

Capstone Project 1 – Part 1/3

Case Study: Online Agriculture Products Store

By: Pramod G S – Business Analyst, APT IT Solutions

Duration: 18 months | **Budget:** ₹2 Crores | **Client:** SOONY Company

Question 1 – Business Process Model (BPM) (Goal, Inputs, Resources, Outputs, Activities, Value) – 5 Marks

Goal

Create a reliable, searchable, easy-to-use online marketplace where farmers can discover, compare, order, pay and receive agricultural inputs (fertilizers, seeds, pesticides) delivered to their location.

Inputs

- Manufacturer product catalogs: item name, SKU, category, composition, usage instructions, safety data, price, stock level, images, certification.
- Farmer data: registration, KYC (if required), farm location (geo-coordinates / address), payment preference.
- Logistics info: courier options, delivery lead times, costs.
- Regulatory/Compliance info: pesticide approvals, labeling requirements.

Resources

- People: Project Manager, Business Analyst (BA), Java Developers, UI/UX Designer, Testers, DB Admin, Network Admin, Delivery/logistics coordinator, Customer Support.
- Technology: Java (Spring Boot), RDBMS (MySQL/Postgres), REST APIs, Web front-end (responsive), Android/iOS mobile app or responsive PWA, Payment Gateway (Razorpay / Stripe), cloud hosting, SSL/TLS.
- Physical: Servers (cloud), testing devices (mobile phones), office infra.
- Budget: ₹2 Crores.

Activities (high-level)

1. Stakeholder identification & requirement gathering (workshops with farmers & manufacturers).
2. Requirement analysis & prioritization (must-have vs nice-to-have).
3. System & UI design (user journeys, wireframes, database schema).
4. Development in D1–D4 cycles & corresponding testing T1–T4 (V-Model).
5. Integration with payment gateway and logistics partners.
6. UAT with farmer pilot group.
7. Deployment, training & handover.
8. Post-deployment monitoring & iterative improvements.

Outputs / Deliverables

- Functional online store (web + mobile/PWA).
- Admin panel for manufacturers (product upload & inventory).
- Ordering, payment and delivery modules.
- Training materials and farmer helpdesk.
- Reports (sales, inventory, delivery metrics).

Value created for end-customer (farmers)

- Increased access to inputs (broader choice + remote delivery).
- Price transparency and comparison.
- Time and cost savings (avoid travel & middlemen).
- Access to product usage guidance and safety information.
- Records of purchases (digital receipts) helping farm planning.

BPM Diagram (textual / flow)

[Manufacturer: Upload Products] --> [Admin Approval/Verification] -->

[Catalog stored in DB] --> [Farmer Browses Catalog] --> [Add to Cart] -->

[Checkout & Payment] --> [Order Confirmation] --> [Logistics Pickup] -->

[Delivery to Farmer] --> [Feedback & Ratings] --> [Reports to Manufacturer]

Question 2 – SWOT Analysis (detailed) – 5 Marks

Strengths

- Financial backing: ₹2 Crore budget reduces funding risk.
- Clear social mission (CSR): Easier stakeholder buy-in, potential government/NGO support.
- Target problem well-defined: Real need (farmers lacking access).
- Existing technical talent: APT IT Solutions has a mapped team (PM, BA, developers, testers, admins).
- Pilot stakeholder support: Peter, Kevin, Ben as farmer-stakeholders for UAT/pilot.

Weaknesses

- Digital literacy gap: Many target users are new to online ordering.
- Rural internet reliability: Poor connectivity may hinder app usage.
- Logistics complexity: Last-mile delivery to remote farms is challenging and costly.
- Dependency on manufacturers: Need them to keep catalog and stock updated.
- Maintenance & support costs after launch not clearly budgeted.

Opportunities

- Large underserved market: Millions of smallholder farmers.
- Partnerships: Gov. agricultural departments, agri-input companies, microfinance / cooperative networks.
- Value-add services: Crop advisory, bundled offers, seasonal suggestions.
- Data insights: Usage and demand data to optimize stocking & marketing.
- Scale to B2B (cooperatives, retailers).

