ONLINE AGRICULTURE STORE

Question 1 – BPM - 5 Marks

BPM

Goal
Farmers in remote areas buy agriculture products(seeds,pesticides & fertilizers) from online.

Input
- Products from the manufacturing company should be considered according to the farmers requirements.
- We must check internet connectivity

Output
- Through online delivery of agriculture products to farmers.
- Through manufacture to farmers making proper communication.

Resources
- Online application through web/mobile
- Products like seeds,fertilizers,& pesticides from manufacturing companies.
- Budget resources (2 crores).
- Human resources(Mr.henry,Mr Pandu,Mr Dooku,APT IT Solutions).

Activities
- Providing accurate product details and price details.
- Products should be displayed to farmers.
- Delivering products at farmers locations.

Values
- Easy access of agriculture products for farmers in remote areas.
- Saves time and effort for farmers to buy products.

Question 2 – SWOT - 5 Mark
 SWOT

S(Strength) ● Finding the project(Financial). ● APT IT Solutions. ● Stakeholders.	W(Weakness) ● Internet connectivity in remote areas. ● New user usage. ● Lack of knowledge on how to use applications because most of them are illerters.
O(Opportunities) ● Giving employment opportunities to APT IT Solutions. ● By this farmers should improve their agriculture production.	T(Threats) ● Competition from other existing or emerging companies ● Technical issues and security in the application. ● Government rules and regulations related to agriculture.

Question 3 – Feasibility study - 5 Marks

Hardware
● Network issues.
● Server requirements.
Software
● Java development team.
● Database management team.
● Security of software.
Budget
● Cost of software and hardware.
● Testing and development costs.
● Maintenance and support costs.
Time estimation
● Project declaration time.
● Development time for each stage.
● Both testing and deployment timeline.

Question 4 – Gap Analysis - 5 Marks

Current state
- Agriculture products are not available like fertilizers,seeds and pesticides.
- Communication gap between farmers and manufacturing companies.
- Farmers are getting less production because of the availability of required products.

Desired state
- products should be easily available through online platforms.
- Large number of products should be available.
- Products should be delivered in their areas.
- Direct communication and interaction between farmers and manufacturing companies.
- Showing benefits of the system time saving,increased level products and cost of products.
- Providing solutions for farmers requirements.

Question 5 – Risk Analysis - 10 Marks

BA RISKS

Misunderstanding Requirements

If BA fails to accurately capture the business requirements, leading to incorrect or incomplete documentation.

Effect: Rework, delays, and poor-quality solutions

Poor Communication

Poor or insufficient communication with stakeholders, which could result in unclear or shifting requirements

Effect: Missed requirements, scope creep, and dissatisfaction with final deliverables.

Solution:

Make strong communication channels, hold regular meetings, and keep stakeholders engaged.

Scope Creep

Uncontrolled changes or continuous addition of features to the project without revisiting the scope or timelines.

Effect: Extended timelines, increased costs, and project failure due to unplanned changes.

Solution : Make formal approval process for changes

Documentation

Insufficient or unclear documentation of requirements, processes, and system designs.

Effect: Confusion, misunderstandings, delays, and errors during development and testing.

Solution:Make proper documentation standards,continuously update documents involving subject matter experts.

Project/Process Risks

Scope Changes The project's scope keeps evolving during the lifecycle without formal control or agreement on changes.

Clear scope definition and control mechanisms, regular review of scope with stakeholders.

Project Delays : Any delays in deliverables, dependencies, or phases of the project can disrupt timelines.

Strict project management practices, proactive risk management, and realistic scheduling.

Testing

improper testing of the system, either due to time, resource, or process constraints.
Comprehensive testing plan, clear test case documentation, involvement of BA during testing phases.

Technology Risks

: Adoption of new or unproven technologies, or technical issues related to system integrations or infrastructure.

Risk Management

Lack of proper identification and mitigation of risks throughout the project lifecycle
regularly assess risks, and take proactive measures to mitigate them.

