Question 1 - Identify Business Process Model for Online Agriculture Store – (Goal, Inputs, Resources, Outputs, Activities, Value created to the end Customer)

Ans –

Goal: Provide an online platform for farmers to buy fertilizers, seeds, and pesticides directly from manufacturers.

Inputs: Farmer needs, manufacturer product listings, payment & logistics details, user feedback.

Resources: Business Owners is Mr. Henry, SOONY Company. APT IT SOLUTIONS (Project Manager, Developers, Testers, Network Admin, DB Admin). Farmers (buyers) and manufacturers (sellers) will be the end users.

Outputs: Functional e-commerce platform, efficient order system, better market reach.

Activities:

1. User Registration – Farmers and manufacturers sign up.
2. Product Listing – Manufacturers upload products.
3. Browsing & Selection – Farmers search and compare.
4. Order & Payment – Orders placed and payment done.
5. Order Fulfilments – Manufacturers process orders.
6. Delivery & Confirmation – Farmers receive products.
7. Reviews & Feedback – Farmers rate and review.

Value to Customers:

* Farmers: Easy access, fair pricing, convenience, quality products.
* Manufacturers: Wider market reach, direct sales, customer insights.

Question 2 - Mr Karthik is doing SWOT analysis before he accepts this project. What Aspects he Should consider as Strengths, as Weaknesses, as Opportunity and as Threats.

Ans –

Strengths:

* CSR-funded (2 Crores INR)
* Strong technical team (Java, DB, Testers)
* Direct farmer-manufacturer link
* Growing digital adoption in rural areas

Weaknesses:

* Low tech awareness among farmers
* Logistics challenges in remote areas
* Regulatory compliance for agri-products
* Internet dependency for platform access

Opportunities:

* Growing agri-tech market & govt support
* Expansion to advisory & farm equipment
* Partnerships with NGOs & Govt subsidies
* Data-driven insights for better services

Threats:

* Competition from e-commerce giants
* Farmer resistance to new technology
* Policy changes & economic risks
* Cybersecurity & supply chain issues

Question 3 – Mr Karthik is trying to do feasibility study on doing this project in Technology (Java), Please help him with points (HW SW Trained Resources Budget Time frame) to consider in feasibility Study.

Ans :-

* Hardware (HW): Cloud servers, database storage, secure network, mobile/desktop compatibility.
* Software (SW): Java (Spring Boot), React/Angular, MySQL/PostgreSQL, AWS/Azure hosting, SSL security.
* Trained Resources: Java Developers (Juhi & Team), DB Admin (John), Network Admin (Mike), Testers (Jason & Alekya).
* Budget: Within 2 Crores INR (Development, Cloud Hosting, APIs, Security, Marketing).
* Time Frame: 18 Months – Design (3M), Development & Testing (12M), Deployment (3M).

Question 4 – Mr Karthik must submit Gap Analysis to Mr Henry to convince to initiate this project. What points(compare AS-IS existing process with TO-BE future Process) to showcase in the GAP Analysis

Ans :-

Product Access

* AS-IS (Existing Process) :- Limited to local suppliers.
* TO-BE (Future Process) :- Wide online availability
* Gap Identified :- Restricted choices.

Pricing

* AS-IS (Existing Process) :- Middlemen increase costs.
* TO-BE (Future Process) :- Direct manufacturer pricing.
* Gap Identified:- Lack of transparency.

Ordering

* AS-IS (Existing Process) :- Physical visits required.
* TO-BE (Future Process) :- Online ordering anytime.
* Gap Identified:- Time-consuming.

Payments

* AS-IS (Existing Process) :- Cash-based, delays.
* TO-BE (Future Process) :- Secure online transactions.
* Gap Identified:- Payment risks.

Delivery

* AS-IS (Existing Process) :- Farmers arrange transport.
* TO-BE (Future Process) :- Doorstep delivery.
* Gap Identified:- Inefficient logistics.

Quality Check

* AS-IS (Existing Process) :- No reviews/ratings.
* TO-BE (Future Process) :- Verified sellers & ratings.
* Gap Identified:- No quality assurance.

Market Reach

* AS-IS (Existing Process) :- Limited to local buyers.
* TO-BE (Future Process) :- Nationwide farmer access.
* Gap Identified:- Sales restrictions.

Process

* AS-IS (Existing Process) :- Manual & paperwork-heavy.
* TO-BE (Future Process) :- Digital & automated.
* Gap Identified:- Lack of efficiency.