Threats

- Competition: Existing e-commerce platforms or new entrants targeting agri-inputs.
- Quality fraud risk: Counterfeit products or vendors may erode trust.
- Regulatory changes: Pesticide approvals, safety norms may affect product availability.
- Cybersecurity & payment fraud: Could damage reputation and trust.

Question 3 — Feasibility Study (Technology-focused: HW, SW, Resources, Budget, Time) — 5 Marks

Technical feasibility (Java stack)

- **Software architecture:** Microservices (recommended) or modular monolith using Spring Boot; REST API layers; front-end mobile-friendly (React / Angular / PWA).
- **Database:** Relational DB for transactions (Postgres/MySQL) + possible NoSQL for product search indexing (Elasticsearch) for fast search.
- **Integration:** Payment gateway (Razorpay/Stripe), SMS gateway, email service, logistics API.
- **Security:** HTTPS, data encryption at rest & transit, role-based access control, OWASP best practices.
- **Scalability:** Cloud deployment (AWS/Azure/GCP) with autoscaling to handle peak seasons.

Hardware (HW)

- **Development & Test:** Standard dev machines and mobile devices for testing.
- **Production:** Cloud instances with load balancer, auto-scaling, managed DB, CDN for images.
- **Backup & DR:** Daily backups; cross-region DR plan.

Software (SW)

- Java 11+ / Spring Boot, Maven/Gradle, Docker for containerization, Git for source control, Jenkins/GitHub Actions for CI/CD, Postgres/MySQL, Elasticsearch (optional).

Trained resources

- **Availability:** APT has PM, BA, senior+junior Java devs, testers, DB admin, network admin — adequate if consistently retained.
- **Training needs:** Farmer-facing UX needs UX research & local-language UI content; training for customer-support staff.

Budget

- **Estimate usage:** Development, testing, infra, pilot deployment, marketing & training, contingency (10–15%). ₹2 Crores appears sufficient if scope is well-managed: allocate for hardware, 18-month salaries, hosting, logistics trial, training.

Timeframe

- **18 months reasonable:** RG/RA/Design 4–7 months, D1–D4 & testing cycles 8–10 months, UAT & deployment 1–2 months; contingency for vendor/manufacturer onboarding = included.

Operational feasibility

- **Logistics partners:** Need to lock contracts or pilot local courier networks.
- **Regulatory:** Confirm pesticide distribution rules; handle required certifications.

Conclusion: Feasible with controlled scope, proper resource retention, and logistic partnerships.

Question 4 – Gap Analysis (AS-IS vs TO-BE) – 5 Marks

AS-IS (Current situation for farmers)

- Purchase via local stores / middlemen.
- Limited product choice; pricing opacity.
- Physical travel & time cost.
- Little record-keeping of past purchases.
- No structured seller accountability.
- Payments mostly cash; limited digital transaction use.

TO-BE (After system)

- Digital catalog containing multiple manufacturers.
- Transparent pricing and customer reviews.
- Mobile/web ordering with digital receipts.
- Doorstep delivery, scheduled deliveries for bulk orders.
- History of purchases and reorder reminders.
- Integrated payments and digital dispute resolution.

GAP Table (key items)

Area	AS-IS	TO-BE	Gap	Action
Catalog	Local & limited	Centralized, searchable	No central catalog	Build manufacturer portal + admin verification
Ordering	Offline	Online order flow (cart, checkout)	No ordering system	Implement responsive UI & simple checkout
Payment	Cash mostly	Digital & POS	Low digital adoption	Add cash-on-delivery and easy wallet options + training

Delivery	Local pickup	Last-mile delivery	No logistics integration	Partner with local couriers/aggregators
Trust/Quality	Manufacturer unknown	Verified sellers, ratings	Quality concerns	Vendor onboarding + returns policy, sample testing
Training	None	Onboarding + helpdesk	Digital literacy barrier	Field training & simple UI w/ vernacular languages

Roadmap to close gaps

1. Quick-win pilot in small district using local courier + 50 products.
2. Build manufacturer registration & verification workflow.
3. Farmer training program; local field agents for onboarding.
4. Expand logistics network once pilot validates demand.