Question 6 – Stakeholder Analysis (RACI Matrix) - 8 Marks

Stakeholder Analysis(RACI Matrix)

Stakeholder	Role	Responsible (R)	Accountable(A)	Consulted (C)	Informed (I)
Mr.Henry	Sponsor		A	C	I
Mr.Pandu	Financial Head		A	C	I
Mr.Dooku	Project Coordinator	R	A	C	I
Petr,Kelvin,Ben	Farmer Represe	R		C	I

	ntatives				
Mr.Karthik	Delivery Head		A		I
Mr.Vandanam	Project Manager	R	A	C	I
Mr.Tyson,Ms. Lucie, Mr.Bravo	Java Developers	R		C	I
Mr.Mike	Network Admin	R		C	I
MR.Jason,Ms .Alekya	Testers	R		C	I
John	DB Admin	R		C	I
Manufactures	Product Suppliers			C	I

Question 7 – Business Case Document - 8 Marks

Why is this project initiated?
- This project is initiated the problems were faced by farmers in remote areas ack of availability of agricultural products like fertilizers,seeds,pesticides.

- Mr.Henry was the project sponsor and went to his childhood friends (Peter,kevin,and Ben) seen these issues facing them and all the farmers' problems.

- The goal is to create an online platform that connects farmers and manufacturers to remove distance between them and the required products should be given at their locations through online platforms.

What are the current problems?

- Farmers in remote areas facing shortage required products in agriculture.
- This lack of availability of products leads to reduction of crop fields and less production.

With this project,how many problems could be solved?

- This project aims to solve the problem of limited access to agriculture products for remote areas.
- By this online platform farmers get easy access to buy products like seeds,pesticides,and fertilizers.
- By this online platform farmers get their products at their locations
.

What are resources required?
- Financial resource 2 Crores INR allocated by SOONY Company.
- Human resources project team from APT IT SOLUTIONS like Project Manager,Java Developers,Testers,DB Admin,Network Admin,and a Business Analyst.
- In remote areas internet connectivity plays a major role.

How much organizational change is required to adopt this technology?

- By conducting some training classes in remote areas how to use this application, how to select required products and also how to pay online transactions.
- Both SOONY Company and APT IT SOLUTIONS should be maintained effectively by providing proper payment handling and customer support.
- This leads to increasing production of agriculture and quality of production..

What is the Time frame to recover?

- It depends on how effectively farmers are using this online platform.
- Making on transactions.
- Given products should be quality maintained by this farmers production should gets increased leads to ROI
- Operations costs.

How to identify stakeholders?
- Stakeholders are individuals or groups who have an interest in are effected by the project.
- Key stakeholders for this project are:

 *Farmers who purchase products through online platforms.

 *Manufacturers who sell their products.

 *Mr.Henry,the project sponsor

*SOONY company the funding organization.

*APT IT SOLUTIONS,the company developing the application with team members.

*Mr.Pandu (Financial Head) .

*Mr.Dooku(Project Coordinator)

*Peter,Kevin,Ben are the representatives and provide requirements to farmers.

SDLC Methodologies:

Sequential – Waterfall
Iterative–RUP(Rational Unified Process)
Evolutionary–Spiral
Agile–Scrum

Sequential Waterfall

This is most common and classic of life cycle models,also referred to as linear–sequential life cycle model.It is very simple to understand and use.In a waterfall model,each phase must be completed in its entirety before the next phase can begin.At the end of each phase,a review takes place to determine if the project is on the right path and weather or not to continue or discard the project.

Advantages
- Simple and easy to use.
- Easy to manage due to the high rigidity of the model –each phase has specific deliverables and a review process.
- Phases are processed and completed at a time.
- Works well for smaller projects where the requirements are very well understood

Disadvantages
- Adjusting scope during the life cycle can kill a project.
- No working software is produced until late during the life cycle.
- High amount of risk
- Poor model for complex and object-oriented projects.
- Poor model for long and ongoing projects.

Iterative–RUP(Rational Unified Process)

The Rational Unified Process(RUP) is an iterative software development process is a software development process framework created by Rational Software Corporation ,which was acquired by IBM in February 2003.
RUP is based on a set of building blocks, or content elements what is to be produced,the necessary skills required and the step–by–explanation describing how specific goals are to be achieved.

Three supporting disciplines
Configuration and Change Management
Project Management
Environment

Four Project Life Cycle Phases
Inception: agreement among the team and customer as to what will be built
Elaboration:agreement with in the team as to the architecture and design needed to deliver the agreed system behavior

Construction:the iterative of fully functional system
Transition:delivery,defect correction,and tuning to ensure customer acceptance

Evolutionary–Spiral

The spiral model gives more emphasis placed on Risk Analysis.The spiral model has four phases :Planning ,Risk Analysis,Engineering and Evolution.A software repeatedly passes through these phases in iterations.The baseline spiral,starting in the planning phase,requirements are gathered,and risk is assessed.

