Question 1 – Business Process Model

Goal:
To enable farmers in remote areas to buy seeds, fertilizers, and pesticides easily via an online platform.

Inputs:

- Product details from manufacturers (fertilizers, seeds, pesticides).
- Farmer requirements/demand.
- Internet-enabled device access.

Resources:

- Online Agriculture Store Application (Web/Mobile).
- IT Infrastructure (Servers, Database, Network).
- Human resources (Developers, BA, PM, Testers, DB Admin, NW Admin).
- Budget and Timeframe.

Activities:

1. Manufacturers register and upload product details.
2. Farmers browse/search for products.
3. Farmers place orders.
4. Payment and order confirmation.
5. Logistics team arranges delivery to farmer location.

Outputs:

- Farmers receive agricultural products at their doorstep.
- Manufacturers expand market reach.

Value Created to End Customer:

- Easy procurement of quality seeds, fertilizers, and pesticides.
- Saves travel time & cost.
- Direct communication between farmers & companies.

Question 2 – SWOT Analysis

Strengths:	**Weaknesses:**
CSR initiative → Social impact and goodwill. Strong budget (₹2 Cr) and timeline (18 months). Dedicated IT talent pool. Digital solution for rural farmers.	Farmers may have low digital literacy. Internet penetration in remote areas is inconsistent. Logistics/delivery challenges in villages.
Opportunities: Huge untapped rural market. Partnership opportunities with agri-tech companies. Scalability to include farm equipment, loans, insurance	**Threats:** Competition from other e-commerce giants (Amazon, BigBasket). Risk of low adoption due to resistance to technology. Price fluctuations in seeds/fertilizers due to market dynamics.

Question 3 – Feasibility Study

Technical Feasibility:

- Technology: Java (proven, scalable, secure).
- Hardware: Servers, networking infrastructure, cloud hosting.
- Software: Java, Spring Boot, React/Angular for frontend, MySQL/Oracle DB.
- Trained Resources: Java developers, testers, DB admin, NW admin available.

Economic Feasibility:

- Budget approved: ₹2 Cr.
- CSR-funded, no revenue expectation initially.

Operational Feasibility:

- Farmers & manufacturers can use application with basic training.
- Delivery/logistics network needs to be established.

Time Feasibility:

- 18 months duration is realistic with planned phases.

Question 4 – Gap Analysis

AS-IS (Current Process):

- Farmers buy seeds, fertilizers, pesticides by visiting faraway towns.
- Middlemen increase cost.
- Limited availability of quality products.
- No direct link between manufacturers & farmers.

TO-BE (Diserd Process):

- Farmers use online platform to browse and order.
- Products delivered to farmer's location.
- Direct farmer–manufacturer interaction.
- Transparency in pricing & availability.

Gap:

- Lack of digital platform → Online Store.
- Lack of direct farmer-company communication → New system bridges.
- Time-consuming procurement → Faster access and delivery.

Question 5 – Risk Analysis

BA Risks:

- Incomplete requirement gathering.
- Miscommunication with non-technical farmers.
- Change in stakeholder expectations.

Process/Project Risks:

- Internet access issues in rural areas.
- Low adoption rate due to lack of digital literacy.
- Logistic and supply chain delays.
- Data security & payment fraud.
- Project cost overrun & delays.

- Resource attrition (developers/testers leaving).
- Vendor dependency risks.

Question 6 – Stakeholder Analysis (RACI Matrix)