Question 5 – List down different risk factors that may be involved (BA Risks And process/Project Risks)

Ans :- 1. BA Risks ⚠️

* Incomplete Requirements – Farmers may not clearly define needs.
* Stakeholder Conflicts – Differing priorities among users.
* Changing Scope – Frequent modifications impact development.
* Regulatory Issues – Compliance with government policies.
* Usability Challenges – Farmers may struggle with tech adoption.

2. Process/Project Risks 🚧

* Technical Risks – Integration issues with payments & logistics.
* Adoption Risks – Farmers may resist switching to online.
* Security Risks – Data breaches & fraud concerns.
* Infrastructure Issues – Poor internet connectivity in rural areas.
* Budget & Timeline Overrun – Delays and unexpected costs.
* Logistics & Delivery Delays – Unreliable transport in remote areas.
* Competition – Big e-commerce players entering the market.

Question 6 – Perform stakeholder analysis (RACI Matrix) to find out the key stakeholders who can take. Decisions and Who are the influencers

Ans:-

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Task | Decision Makers (A/R) | Influencers (C) | Executors (R) | Informed (I) |
| Project Approval & Funding | Mr. Henry, Mr. Pandu | Mr. Dooku, Farmers | - | Mr. Karthik, PM, BA |
| Requirement Gathering | - | Mr. Dooku, Farmers | BA | PM, Developers |
| Budget Allocation | Mr. Pandu, Mr. Karthik | Mr. Dooku | - | PM, BA |
| Technical Feasibility | Mr. Karthik, PM | BA, Developers | Developers | Mr. Henry, Mr. Pandu |
| Project Execution | Mr. Karthik, PM | BA | Developers, Testers | Mr. Henry, Farmers |
| User Training & Adoption | Farmers, BA | PM | BA | Developers, Testers |
| Monitoring & Feedback | Farmers, BA | PM, Developers | BA | Mr. Henry, Mr. Pandu |

Question 7 – Help Mr Karthik to prepare a business case document

Business Case Document
Project Name: Online Agriculture Store
Prepared By: Mr. Karthik (Delivery Head, APT IT SOLUTIONS)
Date: [Insert Date]

Objective: Develop a digital platform for farmers to buy fertilizers, seeds, and pesticides directly from manufacturers, ensuring fair pricing and better accessibility.

Scope:

* Web & mobile-based marketplace
* Secure payments & order tracking
* Logistics integration for delivery
* Multi-language support

Budget: 2 Crores INR (Development, Marketing, Logistics, Contingency).

Timeline: 18 Months

* Phase 1 (0-3M): Requirement gathering & design
* Phase 2 (4-12M): Development & testing
* Phase 3 (13-15M): Pilot launch
* Phase 4 (16-18M): Full rollout

Risks & Mitigation:

* Low farmer adoption → Training & awareness campaigns
* Logistics delays → Partnering with delivery services
* Security threats → SSL encryption & fraud prevention

Stakeholders:

* Decision Makers: Mr. Henry, Mr. Pandu, Mr. Karthik
* Execution Team: Project Manager, BA, Developers, Testers
* Users: Farmers (Peter, Kevin, Ben), Manufacturers

Conclusion & Recommendation

The Online Agriculture Store is a feasible, high-impact project that aligns with SOONY’s CSR goals and the government’s digital agriculture vision. With the right technology, financial planning, and stakeholder collaboration, this project can significantly transform the agricultural supply chain. Approval is recommended.

Approval Signatures:
Mr. Henry (SOONY Owner): \_\_\_\_\_\_\_\_\_\_
Mr. Pandu (Finance Head, SOONY): \_\_\_\_\_\_\_\_\_\_
Mr. Karthik (Delivery Head, APT IT SOLUTIONS): \_\_\_\_\_\_\_\_\_\_

Question 8 – The Committee of Mr. Henry , Mr Pandu , and Mr Dooku and Mr Karthik are having a discussion on Project Development Approach.

Mr Karthik explained to Mr. Henry about SDLC. And four methodologies like Sequential Iterative Evolutionary and Agile. Please share your thoughts and clarity on Methodologies.

Ans - Sequential Methodology (Waterfall Model)

* Process: Follows a linear step-by-step approach: Requirement → Design → Development → Testing → Deployment.
* Best For: Projects with well-defined, fixed requirements where no major changes are expected.
* Drawback: No flexibility; changes are difficult once development starts.

