Question 1 – BPM

Goal:

To build an online store to help farmers buy seeds, pesticides, and fertilizers conveniently via the internet, improving access to essential farming products.

Inputs:

- Product Details: Information from manufacturers about the fertilizers, seeds, and pesticides available for sale.
- Farmer Details: Information about farmers (such as contact details, location, farming needs).

Resources:

- Warehouses: Storage facilities where the products are kept and dispatched from.
- Software: E-commerce platform (website or mobile app) that facilitates product listing, ordering, and payment processes.
- Transformation: The process of taking the order from farmers and converting it into product packaging, shipping, and delivery.
- Internet: The platform that enables farmers to access the online store, browse products, place orders, and make payments.

Activities:

1. Partnering with Product Suppliers: Establishing partnerships with reliable manufacturers and suppliers who provide quality products (seeds, pesticides, fertilizers) and guarantee timely delivery.
2. Cataloging Products: Uploading product details (description, price, availability, etc.) on the online store.
3. Marketing to Farmers: Creating awareness about the online store through advertising, outreach, and promotions targeted at farmers.
4. Order Processing: Handling the order when a farmer selects the product, processes payment, and initiates shipment.
5. Product Delivery: Managing logistics to ensure timely and safe delivery to farmers.
6. Customer Support: Offering after-sale services, including support for product queries, return/exchange policies, or delivery issues.

Outputs:

- Resolved Problems for Farmers: Making it easier for farmers to access the necessary products (seeds, fertilizers, pesticides) to improve their farming process and productivity.
- Improved Farming Practices: With timely access to the right products, farmers can enhance their crop yield, health, and overall farming efficiency.

Value:

- Ease of Access: Farmers can buy products anytime and from anywhere, without needing to travel to physical stores.
- Increased Productivity: Farmers receive high-quality products for their needs, improving farming efficiency and crop yield.
- Convenience: Streamlined purchasing process, reducing the time spent sourcing products.
- Business Growth: As the online store grows, it creates a larger network of suppliers and farmers, potentially contributing to local agricultural growth.

Question 2- SWOT

Strengths:

- Brand Recognition of SOONY: The company has strong brand recognition, which can build customer trust and encourage adoption of the new platform.
- Sufficient Capital: The company has enough capital to invest in the development and expansion of the online platform, ensuring smooth implementation and scalability.

Weaknesses:

- *Dependence on External Vendors: Relying on third-party vendors for product supply or services can lead to risks in terms of quality control, pricing, and timely delivery.*

- Supply Chain Disruptions: External factors (like global crises, logistics challenges, or political instability) could cause disruptions, impacting product availability and customer satisfaction.

- Inventory Management Issues: Inaccurate inventory management can lead to overstocking or stockouts, which could result in delayed orders or lost sales.
- New Market Segment: Entering a new market comes with the risk of unfamiliar customer behavior, competition, and the need to understand local demands and preferences.

Opportunities:

- Expansion into New Market: There is a potential to expand into untapped markets, opening new revenue streams and customer segments.
- Unique Platform: The new platform is one-of-a-kind with little competition in the portal space, offering a chance to capture market share early and build a loyal customer base.
- Emerging Trends in Online Shopping: The increasing shift toward online shopping, especially in agriculture and farming products, can present a significant opportunity for growth.

Threats:

- Local Vendors/Suppliers: Local competitors may offer similar products with the advantage of a well-established presence, lower delivery times, or potentially lower prices.
- Changes in Customer Buying Habits: Customer behavior may shift, and it's essential to stay aligned with evolving preferences. For example, if customers favor purchasing from physical stores over online platforms, it could affect sales.
- Economic Downturn or Regulatory Changes: Changes in regulations or economic conditions, such as inflation or increased import/export taxes, could affect costs, margins, and demand for products.

Question 3 – Feasibility study

A feasibility study helps answer the key question, "Should we move forward with this idea?" It looks at whether the project is possible within limits like technology, budget, and time.

- Technology – Based on database servers, payment gateways, security, and APIs.
- Hardware – Based on storage, backup systems, and network infrastructure.

- Software – Based on shopping cart software, content management system, and payment gateway software.
- Resources – Project management team, business analysts, and software developers.
- Budget – Budget of 2 Crores INR.
- Time frame – 18 months duration.