Question 5 – Risk Analysis (BA Risks & Project / Process Risks) – 10 Marks

Below is a prioritized risk register with **Risk**, **Type**, **Probability (L/M/H)**, **Impact (L/M/H)**, **Severity (P×I)**, **Mitigation** and **Owner**.

#	Risk	Type	Prob.	Impact	Severity	Mitigation	Owner
1	Requirements incompleteness (farmers' needs misunderstood)	BA	M	H	High	Conduct field interviews, prototypes, validation sessions; maintain requirements traceability	BA
2	Low digital literacy	Business	H	H	Very High	Simplified UI, vernacular	PM/BA

	causing low adoption					language, training camps, local agents, hotline	
3	Internet connectivity variability	Technical	H	M	High	Provide low-bandwidth PWA, offline catalog, SMS ordering fallback	Dev Lead
4	Last-mile delivery failure / high cost	Operational	M	H	High	Partner with local logistics, use hub-and-spoke distribution, dynamic routing	Ops Lead
5	Manufacturer drop-off / inaccurate inventory	Business	M	M	Medium	SLAs with manufacturers; periodic reconciliation; inventory sync APIs	Product Owner
6	Security breach or payment fraud	Technical	L	H	High	Use secure payment gateway, PCI-DSS compliance, encryption, regular security audits	Security Lead

7	Scope creep causing budget overrun	Project	M	H	High	Change control board, contingency, fixed-scope sprints, regular budget review	PM
8	Resource turnover (key staff leave)	Project	M	M	Medium	Knowledge transfer, documentation, backup resources, hiring plan	PM/HR
9	Regulatory / policy change affecting product availability	External	L	H	High	Monitor regulations, compliance team input, legal review	Sponsor/Legal
10	Poor quality suppliers (counterfeits)	Business	M	H	High	Supplier verification, sample testing, return policy, penalties	Procurement

BA-specific risks & mitigations

- **Ambiguous user stories** → create well-defined acceptance criteria and use cases with mock-ups.
- **Unreachable stakeholders** → schedule recurring check-ins, use multiple channels (phone, field visits).

- **Misalignment of priorities** → maintain a prioritization matrix using MoSCoW (Must/Should/Could/Won't).

Risk monitoring

- Maintain a **live risk register** reviewed at weekly project review. Assign an owner for each risk and a mitigation deadline.

Question 6 — Stakeholder Analysis (RACI Matrix + Stakeholder Register) — 8 Marks

Stakeholder Register (summary)

Stakeholder	Role	Interest	Power	Influence	Notes
Mr. Henry	Sponsor (funding)	High	High	High	Strategic decisions, approves budget
Mr. Pandu	Finance Head	High	High	Medium	Sign-off on budget and financial compliance
Mr. Dooku	Project Coordinator	High	Medium	High	Coordinates between SOONY & APT
Mr. Karthik	Delivery Head (APT)	High	High	High	Accountable for delivery
Vandanam	Project Manager	High	Medium	High	Day-to-day management
BA (You)	Business Analyst	High	Medium	High	Requirements, stakeholder liaison
Developers (Juhi, Teyson,	Delivery	Medium	Low	Medium	Build product

Lucie, Tucker, Bravo)					
Testers (Jason, Alekya)	QA	Medium	Low	Medium	Test cycles
DB Admin (John)	DB Management	Low	Low	Low	DB setup & backups
Network Admin (Mike)	Infra	Low	Low	Low	Network & infra
Manufacturers	Suppliers	High	Low	High	Provide catalog + inventory
Farmers (Peter, Kevin, Ben + pilot users)	End Users	High	Low	High	UAT & acceptance

RACI Matrix (key activities)

Activity	Sponsor (Henry)	Finance (Pandu)	Coordinator (Dooku)	Delivery Head (Karthik)	PM (Vandanam)	BA	Dev Team	Testers	DB Admin	Network Admin	Farmers
Business case approval	A	C	C	R	I	C	I	I	I	I	I
Requirements gathering	I	I	I	I	C	R	C	I	I	I	C
Prioritization (scope)	A	C	C	R	C	C	I	I	I	I	I