Requirements are gathered during the planning phase.In the risk analysis phase,a process is undertaken to identify risk and alternate solutions.A prototype is produced at the end of the risk analysis phase.Software is produced in the engineering phase,along with testing at the end of the phase.The evaluation phase allows the customer to evaluate the output of the project to date before the project continuous to the spiral represents cost.

Advantages
- High amount of risk analysis.
- Good for large and mission-critical projects.
- Software is produced early in the software life cycle.

Disadvantages
- Can be a costly model to use.
- Risk analysis requires highly specific expertise.
- Doesn't work well for smaller projects.

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Agile

Agile can be implemented where faster delivery is required.
No documentation.
Customer retention-since there is no documentation.
The code in itself forms as documentation
Not support scalability and extendibility
SDLC life cycle cut down by employing seasoned DEVELOPERS

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

Twelve Principles of Agile Software

1.Satisfy the customer through early and continuous delivery of valuable software .
2.Welcome changing requirements,even late in development.
3.Deliver working software frequently,from a couple of weeks to a couple of months,with a preference to the shorter time scale.
4.Business people and developers must work together throughout the project.
5.Build projects around motivated individuals.Give them the environment and support they need and trust them to get the job done.
6.The most efficient and effective method of conveying information
7. Working software is the primary measure of progress.
8. Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.
9. Continuous attention to technical excellence and good design enhances agility.
10. Simplicity--the art of maximizing the amount of work not done--is essential.
11. The best architectures, requirements, and designs emerge from self-organizing teams.
12. At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.

SDLC Models:
- V model
- RUP
- Spiral
- scrum

V model

1. Phases of the V-Model (Left Side - Development)

The left side of the V represents the stages of the development lifecycle. These steps are carried out sequentially, similar to the Waterfall model.

a. Requirements Analysis

- At this stage, the requirements of the system or software are gathered from the stakeholders or clients. It involves understanding and documenting both functional and non-functional requirements.

b. System Design

- Once the requirements are clear, the system design phase begins. The focus here is on how the software will be structured. High-level architecture and system components are defined. This is typically done in two sub-phases:

  High-level design: Focuses on the overall system architecture.

  Low-level design: Focuses on detailed component level design. **Implementation (Coding)**

- After the design phase, the actual coding or development of the software takes place. The system is built according to the design specifications.

2. Testing Phases (Right Side - Validation and Verification)

The right side of the "V" represents the validation and verification stages, which correspond to the stages of development on the left. As the development phases are completed, testing is performed to ensure that each development step was implemented correctly.

Unit Testing

- This phase corresponds to the coding/implementation phase. Unit testing is focused on testing individual units or components of the system to ensure they function as expected. It is typically done by developers during the coding phase.

Integration Testing

- After units are tested, integration testing is conducted to ensure that different system components or modules work together. It checks the interactions between various modules and verifies that they integrate seamlessly.

c. System Testing

- System testing involves testing the entire system as a whole. It ensures that the integrated components meet the system's functional and non-functional requirements, which were outlined in the Requirements Analysis phase.

d. Acceptance Testing

The final phase of testing is acceptance testing, where the system is tested in the real-world environment or with actual users. This phase determines whether the system meets the user's needs and expectations and if it is ready for deployment.

Advantages

- Simple and easy to use.
  Easy to manage due to the rigidity of the model - each phase has specific deliverables and a review process.
- Phases are processed and completed one at a time.
- Works well for smaller projects where requirements are very well understood.

Disadvantages

- Adjusting scope during the life cycle can kill a project
- No working software is produced until late during the life cycle.
- High amounts of risk and uncertainty.
- Poor model for complex and object-oriented projects.
- Poor model for long and ongoing projects.
- Poor model where requirements are at a moderate to high risk of changing.

RUP:

RUP emphasizes several key practices that guide the development process:

1. **Iterative Development**: Software development is broken into smaller iterations, allowing teams to refine the product incrementally and respond to changes in requirements or design.

2. **Architecture-Centric**: RUP stresses the importance of a strong architecture, which is crucial for a large and complex system. A well-designed architecture allows for easier changes and better maintainability.