Question 4 – Gap Analysis

Current State:

- Farmers in Remote Areas have Difficulty in procuring essential agricultural products (fertilizers, seeds, pesticides) for farmers
- Farmers have Limited access to reliable sources for purchasing these products
- Lack of communication between manufacturers and farmers for product sourcing.
- No easy platform for browsing and purchasing agricultural products.
- Manufacturers have difficulties in reaching out to a broader customer base (especially in remote areas).
- There is no centralized platform for displaying and selling agricultural products.

Desired Future State:

- Online Agriculture Product Store
- A user-friendly platform (mobile/web app) where farmers can easily browse and purchase fertilizers, seeds, and pesticides.
- Direct communication between manufacturers and farmers through the platform.
- Farmers should easily order products and have them delivered to their location.

Question 5 – Risk Analysis

1. Internal Risks:

- Resource Availability: Limited availability of skilled developers, testers, or subject matter experts (SMEs).

- Budget Overrun: Risk of exceeding the 2 Crores INR budget if there are scope changes or delays.
- Timeline Delays: The risk of not completing the project within the 18-month duration.
- Stakeholder Alignment: Miscommunication or misalignment between Mr. Henry, Mr. Pandu, and Mr. Dooku, impacting decision-making.
- Technical Challenges: Issues in integrating payment gateways and third-party vendor APIs.

2. External Risks:

- Vendor/Supplier Issues: Delays or errors from third-party vendors in providing accurate product data.
- Regulatory Compliance: Changes in legal or regulatory requirements for e-commerce, payment gateways, or agricultural products.
- Market Dynamics: Shifts in the agricultural market that may impact the product's success.
- Environmental Factors: Unpredictable events like natural disasters affecting remote areas and logistics.
- Internet Connectivity: Potential issues with internet access in remote areas, impacting farmers' access to the application.

3. Business Analyst (BA) Risks:

- Requirement Misinterpretation: Risk of misunderstanding the needs of farmers or miscommunicating them to the development team.
- Incomplete Requirements Gathering: Missing critical features or not capturing the full scope of the user-friendly interface required by farmers.
- Change Management: Difficulty in managing changes in requirements during the project lifecycle.
- Stakeholder Expectations: The risk of not aligning project outcomes with stakeholder (farmers, vendors, internal team) expectations.
- Validation Gaps: Failing to verify and validate the solution thoroughly, leading to usability or functional issues.

4. Project-Based Risks:

- Scope Creep: Adding new features or expanding the project scope without adjusting the budget or timeline.
- Integration Risks: Challenges in integrating the online store with manufacturers' systems and payment gateways.
- Quality Assurance: Delivering a product that is not fully tested, especially for usability by farmers.
- Delivery and Logistics: Complications in delivering products to remote areas, affecting user satisfaction.
- Usability Risks: The risk that the application might not be as user-friendly as required, impacting adoption by farmers.

Question 6 – RACI Matrix

- RACI mentions the persons who are responsible, accountable, consulted and informed for a project

RACI	Name	Designation	Details				
Responsible	Ms. Juhi	Senior Java developer	Email - XXX@GMAIL.COM Phone NO- 123456789. Reach Out - 9am to 1pm IST				
	Mr. Teyso	Java Developer	Email - XXX@GMAIL.COM Phone NO- 123456789. Reach Out - 9am to 1pm IST				
	Ms. Lucia	Java Developer	Email - XXX@GMAIL.COM				

			Phone NO-123456789. Reach Out - 9am to 1pm IST				
	Mr. Tucker	Java Developer	Email - XXX@GMAIL.COM Phone NO-123456789. Reach Out - 9am to 1pm IST				
	Mr. Bravo	Java Developer	Email - XXX@GMAIL.COM Phone NO-123456789. Reach Out - 9am to 1pm IST				
	Ms. Alekya	Tester	Email - XXX@GMAIL.COM Phone NO-123456789. Reach Out - 9am to 1pm IST				
	Mr. Jason	Tester	Email - XXX@GMAIL.COM Phone NO-123456789. Reach Out - 9am to 1pm IST				
Accountable	Mr. Vandanam	Project Manager	Email - XXX@GMAIL.COM Phone NO-123456789. Reach				

			Out - 9am to 1pm IST				
	Mr. Karthik YJ	Business analyst	Email - XXX@GMAIL.COM Phone NO- 123456789. Reach Out - 9am to 1pm IST				
	Mr. Dooku	Project Coordinator	Email - XXX@GMAIL.COM Phone NO- 123456789. Reach Out - 9am to 1pm IST				
Consulted	Mr. Mike	Network Admin	Email - XXX@GMAIL.COM Phone NO- 123456789. Reach Out - 9am to 1pm IST				
	Mr. John	DB Admin	Email - XXX@GMAIL.COM Phone NO- 123456789. Reach Out - 9am to 1pm IST				
	Mr. Peter	SME	Email - XXX@GMAIL.COM Phone NO- 123456789. Reach Out - 9am to 1pm IST				