System design & architecture	I	I	I	A	R	C	C	I	C	C	I
Development	I	I	I	I	A	I	R	I	I	I	I
Testing & QA	I	I	I	I	A	C	C	R	I	I	I
UAT	I	I	I	I	C	R	I	C	I	I	A
Deployment	I	I	I	A	R	C	C	R	C	C	I
Budget change approval	A	R	C	I	I	I	I	I	I	I	I

Legend: R = Responsible, A = Accountable, C = Consulted, I = Informed

Key decision-makers vs influencers

- **Decision-makers:** Mr. Henry (sponsor), Mr. Pandu (finance sign-off), Mr. Karthik (delivery acceptance), PM for day-to-day.
- **Influencers:** Mr. Dooku (coordinator), BA (requirements shaping), Farmers (user acceptance/pilot feedback), Manufacturers (supply decisions).

Question 7 – Business Case Document (full elaboration) – 8 Marks

BUSINESS CASE: Online Agriculture Products Store

1. Executive Summary

Mr. Henry (SOONY) funds an 18-month CSR initiative, budget ₹2 Crores, to develop an online marketplace that connects farmers and product manufacturers for seeds, fertilizers, pesticides. The initiative addresses supply constraints for remote farmers, increases transparency and reduces transaction costs.

2. Problem Statement

Many farmers in remote villages face scarcity of inputs, information asymmetry, and spend significant time & travel cost securing agricultural inputs. Middlemen increase costs and reduce transparency.

3. Objectives

- Enable farmers to order quality inputs online.
- Improve product availability and lower procurement time/cost.
- Provide verified manufacturer access and build trust.
- Capture demand data to help supply optimization.

4. Scope

In-scope: Web + mobile PWA, manufacturer portal, order management, payment integration, delivery integration (pilot), UAT & farmer training.

Out-of-scope (initial): credit financing, crop advisory (could be phase 2).

5. Options Considered

- Option 1: Do Nothing — no capital cost but problem persists.
- Option 2: Build custom platform (recommended) — full control, tailored UX.
- Option 3: Use existing marketplace (tie-up) — quicker but limited feature control & less farmer-friendly.

6. Recommended Solution

Custom-built Java-based platform (Spring Boot), responsive UI/PWA, payment gateway, logistics API, manufacturer admin panel, farmer onboarding & multilingual support.

7. Benefits (quantified & qualitative)

- **Qualitative:** improved farmer convenience, brand goodwill for sponsor.
- **Quantified (estimates):**
 - Pilot of 5,000 farmers: if average basket ₹1,500 and 1 purchase/month → monthly GMV ₹7.5M.

- If platform captures 10% margin (service + logistics subsidy), potential revenue to reinvest in service and scale.
(Note: exact ROI requires more market data; above is illustrative.)

8. Costs

- Development & testing: ₹60–80 L
 - Infrastructure & hosting (18 months): ₹10–15 L
 - Logistics pilot (subsidy): ₹20–30 L
 - Training, marketing, farmer onboarding: ₹15–20 L
 - Contingency (10–15%): ₹20–25 L
- Total: ~₹2 Crores (budgeted)**

9. Risks & Mitigation

(Refer to Question 5 risk register.)

10. Timeline & Milestones

18 months with RG/RA/Design, D1–D4 + T1–T4, UAT and Deployment. (See Gantt chart for milestones.)

11. Acceptance Criteria

- Successful UAT with pilot farmers ($\geq 80\%$ successful order flows).
- Secure payment processing validated.
- Manufacturer portal functioning with 90% catalog accuracy.
- Logistics delivering 95% of orders on-time during pilot.

12. Governance

Project steering committee: Mr. Henry (Chair), Mr. Pandu, Mr. Dooku, Mr. Karthik; weekly project status, risk reviews, milestone sign-offs.

13. Recommendation

Proceed with Option 3 (Custom build) with phased pilot & scaled rollout; approve ₹2 Crores budget, appoint PM & BA to start RG.

Question 8 — Four SDLC Methodologies (Sequential, Iterative, Evolutionary, Agile) — 8 Marks

1. Sequential (Waterfall)

- **Description:** Linear, phase-by-phase (Requirements → Design → Development → Test → Deployment).
- **Pros:** Simple to manage, clear milestones, good documentation.
- **Cons:** Inflexible to changes, late discovery of issues.
- **When to use:** Well-understood requirements and regulated environments.