RACI	STAKEHOLDERS	Designation	
Responsible	Mr. Karthik	Delivery Head (APT IT Solutions)	Securing Project
	Mr. Vandanam	Project Manager (APT IT Solutions)	Project execution
	Ms. Juhi	Senior Java Developer	Lead coding tasks
	Teyson, Lucie, Tucker, Bravo	Java Developers	Development
	Mr. Mike	Network Admin	Network setup
	John	DB Admin	Database setup
	Mr. Jason & Ms. Alekya	Testers	Testing activities
	You (BA)	Business Analyst	Requirements gathering, documentation
Accountable	Mr. Pandu	Financial Head (SOONY)	Budget decisions
	Mr. Vandanam	Project Manager (APT IT Solutions)	Delivery within time & budget
	Mr. Dooku	Project Coordinator (SOONY)	Project oversight
	Mr. Pandu	Financial Head (SOONY)	Financial advice
	Mr. Dooku	Project Coordinator (SOONY)	Progress updates
	Peter, Kevin, Ben	Farmers (Primary End-Users)	Requirements, feedback
Consulted	Mr. Karthik	Delivery Head (APT IT Solutions)	Strategy & delivery
	Mr. Vandanam	Project Manager (APT IT Solutions)	Progress, risks
	You (BA)	Business Analyst	With users & committee
	Ms. Juhi	Senior Java Developer	On technical feasibility
Informed	Peter, Kevin, Ben	Farmers (Primary End-Users)	Updates after release

Question 7 – Business Case Document

Purpose:
To provide farmers in rural areas with an online platform to procure seeds, fertilizers, and pesticides directly from manufacturers.

Problem Statement:
Farmers face difficulties in accessing quality agricultural inputs due to lack of availability and middlemen exploitation.

Proposed Solution:
Develop a web/mobile application to connect farmers directly with manufacturers.

Expected Benefits:

- Easy access to agri-products.
- Reduction in cost (no middlemen).
- Better crop yield through quality products.
- Farmer empowerment and rural upliftment.

Budget & Duration:
₹2 Crores, 18 months.

Risks:
Adoption issues, logistics, internet connectivity.

KPIs:

- No. of farmers registered.
- Orders processed successfully.
- Reduction in procurement costs.

Question 8 – SDLC Methodologies

1. **Sequential (Waterfall):** Sequential Methodology is a **step-by-step** development approach where each phase of the process is completed fully before moving to the next. Once a stage is finished, it cannot be revisited easily.
2. **Iterative:** Iterative Methodology is a process of developing a system or product through repeated cycles (iterations), where each cycle involves planning, designing, building, and testing. Feedback from each iteration is used to improve and refine the next version until the final solution is achieved
3. **Evolutionary:** An Evolutionary Methodology is an iterative and incremental approach to development, combining the waterfall model and incremental models, where a product is built in successive versions or iterations rather than a single release
4. **Agile:** Agile Methodology is a flexible and adaptive approach to software development (and project management) that delivers work in small, incremental

cycles (sprints/iterations), with continuous collaboration, customer feedback, and improvements at every stage**.**

Question 9 – Waterfall RUP Spiral and Scrum Models

- **Waterfall:** Waterfall Model is a sequential software development methodology in which the process flows **step by step in a linear order**, where each phase must be completed before moving to the next.
- **RUP (Rational Unified Process):** RUP (Rational Unified Process) Model is an iterative and incremental software development process framework developed by IBM Rational. It divides the software development lifecycle into **four phases** — Inception, Elaboration, Construction, and Transition — and emphasizes use-case driven design, risk management, and continuous user feedback. Spiral**:** Risk-driven, combines iterative + prototyping.
- **Scrum:** Scrum Model is an Agile framework for software and project development that organizes work into small, time-boxed cycles called sprints (usually 2–4 weeks), where a cross-functional team collaborates to deliver a working product increment after each sprint.
- **Spiral:** Spiral Model is a software development methodology that combines features of both iterative development and the Waterfall model, with a strong focus on risk analysis. The process is represented as a spiral, where each loop (cycle) consists of planning, risk analysis, engineering (development & testing), and evaluation, leading to gradual refinement of the system.

Question 10 – Waterfall Vs V-Model

Feature	Waterfall Model	V-Model
Approach	Linear, step-by-step	Linear + parallel testing (V-shape)
Testing	Done **after implementation**	Done **in parallel** with each phase
Risk Detection	Late (after coding)	Early (during design & requirement stages)
Flexibility	Low (hard to go back)	Low, but errors are caught earlier
Best for	Simple, low-risk projects	Complex, safety-critical projects

