (PO)** is a key Scrum role responsible for defining the **product vision**, **prioritizing the Product Backlog**, and ensuring that the team delivers **business value** through each Sprint. The Product Owner works closely with the development team and stakeholders to ensure the product aligns with customer needs and business goals.

|  |  |  |
| --- | --- | --- |
| **Criteria** | **Business Analyst (BA)** | **Product Owner (PO)** |
| **Focus** | Focuses on gathering and analyzing **business requirements**. | Focuses on defining and prioritizing **product features**. |
| **Role in Decision-Making** | Supports decision-makers but doesn't make final decisions. | Makes **final decisions** on product features and priorities. |
| **Stakeholder Interaction** | Works mainly with **stakeholders** to gather and clarify requirements. | Works closely with **customers, stakeholders**, and the development team to define the product vision. |
| **Scope of Work** | Focuses on **detailed analysis** of business processes and user stories. | Focuses on the **overall product strategy** and backlog management. |
| **Ownership** | Does not **own the product backlog** or the product direction. | **Owns the product backlog** and ensures value delivery. |

Question 17 – Prepare a sample Resume of 3yrs exp Product Owner – 3 Marks