2. Iterative (e.g., RUP)

- **Description:** Develop in repeated cycles; each iteration adds more functionality.
- **Pros:** Early feedback, allows refining architecture and requirements.
- **Cons:** Requires careful iteration planning; potential for scope creep.
- **When to use:** Medium complexity projects where requirements may evolve.

3. Evolutionary (Spiral)

- **Description:** Risk-driven, builds prototypes and evolves through repeated risk analysis and development cycles.
- **Pros:** Manages high-risk items early; good for complex systems.
- **Cons:** Heavy in planning and expertise; can be expensive.
- **When to use:** High-risk, complex, or novel technology projects.

4. Agile (Scrum)

- **Description:** Incremental sprints, tight stakeholder collaboration, frequent releases.
- **Pros:** Responsive to change, fast value delivery, continuous improvement.
- **Cons:** Harder for fixed-price contracts, needs disciplined teams and engaged stakeholders.
- **When to use:** Projects with evolving requirements and need for quick feedback.

Suitability for this project: Because of CSR constraints, traceability needs, and a mix of predictable & evolving features (must-have catalog + iterative add-ons), a hybrid approach is often recommended: **V-Model for strict verification/validation + Agile iterations for feature additions** (we recommended V-model for core release with Agile sprints for subsequent feature rollout).

Question 9 – Waterfall, RUP, Spiral, Scrum (details & fit) – 8 Marks

Waterfall

- **Approach:** Requirements → Design → Build → Test → Deploy.
- **Best for:** Clear requirements, regulatory needs.
- **Fit for project:** Good for core, compliance-heavy modules but not for UI/UX iterative improvements.

RUP (Rational Unified Process)

- **Approach:** Iterative top-down lifecycle: Inception, Elaboration, Construction, Transition.
- **Strong points:** Architecture focus early, iterative risk reduction.
- **Fit:** Suitable if the team uses structured RUP practices; heavier process overhead.

Spiral

- **Approach:** Cycles of planning, risk analysis, engineering, evaluation (prototype focus).
- **Strong points:** Risk mitigation through iterative prototypes.
- **Fit:** If product scope is highly uncertain or there are many technical risks (e.g., new logistics integration methods), Spiral is helpful.

Scrum (Agile)

- **Approach:** Sprints (2–4 weeks), cross-functional teams, backlog grooming, sprint review & retrospective.
- **Strong points:** Quick feedback, adaptability.

- **Fit:** Excellent for incremental features (UI, farmer onboarding experience, advisory services) and for continuous improvement post-pilot.

Recommendation: Use **V-Model** for initial regulated, test-driven core release (catalog, transaction, payment) and then adopt **Scrum** for continuous improvement and new features. This hybrid balances quality assurance with agility.

Question 10 – Waterfall vs V-Model (differences & implications) – 5 Marks

Key differences

- **Flow & emphasis:** Waterfall is linear; V-Model maps verification activities to each development phase (left-side = requirements/design; right-side = testing/validation).
- **Testing:** Waterfall tests after implementation; V-Model plans & defines testing at each earlier phase (unit test ↔ component design, integration test ↔ architecture, system test ↔ system design, acceptance test ↔ requirements).
- **Traceability:** V-Model offers better traceability between requirements and tests.
- **Flexibility:** Both are less flexible than Agile; V-Model slightly better for tracking quality.
- **Risk handling:** V-Model reduces risk by early test planning.

Table summary

Aspect	Waterfall	V-Model
Testing strategy	End-of-cycle	Test-design parallel to design
Traceability	Limited	High
Suitability	Simple, small projects	Projects needing strong QA & traceability
Change management	Hard	Slightly better due to explicit validation
Documentation	Required	Heavier than waterfall for test artifacts

Question 11 — Justify your choice of methodology for this project — 3 Marks

Chosen approach: V-Model (for core release) + Agile (Scrum) for iterative feature rollouts

Why V-Model (primary)

- The project demands **strong verification & validation** (payment security, legal compliance for pesticide sales) and requires precise acceptance criteria for UAT with farmers — V-Model supports test planning from the start.
- Stakeholders require **traceability** (sponsor, finance) to see requirements → test mapping; V-Model supports this directly.
- CSR budget and fixed deliverables align with a plan-driven model where acceptance criteria are critical.