3. **Risk Management**: RUP encourages identifying and mitigating risks early in the project lifecycle, ensuring that the project doesn't face unexpected roadblocks later on.

4. **Continuous Verification**: Testing is performed continuously throughout the development process. Each iteration should produce a working version of the system that can be tested, evaluated, and refined.

5. **Component-Based**: Emphasizes reusability of components, encouraging modular design so that components can be developed and tested independently.

6. **Stakeholder Involvement**: Continuous involvement of stakeholders is essential to ensure that the product aligns with the user's needs and expectations.

7. **Documenting Requirements**: RUP stresses the importance of well-documented requirements to minimize misunderstandings and rework.

Roles in RUP:

RUP defines multiple roles to ensure clear division of responsibilities:

- **Project Manager**: Oversees the entire project and ensures the project is completed on time, within scope, and on budget.
- **Business Analyst**: Responsible for gathering requirements and understanding the business goals.
- **System Architect**: Designs the overall system architecture and ensures that the technical aspects of the system are feasible.
- **Developer**: Responsible for writing the code and ensuring that it meets the design specifications.
- **Tester**: Ensures that the product is tested thoroughly during each iteration and that it meets quality standards.

- **User Interface Designer**: Designs the user interface to ensure that it is intuitive and meets user needs.

Advantages of RUP:

1. **Flexibility**: Since RUP is iterative, it allows for changes in requirements during the project lifecycle.
2. **Risk Mitigation**: Continuous testing and feedback help identify risks early in the development process.
3. **Clear Documentation**: RUP's emphasis on well-documented requirements and designs ensures better communication among team members and stakeholders.
4. **Adaptable**: RUP can be tailored to suit the needs of different organizations, projects, and industries.

Disadvantages of RUP:

1. **Complexity**: RUP can be too heavy for small projects, as it involves a lot of documentation and process overhead.
2. **Requires Expertise**: Proper implementation of RUP requires a good understanding of its principles and practices, which may not always be available in smaller teams.
3. **Time-Consuming**: Due to its documentation-heavy approach and multiple iterations, RUP can be time-consuming for projects with tight deadlines.

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Spiral

Planning Phase (or Objectives Setting)

This phase aims to define the project's objectives and the constraints that must be met. It involves gathering requirements, understanding project scope, and setting up a high-level plan for the iteration.

Risk Analysis Phase

This phase focuses on identifying, analyzing, and mitigating risks associated with the project. It involves evaluating alternative solutions and strategies, with a heavy focus on risk management.

Engineering Phase (Development and Testing)

This phase involves the actual development of the system, including design, coding, and testing. It follows the refined plan and risk mitigation strategies developed in earlier phases.

Evaluation and Planning for Next Iteration

This phase is where the current iteration's results are evaluated against user needs and requirements. The feedback is collected, and adjustments are made to the project plan for the next cycle.

Advantages

- High amount of risk analysis.
- Good for large and mission-critical projects.
- Software is produced early in the software life cycle.

Disadvantages

- Can be a costly model to use.
- Risk analysis requires highly specific expertise.
- Project's success is highly dependent on the risk analysis phase.
- Doesn't work well for smaller projects.

Scrum

Principles of Scrum:

- small, manageable increments (called Sprints), allowing teams to continuously improve and refine the product.
- Collaboration: Scrum emphasizes collaboration among team members and stakeholders, ensuring that everyone is aligned and working toward a shared goal.
- Transparency: Scrum values transparency of work progress, making sure that all Iterative and Incremental: Scrum is built around the idea of delivering work to stakeholders have visibility into the team's work, goals, and progress.
- Self-Organization: Scrum empowers the development team to self-organize, meaning they decide the best way to complete their work rather than being micromanaged.
- Continuous Improvement: Scrum incorporates regular feedback loops, helping teams assess their work and processes at the end of each Sprint, and continuously improve their practices.

Scrum Roles:

Product Owner:

The Product Owner represents the stakeholders and customers, and is responsible for managing the Product Backlog, a prioritized list of features, functionalities, and work items for the product. They ensure that the team works on the most valuable tasks at any given time.

Scrum Master:

The Scrum Master acts as a facilitator, ensuring that the Scrum process is followed properly and helping the team resolve any obstacles or challenges they encounter. The Scrum Master also works to ensure that Scrum practices are being adhered to and helps in removing any impediments that may hinder the team's progress.