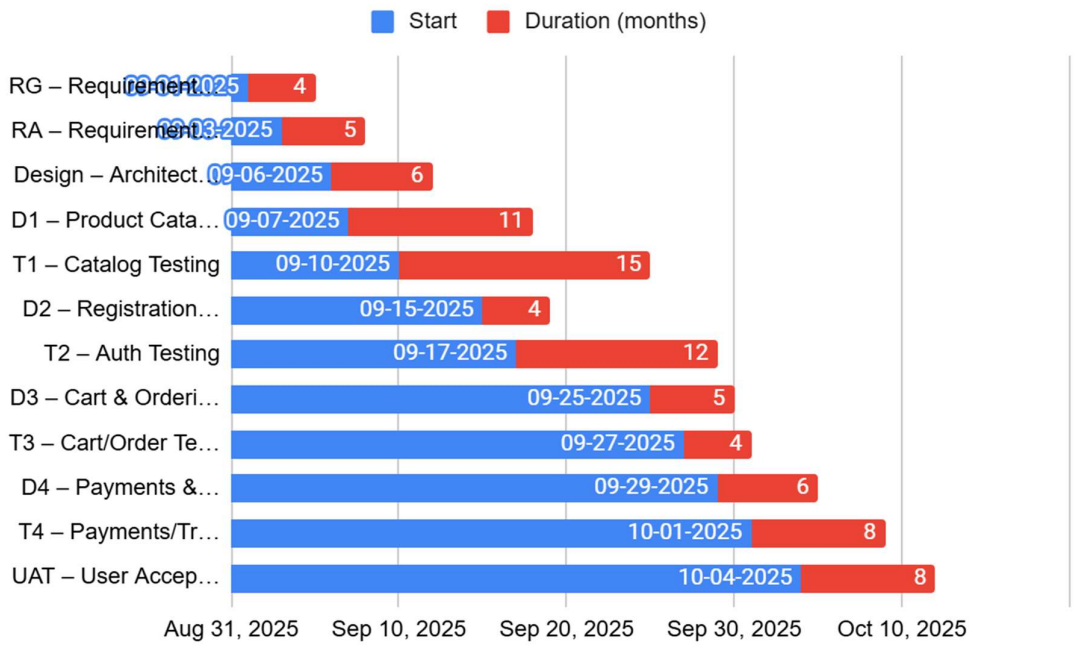
Example	E-commerce website	Medical device software, flight systems

Question 11 – Justify your choice

For this project, **V-Model** is better since:

- Farmers' needs are critical, and quality assurance is vital.
- Testing at every stage ensures fewer errors.
- Budget is high, so robust testing is affordable.

Question 12 – Gantt Chart



Question 13 – Fixed Bid Vs Billing

A Fixed Bid Project means the scope, budget, and timeline are agreed upon in advance between the client and the vendor. The vendor delivers the project within the agreed cost and schedule, no matter how much effort is required.

A Billing Project (also called Time & Material project) is where the client pays based on actual work done – like hours, days, or resources used.

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

Design Timesheet of a BA

S.No	Activity	Time spent in Hours
1	Requirement Gathering	4 hrs
2	Requirements Analysis	6 Hrs
3	Design Documentation	8Hrs
4	Meeting with Stakeholders	3 hrs
total		21 Hrs

Development Timesheet of a BA

S.No	Activity	Time spent in Hours
1	Discuss task with developers	5 Hrs
2	Review user stories	4 Hrs
3	Address requirements issues	3 Hrs
4	Updates Documentation	3 Hrs
Total		15 Hrs

Testing Timesheet of a BA

S.No	Activity	Time spent in Hours
1	Review Test case	3 Hrs
2	Validate requirements	4 Hrs
3	Participate in test execution	6 Hrs
Total		13 Hrs

UAT Timesheet of a BA

S.No	Activity	Time spent in Hours
1	Coordinate UAT sessions	3 hrs
2	UAT Support and issues resolution	5 Hrs
3	UAT Feedback Analysis	3 Hrs
Total		11 Hrs

Deployment n Implementation Timesheet of a BA

S.No	Activity	Time spent in Hours
1	Deployment Planning	5 Hrs
2	Coordinate Deployment	6 Hrs
3	Post Deployment Review	4 Hrs
Total		15 Hrs