Why complement with Agile

- Post-core release, farmer feedback and UI improvements will be frequent; Scrum enables iterative improvements and rapid response to user feedback.
- This hybrid reduces launch risk (quality) while enabling continuous product-market fit tuning.

Question 12 — Gantt Chart (V-Model phases) — 5 Marks

Timeline (text)

- **Project start:** 1 Jan 2024 — **Finish:** 30 Jun 2025 (18 months)
- **Phases & durations:**
 - Requirement Gathering (RG): Jan 1, 2024 – Feb 29, 2024 (2 months)
 - Requirement Analysis (RA): Mar 1, 2024 – Apr 30, 2024 (2 months)
 - Design: May 1, 2024 – Jul 31, 2024 (3 months)
 - D1–T1 (Module 1: Core Catalog & Auth): Aug 1, 2024 – Sep 30, 2024 (2 months)
 - D2–T2 (Module 2: Ordering & Payment): Oct 1, 2024 – Dec 31, 2024 (3 months) *
 - D3–T3 (Module 3: Manufacturer Admin & Inventory): Jan 1, 2025 – Feb 28, 2025 (2 months)

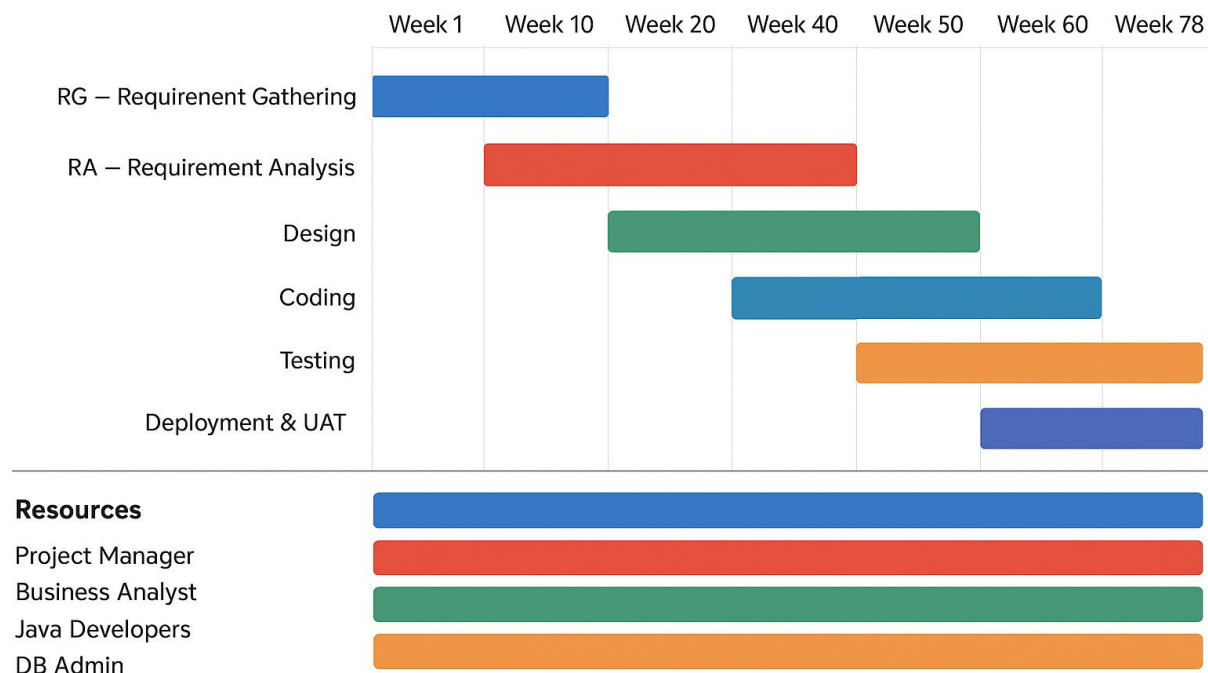
- D4–T4 (Module 4: Logistics & Reporting): Mar 1, 2025 – Apr 30, 2025 (2 months)
- UAT & Pilot: May 1, 2025 – Jun 30, 2025 (2 months)

* Adjusted durations to distribute development cycles across 18 months.