	Mr. Kevin	SME	Email - XXX@GMAIL.COM Phone NO- 123456789. Reach Out - 9am to 1pm IST				
	Mr. Ben	SME	Email - XXX@GMAIL.COM Phone NO- 123456789. Reach Out - 9am to 1pm IST				
	Mr. Pandu	Financial Head	Email - XXX@GMAIL.COM Phone NO- 123456789. Reach Out - 9am to 1pm IST				
Informed	Mr. Henry	Project Sponsor	Email - XXX@GMAIL.COM Phone NO- 123456789. Reach Out - 9am to 1pm IST				
	Mr. Karthik	Delivery Head	Email - XXX@GMAIL.COM Phone NO- 123456789. Reach Out - 9am to 1pm IST				

Question 7 – Business Case Document

I. Why is the project initiated?

The goal is to address the challenges farmers face in procuring essential farm products such as fertilizers, seeds, and pesticides. Aiming to create an online platform that allows farmers to easily purchase these products at competitive prices, ensuring quick delivery and access to the best market rates. This platform will streamline the buying process, making it more convenient and cost-effective for farmers.

ii. What are the current problems?

- Difficulties in procuring fertilizers which are very important for farming and buying seeds for farming certain crops.
- Concern on lack of pesticides.

Iii. With this project, how many problems would be solved?

- Procuring fertilizers, buying seeds, and purchasing pesticides for farmers has been made easier through this platform.
- Vendors are provided with a wide market reach to sell their products through this online website.

iv. What are the resources required?

- Warehouses: Storage facilities where the products are kept and dispatched from.
- Software: E-commerce platform (website or mobile app) that facilitates product listing, ordering, and payment processes.
- Transformation: The process of taking the order from farmers and converting it into product packaging, shipping, and delivery.
- Internet: The platform that enables farmers to access the online store, browse products, place orders, and make payments.

v. How much organisational change is required to adopt to this technology?

- Since logistics (order fulfillment, supply chain management, and delivery) was not part of the initial structure, a dedicated Logistics Team must be added.
- A team is needed to manage inventory, coordinate deliveries, and ensure smooth supply chain operations.
- The existing Subject Matter Experts (SMEs) and Project Coordinator focus on product development, but logistics requires specialized roles.

vi. What is the time frame to recover ROI.

The timeframe to recover ROI is four to five years after the project is completed and executed. Since the budget is ₹2 crore, it will take the necessary time to recover the investment.

The first two years will be dedicated to reaching out to the public and farmers through proper marketing. After that, depending on sales growth and positive word of mouth, it may take an additional two to three years to achieve full ROI.

vii. How to identify stakeholders?

Stakeholder analysis is based on ILS & RASCI Matrix

- ILS (Identify, List & Summary)

- RASCI Matrix (Responsible, Accountable, Supporting, Consulted and Informed)

Question 8 – Four SDLC Methodologies

What is SDLC?

Process which IT Companies follow to develop Software.
There are four types of SDLC Methodologies

1. Sequential
2. Iterative
3. Evolutionary
4. Agile

Here's a brief explanation of each:

1. Sequential: This is a linear approach to project management, where each phase is completed one after the other. It's often referred to as the "Waterfall" model. Each stage depends on the completion of the previous one.
2. Iterative: In this approach, the project is divided into smaller chunks or iterations. After each iteration, feedback is gathered, and improvements are made. The process repeats until the final product is complete.
3. Evolutionary: This approach focuses on continuous improvement of the product. The product evolves with incremental changes based on feedback and ongoing development, usually involving frequent releases.
4. Agile: Agile is an iterative and flexible approach that emphasizes collaboration, customer feedback, and small, rapid deliveries. Teams work in short cycles (sprints) and adjust based on feedback, making it adaptable and responsive to change.

Question 9 – Waterfall RUP Spiral and Scrum Models

1. Sequential - Waterfall
2. Iterative – RUP
3. Evolutionary - Spiral
4. Agile - Scrum

1. Waterfall Model – The Waterfall Model is a traditional and linear approach to software development. In this model, the process flows sequentially in one direction like a waterfall from one phase to the next. At the end of each phase a review takes place to determine if the project is running fine. At the end of each phase a review takes place to determine if the project is running fine.