2. Iterative Methodology

* Process: Development happens in repeated cycles (iterations), refining the software with each version.
* Best For: Projects where requirements evolve but a basic structure is defined.
* Drawback: Initial versions may not be fully functional, requiring continuous refinement.

3. Evolutionary Methodology (Prototype Model)

* Process: A working prototype is built and improved based on user feedback.
* Best For: Projects with high user involvement and unclear requirements.
* Drawback: Risk of scope creep due to continuous changes.

4. Agile Methodology

* Process: Development happens in short cycles (Sprints) with continuous user feedback and flexibility.
* Best For: Dynamic projects where requirements may change frequently (e.g., Online Agriculture Store).
* Drawback: Requires strong collaboration and active user involvement.

Question 9 – Waterfall RUP Spiral and Scrum Models

They discussed models in SDLC like waterfall RUP Spiral and Scrum. You put forth your understanding on

these models

When the APT IT SOLUTIONS company got the project to make this online agriculture product store,

there is a difference of opinion between a couple of SMEs and the project team regarding which

methodology would be more suitable for this project. SMEs are stressing on using the V model and the project team is leaning more onto the side of waterfall model. As a business analyst, which

methodology do you think would be better for this project?

Ans- During the discussion, the following SDLC models were evaluated:

1. Waterfall Model (Sequential)
	* Process: Linear and step-by-step approach: Requirement → Design → Development → Testing → Deployment.
	* Best For: Well-defined projects with fixed requirements.
	* Drawback: No flexibility; changes are difficult once development starts.
2. Rational Unified Process (RUP) (Iterative)
	* Process: Development happens in phases: Inception, Elaboration, Construction, and Transition.
	* Best For: Projects that need some flexibility but with structured phases.
	* Drawback: Complex and requires skilled resources.
3. Spiral Model (Evolutionary)
	* Process: Combines iterative development with risk assessment, refining the project in multiple loops.
	* Best For: Large, high-risk projects with evolving requirements.
	* Drawback: Expensive and requires strong risk analysis.
4. Scrum (Agile)
	* Process: Development occurs in short cycles (Sprints) with continuous feedback.
	* Best For: Dynamic projects where requirements change frequently.
	* Drawback: Requires strong collaboration and active user involvement.
5. V-Model (Validation & Verification Model):
	* Similar to Waterfall but with testing integrated at every stage.
	* Best For: Projects with clear, stable requirements and a strong focus on testing.

Best Choice for Online Agriculture Store: Neither V-Model nor Waterfall – Agile is Better

As a Business Analyst, I would recommend Agile (Scrum) over V-Model or Waterfall.

Question 10 - 20Write down the differences between waterfall model and V model.

Ans –

|  |  |  |
| --- | --- | --- |
| Aspect | Waterfall Model  | V-Model  |
| Process | Linear, step-by-step | Testing at each phase |
| Testing Phase | Happens after development | Parallel to development |
| Flexibility | Rigid, difficult to change | Slightly more structured with early testing |
| Risk Handling | High risk of late defects | Early detection reduces risks |
| Best for | Fixed, well-defined projects | High-quality, test-critical projects |
| Cost of Fixing Issues | High due to late defect discovery | Lower as errors are caught early |

Question 11- As a BA, state your reason for choosing one model for this project.

Ans- As a BA, I recommend Agile (Scrum) because:

* Frequent Changes: Farmers and manufacturers may request modifications.
* Early Feedback: Farmers can test and refine features during development.
* Faster Delivery: Incremental releases allow quick market entry.
* Risk Reduction: Continuous testing ensures early bug fixes.
* Better Collaboration: Regular updates keep all stakeholders aligned.

Question 12 – 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.

Ans -



Question 13 - Explain the difference between Fixed Bid and Billing projects

Ans-

|  |  |  |
| --- | --- | --- |
| Aspect | Fixed Bid  | Billing (T&M)  |
| Scope | Fixed, no major changes. | Flexible, can evolve. |
| Budget | Predefined, fixed price. | Variable, based on effort. |
| Risk | High for vendor (unexpected complexities). | Lower for vendor (paid for effort). |
| Client Control | Low, limited involvement. | High, continuous monitoring. |
| Best For | Well-defined projects. | Dynamic projects needing flexibility. |