Milestones

- **M1:** Business case approval (End Jan 2024)
- **M2:** Requirements sign-off (End Apr 2024)
- **M3:** Design sign-off (End Jul 2024)
- **M4:** D1–T1 completion (End Sep 2024)
- **M5:** Payment integration & T2 (End Dec 2024)
- **M6:** Manufacturer Portal delivered (End Feb 2025)
- **M7:** Logistics & Reporting (End Apr 2025)
- **M8:** Successful UAT & Pilot acceptance (End Jun 2025)

Online Agriculture Product Store



Question 13 — Fixed Bid vs Billing (Time & Material) — 5 Marks

Definitions

- **Fixed Bid (Fixed Price):** The client pays a pre-agreed amount for delivering a defined scope of work.
- **Billing (Time & Material):** The client pays for actual hours and materials consumed, typically at agreed hourly rates.

Comparison

Aspect	Fixed Bid	Time & Material (T&M)
Price predictability	High	Low
Risk	Vendor bears risk of overruns	Client bears risk of overruns
Change management	Changes cause re-negotiation & add cost	Easier to accommodate changes
Best for	Well-defined scope & specs	Evolving scope & exploratory work
Billing process	Milestone-based payments	Weekly/Monthly invoices by hours

Pros & Cons for THIS PROJECT

Fixed Bid — Pros

- Fits CSR budgeting & sponsor preference for fixed-cost deliverables.
- Predictable for sponsor.

Fixed Bid — Cons

- Needs very well-specified requirements; change requests expensive.
- Vendor may inflate contingency or reduce flexibility.

T&M — Pros

- Flexibility to change scope based on farmer feedback.
- Easier to iterate and adapt to unforeseen technical/logistic issues.

T&M – Cons

- Sponsor may resist open-ended costs; harder to secure CSR approval.

Recommendation

- **Hybrid contract:** Fixed bid for **core scope** (catalog, ordering, payment, admin) with clear acceptance criteria and milestone payments. Use **T&M** for **post-launch iterations, localizations, training and pilot expansions**. Include:
 - Change control process (CRs evaluated & priced).
 - Acceptance criteria & UAT sign-off.
 - SLA for bug fixes post-deployment.
 - Contingency budget (10–15%).

Question 14 — Preparer Timesheets of a BA in various SDLC stages (detailed) — 20 Marks

Below are **detailed BA activities, deliverables, and estimated times**. I'll give per-phase responsibilities, a sample weekly timesheet format, and an 18-month allocation summary.

BA Role by Phase — Activities & Deliverables

1) Requirement Gathering (RG) — (2 months)

Activities

- Plan stakeholder interviews and field visits with farmer-stakeholders (Peter, Kevin, Ben).
- Prepare interview scripts & surveys (vernacular-friendly).
- Conduct manufacturer workshops to capture product catalog needs.
- Document raw requirements (user stories, use cases, personas).

Deliverables

- Stakeholder register
- Interview transcripts

- Initial BRD (Business Requirements Document)
 - High-level process flows & personas
- Estimated BA effort:** 30–40 hrs/week (intense fieldwork + analysis).
-

2) Requirement Analysis (RA) — (2 months)

Activities

- Consolidate, prioritize via MoSCoW.
- Create detailed functional requirements and acceptance criteria.
- Build requirement traceability matrix (RTM).
- Prepare testable requirements in collaboration with Test Lead.

Deliverables

- Functional Specification (SRS)
 - RTM mapping requirements → test cases
 - Use Cases, User Journeys & UI sketches
- Estimated BA effort:** 30–35 hrs/week.
-

3) Design Phase — (3 months)

Activities

- Translate requirements into UI mockups & wireframes.
- Work with architects to define system interactions (APIs).
- Define data model needs (fields for products, orders, payments).
- Prepare non-functional requirements (performance, security).