Development Team:

The development team consists of professionals who work on delivering the product increment. This team is self-organizing and cross-functional, meaning it has all the necessary skills (e.g., coding, testing, design) to complete the work without needing outside help.

Scrum Events

Sprint:

- A Sprint is a time-boxed iteration (usually lasting between 1-4 weeks) during which a specific set of work items from the Product Backlog are selected and completed. Each Sprint starts with Sprint Planning and ends with a Sprint Review and Sprint Retrospective.
- The goal of a Sprint is to produce a usable and potentially shippable product increment.

Sprint Planning:

- Sprint Planning is the first event in each Sprint and involves the entire Scrum team. During this meeting, the Product Owner presents the highest-priority items from the Product Backlog, and the Development Team decides what can be accomplished in the upcoming Sprint.
- The team creates the Sprint Backlog (a list of tasks for the Sprint) and defines the Sprint Goal, which is the objective the team aims to achieve during the Sprint.

Daily Scrum (Daily Standup):

- A 15-minute time-boxed meeting held every day during the Sprint. In the Daily Scrum, the Development Team discusses what they did yesterday, what they plan to do today, and any obstacles they are facing.
- The goal is to synchronize efforts and make adjustments as needed. The Scrum Master facilitates this meeting, ensuring it stays focused.

Sprint Review:

- The Sprint Review takes place at the end of the Sprint. During this meeting, the Development Team demonstrates the work completed during the Sprint (the Increment) to the Product Owner and other stakeholders.
- Feedback is collected, and the Product Backlog is updated based on this feedback.

Scrum life cycle:

The Product Backlog is continuously refined and updated by the Product Owner, based on new feedback and evolving requirements. Items are prioritized, added, or removed as needed.

The Sprint Backlog is created and updated by the Development Team during the Sprint Planning meeting and is used throughout the Sprint to guide work.

The Increment represents the deliverables at the end of the Sprint, which are potentially shippable and meet the Definition of Done.

Meetings:

Sprint Planning Meeting

This happens at the beginning of each sprint and the team decides on what they will be delivering in the sprint.

Daily Scrum Meeting

This happens each day where team will just answer 3 questions:

1) What did you do today?

2) What will you do tomorrow?

3) Are there any impediments that are slowing or stopping you?

Sprint Review Meeting

This happens at the end of the sprint where the team will demo the completed stories to the product owner and get it cleared.

Sprint Retrospective Meeting

This happens at the end of the sprint where the team will answer these 3 questions:

1)What went well in the sprint?

2) what did not go well?

3) What are the required areas of improvements in the next sprint?

BA's Role in Agile Scrum:

To Start with, once a project is kicked off, BA does the requirement Planning, then conducts various requirement gathering sessions and analyses the requirement. Finally, the requirement is listed as 'FEATURE LIST'. This Feature list is drafted by BA and discussed with Product Owner. This feature list will have all enhancements and existing features (If it is a migration project).

Difference between Waterfall and V model:

Waterfall	V-model
Cost-Low	Expensive
Moves in a linear way	Moves in a parallel way
Testing occurs after the development phase is completed	Testing occurs at beginning stage of the development
Feedback is only received after the testing phase, which means issues are discovered late.	Feedback is received early in the process as testing is integrated with development.
Requires extensive documentation at each phase.	Requires documentation but is more aligned with development activities and testing
Difficult to make changes after a phase is complete, making it rigid.	Like Waterfall, it's still rigid, but defects are identified earlier, making it more adaptable.
Risk of missing key issues until the testing phase	Reduced risk since defects are caught during each phase, reducing late-stage issues.
Best for projects with fixed, well-understood requirements.	Ideal for projects where validation and verification are critical (e.g., safety-critical systems).
Limited to initial requirements and final delivery.	Limited to requirements and acceptance stages, but testing makes the process more efficient.
Changes are costly and challenging to	

implement once the development phase is started.	

As a BA, state your reason for choosing one model for this project

AS a BA,i choose a V-model that is better for this project.

Justification :

In this model testing is done throughout the development life cycle.This approach is crucial for Online agriculture product store.Its provide a reliable and user friendly platform for farmers to use their application .V-model focus on quality make it a more suitable choice for the online agriculture product store.V-model helps defect free product that leads free handling of its users.(farmers).