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

Ans-

Design Timesheet of a BA

|  |  |  |
| --- | --- | --- |
| Week | Task | Hours Spent |
| Week 1 | Requirement Validation | 10 |
| Week 1 | Stakeholder Discussions | 8 |
| Week 1 | Documentation (FRS, SRS) | 12 |
| Week 1 | Wireframe/Mockups Preparation | 10 |
| Week 1 | Review Meetings | 6 |
| Week 1 | Gap Analysis | 8 |
| Week 1 | Approval & Sign-off Process | 6 |
| Week 2 | Requirement Validation | 10 |
| Week 2 | Stakeholder Discussions | 8 |
| Week 2 | Documentation (FRS, SRS) | 12 |
| Week 2 | Wireframe/Mockups Preparation | 10 |
| Week 2 | Review Meetings | 6 |
| Week 2 | Gap Analysis | 8 |
| Week 2 | Approval & Sign-off Process | 6 |
| Week 3 | Requirement Validation | 10 |
| Week 3 | Stakeholder Discussions | 8 |
| Week 3 | Documentation (FRS, SRS) | 12 |
| Week 3 | Wireframe/Mockups Preparation | 10 |
| Week 3 | Review Meetings | 6 |
| Week 3 | Gap Analysis | 8 |
| Week 3 | Approval & Sign-off Process | 6 |
| Week 4 | Requirement Validation | 10 |
| Week 4 | Stakeholder Discussions | 8 |
| Week 4 | Documentation (FRS, SRS) | 12 |
| Week 4 | Wireframe/Mockups Preparation | 10 |
| Week 4 | Review Meetings | 6 |
| Week 4 | Gap Analysis | 8 |
| Week 4 | Approval & Sign-off Process | 6 |

Development Timesheet of a BA

|  |  |  |
| --- | --- | --- |
| Week | Task | Hours Spent |
| Week 1 | Requirement Clarifications | 10 |
| Week 1 | User Story Refinement | 8 |
| Week 1 | Change Request Analysis | 10 |
| Week 1 | Supporting Developers with Requirements | 12 |
| Week 1 | Test Case Review & Validation | 8 |
| Week 1 | Sprint Planning & Review Meetings | 6 |
| Week 1 | Defect Analysis & Resolution Support | 6 |
| Week 2 | Requirement Clarifications | 10 |
| Week 2 | User Story Refinement | 8 |
| Week 2 | Change Request Analysis | 10 |
| Week 2 | Supporting Developers with Requirements | 12 |
| Week 2 | Test Case Review & Validation | 8 |
| Week 2 | Sprint Planning & Review Meetings | 6 |
| Week 2 | Defect Analysis & Resolution Support | 6 |
| Week 3 | Requirement Clarifications | 10 |
| Week 3 | User Story Refinement | 8 |
| Week 3 | Change Request Analysis | 10 |
| Week 3 | Supporting Developers with Requirements | 12 |
| Week 3 | Test Case Review & Validation | 8 |
| Week 3 | Sprint Planning & Review Meetings | 6 |
| Week 3 | Defect Analysis & Resolution Support | 6 |
| Week 4 | Requirement Clarifications | 10 |
| Week 4 | User Story Refinement | 8 |
| Week 4 | Change Request Analysis | 10 |
| Week 4 | Supporting Developers with Requirements | 12 |
| Week 4 | Test Case Review & Validation | 8 |
| Week 4 | Sprint Planning & Review Meetings | 6 |
| Week 4 | Defect Analysis & Resolution Support | 6 |

BA Testing Phase Timesheet

|  |  |  |
| --- | --- | --- |
| Week | Task | Hours Spent |
| Week 1 | Test Case Review & Validation | 10 |
| Week 1 | UAT Coordination & Support | 8 |
| Week 1 | Defect Triage & Analysis | 10 |
| Week 1 | Requirement Traceability Check | 12 |
| Week 1 | Stakeholder Feedback Handling | 8 |
| Week 1 | Regression Testing Support | 6 |
| Week 1 | Final Sign-Off Documentation | 6 |
| Week 2 | Test Case Review & Validation | 10 |
| Week 2 | UAT Coordination & Support | 8 |
| Week 2 | Defect Triage & Analysis | 10 |
| Week 2 | Requirement Traceability Check | 12 |
| Week 2 | Stakeholder Feedback Handling | 8 |
| Week 2 | Regression Testing Support | 6 |
| Week 2 | Final Sign-Off Documentation | 6 |
| Week 3 | Test Case Review & Validation | 10 |
| Week 3 | UAT Coordination & Support | 8 |
| Week 3 | Defect Triage & Analysis | 10 |
| Week 3 | Requirement Traceability Check | 12 |
| Week 3 | Stakeholder Feedback Handling | 8 |
| Week 3 | Regression Testing Support | 6 |
| Week 3 | Final Sign-Off Documentation | 6 |
| Week 4 | Test Case Review & Validation | 10 |
| Week 4 | UAT Coordination & Support | 8 |
| Week 4 | Defect Triage & Analysis | 10 |
| Week 4 | Requirement Traceability Check | 12 |
| Week 4 | Stakeholder Feedback Handling | 8 |
| Week 4 | Regression Testing Support | 6 |
| Week 4 | Final Sign-Off Documentation | 6 |