   Stages of Waterfall Model –
   - Requirements Gathering
   - Requirement Analysis
   - Design

- Development
- Coding
- Testing.

2. V- Model - V- model means Verification and Validation model. Each phase must be completed before the next phase begins. Testing of the product is planned in parallel with a corresponding phase of development in V-model

3. Iterative – RUP - RUP is an iterative software development methodology. In RUP, the development is done module-wise or phase-wise. Here, change requests are welcomed at every phase. Hence, defects can be identified at early stages. RUP supports large and complex projects. In RUP, there are many stages, and it requires more budget and more time.

There are four stages in RUP:

1. Inception
2. Elaboration
3. Construction
4. Transition

4. Evolutionary – Spiral- The Spiral Model is a risk-driven process model for software projects. The Spiral Model has four phases:

1. Planning
2. Risk Analysis
3. Engineering
4. Evaluation

A software project repeatedly passes through these phases in iterations called spirals in the model.

4. Agile - Scrum -

Agile is a flexible, iterative, and customer-focused approach to software development.

Key Principles of Agile (According to the Agile Manifesto):

1. Individuals and interactions over processes and tools.
2. Working on software over comprehensive documentation.
3. Customer collaboration over contract negotiation.
4. Responding to change over following a plan.

Scrum is an Agile framework that helps teams develop and deliver products iteratively and incrementally. It focuses on collaboration, transparency, and continuous improvement through short development cycles called Sprints (typically 1–4 weeks long). As a Business Analyst, I prefer the V-Model for this project because it requires thorough verification and validation due to the involvement of third-party vendors to display their products, farmers who need user-friendly applications, and the integration of payment gateways.

As a BA, I prefer the V-Model for this project because it requires thorough verification and validation due to the involvement of third-party vendors to display their products, farmers who need user-friendly applications, and the integration of payment gateways.

Question 10 – Waterfall Vs V-Model

Waterfall Model:

- The waterfall model is a linear and sequential mode.
- In Waterfall testing is done after the complete development of the project. The risk is high as testing occurred post development.
- Waterfall model is used for projects where the requirements do not need any verification and to stick with the plan.

V-Model:

- Development and testing are done simultaneously.
- Testing is done after each phase of the model.
- The risk is low as it is detected at every phase.
- V-Model is used where verification and validation are required.

Question 11 – Justify your choice

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

I Choose V-Model

The V-Model is focused on verification and validation. In this project, we are dealing with third-party vendors and suppliers, making it essential to verify the solution to mitigate risks effectively. Given the commercial aspect involving payment gateways, the V-Model is highly recommended.

Since the requirements are well understood and the project involves complex processes, as mentioned earlier, the V-Model is the best fit. Additionally, creating a user-friendly model for farmers requires a deep dive into product features, which aligns well with the thorough testing approach of the V-Model.

Question 12 – Gantt Chart

Resources	Week 1	Week 5	Week 10	Week 20	Week 40	Week 60	Week 80	Week 100
Project Manager								
Busines analyst								
Java developers								
Testers								
DB Admin								
Network Admin								

Question 13 – Fixed Bid Vs Billing

Fixed Projects:

- The budget of the project is fixed before the project is initiated.
- The financial risk is higher for the developing company, as they may need to invest additional resources to complete the project.
- Fixed projects work best when the requirements are well understood.
- From a financial perspective, clients are comfortable since the budget is fixed, eliminating the risk of unexpected costs.
- There is very limited scope for changing requirements, as the budget is already allocated according to the initial requirements.

Billing projects

- Budget and Payment: The budget or payment is issued based on working hours, weekly hours, or monthly, along with the cost of resources and materials.
- Financial Burden: The financial burden is less for the company and more for the client, as costs fluctuate with changes and the budget is not static.
- Budget Flexibility: The budget is allocated according to the necessity of resources and time spent by the team.
- Scope for Changes: The scope for changing requirements is higher, as changes can be made as the project progresses.

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

S No	Tasks	Actionalbe Items	Start Time	End Time	Duration
1	Identify the stakeholder meeting	Meeting to list down the stakeholders	10:00 AM	11:00 AM	1 Hour
2	Client Interaction	A zoom call to update minutes of meeting	11:00 AM	1:00 PM	2 Hour
3	Finetuning the inputs for BRD Documents	SME Discussion - In person call	2:00 PM	3:00 PM	1 Hour
4	Requirements sorting	Working on the template	3:30 PM	4:30 PM	1 Hour
5	Team Meating	Discussion on the day inputs	4:30 PM	7:00 PM	2.5 Hours
					7.5 Hours