Question 12 – Gantt Chart - 5 Marks

The Committee of Mr. Henry, Mr Pandu, and Mr Dooku discussed with Mr Karthik and finalised on the V Model approach (RG, RA, Design, D1, T1, D2, T2, D3, T3, D4, T4 and UAT) Mr Vandanam is mapped as a PM to this project. He studies this Project and Prepares a Gantt chart with V Model (RG, RA, Design, D1, T1, D2, T2, D3, T3, D4, T4 and UAT) as development process and the Resources are PM, BA, Java Developers, testers, DB Admin, NW Admin

The V-Model phases mentioned here:

1. **RG (Requirement Gathering)** – Initial phase for gathering project requirements.
2. **RA (Requirement Analysis)** – Analyzing the gathered requirements in more detail.
3. **Design** – High-level design of the system based on the requirements.
4. **D1** – Low-level design phase, detailing the technical aspects of the system.
5. **T1** – Unit Testing (corresponding to D1, which is the low-level design).
6. **D2** – Integration design phase (detailing how various parts of the system will work together).
7. **T2** – Integration Testing (testing interactions between system components).
8. **D3** – System design phase (detailed design of the system as a whole).
9. **T3** – System Testing (testing the entire system as a whole).
10. **D4** – User Interface design (the UI/UX design of the system).
11. **T4** – User Acceptance Testing (UAT) where the product is tested by the end-users to ensure it meets the requirements.

Phase	Duration	Resources
RG(Requirement Gathering)	1 Week	PM,BA
RA(Requirement analysis)	1 Week	PM,BA
D(Design)	1 Week	PM,BA,Java Developers
D1(Low-Level design)	2 Weeks	BA,Developers
T1(Unit Testing)	1 Week	Testers,Java Developers
D2 (Integration Design)	1 Week	Java Developers, BA, DB Admin, NW Admin
T2 (Integration Testing)	2 weeks	Testers, Java Developers, DB Admin, NW Admin
D3 (System Design)	2 Weeks	Java Developers, BA, PM
T3 (System Testing)	2 weeks	Testers, Java Developers
D4 (User Interface Design)	1 Week	Java Developers, BA, UI/UX Designers
T4 (User Acceptance Testing)	1 Week	Testers, PM, BA, Java Developers, Business Users (UAT)

Task	Duration	PM	BA	Java Developer	Testers	DB Admin	NW Admin	UI/UX Designers

Task	Duration							
Requirements Gathering	1 Week	█	█					
Requirements Analysis	1 Week	█	█					
Design	2 Weeks	█	█	█				
D1(Low Level Design)	2 Weeks		█	█				
T1(Unit Testing)	1 Week			█	█			
D2(Integration Design)	1 Week		█	█		█	█	
T2(Integration Testing)	2 Weeks			█	█	█	█	
D3(System Design)	2 Weeks	█	█	█				
T3(System Testing)	2 Weeks			█	█			
D4(UI Design)	1 Week		█	█				█
T4((UAT)	1 Week	█	█	█	█			

Overall view

Resources	Week 1	Week 10	Week 20	Week 29	Week 38	Week 46	Week 55	Week 65	Week 73	Week 78
Project Management	1									
Business Analyst	3									
Java Developer			4							
Operations/ Support Head		1								
Testers						3				
Network Engineer	1									

Question 13 – Fixed Bid Vs Billing - 5 Marks

Explain the difference between Fixed Bid and Billing projects

Fixed Bid Projects:

Definition: A Fixed Bid (or Fixed Price) project is where the client and the service provider agree on a set price for the entire project before work begins. The scope, deliverables, and timeline are predefined, and the client pays a fixed amount for the completion of the project.

Structure: The total payment is agreed upon in advance, regardless of how much time or resources are required to complete the project. This is usually a one-time payment, though it can also be split into milestones.

 Billing Projects

Definition: Billing projects, often referred to as Time and Materials (T&M) or Hourly Billing, involve billing the client based on the actual time spent and materials used. The

service provider charges for the hours worked and resources consumed during the project.

 Structure: The client pays for the time spent by the service provider (hourly, daily, or weekly rates) plus any additional materials or resources required to complete the project.