UAT Timesheet of a BA

|  |  |  |
| --- | --- | --- |
| Week | Task | Hours Spent |
| Week 1 | UAT Test Case Review & Approval | 10 |
| Week 1 | Coordinating with End Users | 8 |
| Week 1 | Defect Logging & Resolution Tracking | 10 |
| Week 1 | Requirement Validation against UAT Feedback | 12 |
| Week 1 | UAT Progress Reporting | 8 |
| Week 1 | Stakeholder Meetings & Feedback Incorporation | 6 |
| Week 1 | Final UAT Sign-Off Preparation | 6 |
| Week 2 | UAT Test Case Review & Approval | 10 |
| Week 2 | Coordinating with End Users | 8 |
| Week 2 | Defect Logging & Resolution Tracking | 10 |
| Week 2 | Requirement Validation against UAT Feedback | 12 |
| Week 2 | UAT Progress Reporting | 8 |
| Week 2 | Stakeholder Meetings & Feedback Incorporation | 6 |
| Week 2 | Final UAT Sign-Off Preparation | 6 |
| Week 3 | UAT Test Case Review & Approval | 10 |
| Week 3 | Coordinating with End Users | 8 |
| Week 3 | Defect Logging & Resolution Tracking | 10 |
| Week 3 | Requirement Validation against UAT Feedback | 12 |
| Week 3 | UAT Progress Reporting | 8 |
| Week 3 | Stakeholder Meetings & Feedback Incorporation | 6 |
| Week 3 | Final UAT Sign-Off Preparation | 6 |
| Week 4 | UAT Test Case Review & Approval | 10 |
| Week 4 | Coordinating with End Users | 8 |
| Week 4 | Defect Logging & Resolution Tracking | 10 |
| Week 4 | Requirement Validation against UAT Feedback | 12 |
| Week 4 | UAT Progress Reporting | 8 |
| Week 4 | Stakeholder Meetings & Feedback Incorporation | 6 |
| Week 4 | Final UAT Sign-Off Preparation | 6 |

Deployment n Implementation Timesheet of a BA

|  |  |  |
| --- | --- | --- |
| Week | Task | Hours Spent |
| Week 1 | Deployment Readiness Check | 10 |
| Week 1 | Coordinating with Technical Teams | 8 |
| Week 1 | User Training & Documentation | 10 |
| Week 1 | Go-Live Support & Monitoring | 12 |
| Week 1 | Stakeholder Communication & Updates | 8 |
| Week 1 | Issue Tracking & Quick Resolutions | 6 |
| Week 1 | Post-Deployment Review & Reporting | 6 |
| Week 2 | Deployment Readiness Check | 10 |
| Week 2 | Coordinating with Technical Teams | 8 |
| Week 2 | User Training & Documentation | 10 |
| Week 2 | Go-Live Support & Monitoring | 12 |
| Week 2 | Stakeholder Communication & Updates | 8 |
| Week 2 | Issue Tracking & Quick Resolutions | 6 |
| Week 2 | Post-Deployment Review & Reporting | 6 |
| Week 3 | Deployment Readiness Check | 10 |
| Week 3 | Coordinating with Technical Teams | 8 |
| Week 3 | User Training & Documentation | 10 |
| Week 3 | Go-Live Support & Monitoring | 12 |
| Week 3 | Stakeholder Communication & Updates | 8 |
| Week 3 | Issue Tracking & Quick Resolutions | 6 |
| Week 3 | Post-Deployment Review & Reporting | 6 |
| Week 4 | Deployment Readiness Check | 10 |
| Week 4 | Coordinating with Technical Teams | 8 |
| Week 4 | User Training & Documentation | 10 |
| Week 4 | Go-Live Support & Monitoring | 12 |
| Week 4 | Stakeholder Communication & Updates | 8 |
| Week 4 | Issue Tracking & Quick Resolutions | 6 |
| Week 4 | Post-Deployment Review & Reporting | 6 |