Deliverables

- UI wireframes & clickable prototypes
 - Data model & API contract docs
 - NFR document (scalability, security SLAs)
- Estimated BA effort:** 25–30 hrs/week.

4) Development Phases (D1–D4) & Corresponding Tests (T1–T4)

Activities during Dn

- Clarify queries; write acceptance criteria for stories.
- Support developers with detailed scenarios.
- Update requirements for change requests (if approved).

Activities during Tn

- Create UAT scenarios (from RTM).
- Participate in defect triage with QA.
- Validate fixes and sign-off test cases.

Deliverables

- Updated BRD/SRS, acceptance tests, defect logs, change request docs.
Estimated BA effort: 20–30 hrs/week depending on phase intensity.

5) UAT Phase — (2 months)

Activities

- Coordinate farmer pilot UAT sessions (scheduling, scripts).
- Train pilot users & collect feedback.
- Facilitate defect prioritization & re-testing.
- Prepare acceptance sign-off checklists.

Deliverables

- UAT plan, UAT scripts, UAT sign-off, pilot feedback report
Estimated BA effort: 25–30 hrs/week.
-

6) Deployment & Implementation — (2–4 weeks but included in deployment month)

Activities

- Prepare release notes & runbooks.
- Create user manuals & quick-start guides in vernacular languages.
- Train support team & farmers (materials & webinars).
- Triaging post-deployment issues.

Deliverables

- Deployment checklist, user manuals, training schedule
- Estimated BA effort:** 15–20 hrs/week during deployment & first month support.

Weekly BA timesheet template (one-week example)

Date	Phase	Task	Hours	Deliverable / Comment
2024-01-05	RG	Field visit with farmer-stakeholders (Peter)	6	Interview notes
2024-01-06	RG	Manufacturer workshop (catalog fields)	6	Raw reqs doc
2024-01-07	RG	Consolidate notes & create personas	4	Persona doc
2024-01-08	RG	Draft BRD sections	4	BRD v0.1
2024-01-09	RG	Team sync & backlog creation	2	Backlog created
Total			22	

(Adjust hours per week based on phase intensity.)

Example BA timesheet matrix across phases (18-month summary) — estimated average weekly hours

Phase	Duration	Avg hrs/week (BA)	Notes
RG	2 months	35	Field visits + interviews
RA	2 months	32	Detailed SRS + RTM
Design	3 months	28	Wireframes, API contracts
D1–T1	2 months	24	Clarifications, acceptance tests
D2–T2	3 months	24	Payment & order modules
D3–T3	2 months	22	Manufacturer admin
D4–T4	2 months	22	Logistics & reporting
UAT	2 months	28	Pilot coordination & sign-off
Deployment & Hypercare	1 month	20	Training & handover
Total average: Varies by month; BA should plan for peaks (RG & UAT).			

Timesheet examples — by SDLC stage (more granular)

Design timesheet (sample 1-week)

- UX review & wireframe sign-off — 8 hrs
- API contract meeting — 4 hrs

- Data model & fields finalization — 4 hrs
- Acceptance criteria write-up — 8 hrs
- Team sync — 2 hrs

Development timesheet (during D2)

- Clarify payment gateway integration details — 6 hrs
- Write acceptance tests for checkout flow — 8 hrs
- Review developer build & smoke test — 4 hrs
- Handle 2 CRs (assess & document) — 4 hrs
- Daily stand-up / sync — 2 hrs

Testing / QA timesheet (during T2)

- Map test cases to RTM — 6 hrs
- Join defect triage & prioritize — 6 hrs
- Validate fixes & sign off regression tests — 8 hrs
- Update UAT scripts — 4 hrs

UAT timesheet (pilot execution)

- Prepare UAT environment & scripts — 6 hrs
- Conduct farmer UAT sessions (group + individual) — 10 hrs
- Collect & analyze feedback — 6 hrs
- Prepare UAT sign-off report — 4 hrs

Deployment & Implementation timesheet

- Prepare release notes & rollback plan — 4 hrs
- Conduct training session for support staff — 4 hrs
- Attend deployment window & quick triage — 8 hrs
- Post-deployment validation & metrics check — 4 hrs