Fixed Bid	
Fixed price agreed upfront	Paid based on time spent and materials used
Risk is on the service provider	Risk shared between the client and provider
Less flexibility for changes	Highly flexible, can change scope easily
Defined upfront and fixed	Evolving depends up on the progress
High certainty, predictable costs	Low certainty, variable costs
Typically a one-time payment or milestones	Hourly, daily, or weekly billing
Well defined low change projects	Projects with uncertain scope

Question 14 – Preparer Timesheets of a BA in various stages of SDLC - 20 marks

1)Design Timesheet of a BA

2)Development Timesheet of a BA

3)Testing Timesheet of a BA

 4)UAT Timesheet of a BA

5) Deployment and Implementation Timesheet of a BA

1. Design Timesheet of a BA

In the design phase, the BA focuses on translating the requirements gathered into detailed design specifications for the development team. This phase involves close collaboration with the stakeholders, technical teams, and UI/UX designers

Time Period	Task Description	Time Spent(hrs)	Notes
Day 1	Review initial requirements and design specifications	4	Review project scope, business requirements
Day 2-3	Assist in creating high-level design documents like use cases, wireframes, etc	6	Collaborate with designers, developers
Day 4	Define system interactions and data flow	5	Work with technical team to clarify flow
Day 5	Review design with stakeholders and gather feedback	4	Ensure the design aligns with business needs
Total Design Time		19 hrs	

2. Development Timesheet of a BA: In the development phase, the BA ensures that the developers understand the requirements clearly, assists with clarifying doubts, and make sure that the development stays aligned with the original business needs.

Time Period	Task Description	Time Spent (hrs)	Notes
Day 1-2	Collaborate with developers to ensure understanding of requirements	6	Provide clarifications on business requirements
Day 3-4	Track progress and ensure alignment with business goals	5	Review development progress with developers
Day 5	Conduct mid-sprint review meetings and support development team	4	Review and analyze any issues or changes
Total Development Time		15 hrs	

3. Testing Timesheet of a BA

In the testing phase, the BA ensures that the requirements are correctly implemented and that the system functions as expected from a business perspective. The BA may also create test cases and perform UAT-related testing.

Time Period	Task Description	Time Spent (hrs)	Notes
Day 1-2	Review test plans and ensure they align with business requirements	6	Verify all test cases are based on business needs
Day 3-4	Participate in test execution and validate results	6	Help testers with any requirement clarifications
Day 5	Review defect logs and help prioritize issues	4	Assist testers in identifying critical defects
Total Testing Time		16 hrs	

4. UAT Timesheet of a BA

In the User Acceptance Testing (UAT) phase, the BA works closely with the end-users to ensure the system meets the business needs. The BA documents the feedback and works with the development team to address any concerns or changes

Time Period	Task Description	Time Spent (hrs)	Notes
Day 1-2	Coordinate with stakeholders and end-users to plan UAT sessions	5	Organize user testing sessions and training
Day Day 3-4			Track results,

	Execute UAT with end-users and gather feedback	8	gather feedback from users
Day 5	Review feedback, communicate defects or enhancements to development team	4	Work with development to resolve issues
Total UAT Time		17 hrs	

5. Deployment and Implementation Timesheet of a BA

In the deployment and implementation phase, the BA ensures that the business requirements are fully met in the final product and helps with the final handover to the client or end-users. This involves ensuring the smooth transition from development to production

Time Period	Task Description	Time Spent (hrs)	Notes
Day 1-2	Prepare documentation for deployment, including any final checks	5	Ensure the business documentation is accurate
Day 3	Support deployment activities and confirm system functionality	6	Ensure the system is deployed as expected
Day 4	Conduct training and assist end-users with system adoption		Provide user manuals, guides, and system training
Day 5	Final review and project closure meeting	4	Verify all requirements are met, gather feedback
Total Deployment Time		20 hrs	

Total Timesheets for BA in Various SDLC Stages:

SDLC Stage	Total Hours
Design	19 hrs
Development	15 hrs
Testing	16 hrs
UAT	17 hrs
Deployment & Implementation	20 hrs
Total	**87 hrs**

This breakdown provides a clear picture of how a Business Analyst spends their time across various stages of the **Software Development Life Cycle (SDLC)**. Each stage requires a different focus and set of tasks, such as requirement gathering, design validation, test case review, user acceptance testing, and deployment support.

These timesheets can be used to track the BA's involvement, ensuring they add value at every phase of the project and help the team stay aligned with the business goals.