**Question 1. BPM**

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

**Answer:**

This Online Agriculture Product Store’s Business process model is mentioned below

**Goal:** To make Agriculture products easily available at one place and to earn Profit

**Specific Inputs:** Agriculture products Data, Trained employees, Product Catalog, Customer Details, Cart Details, Order Details, Customer Address, Customer Feedback

**User Resources:** Internet, Delivery Agents, Farmers, Companies producing Agricultural Products, Payment Gateways

**Specific Outputs:** Details of products, Selected items in Shopping Cart, Order confirmation Acknowledgement, Delivery of Product

**Activities:** Login, Searching the product, Selection of product, buying the product, payment, delivery

**Value Created:** Customer satisfaction

**Question 2. SWOT analysis**

**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.**

**Answer:** Following will be the strengths, opportunities, weaknesses and threats in usage of the online agriculture product system

|  |  |
| --- | --- |
| **Strengths:**1. As this is a new a scheme will be helpful to all farmers.
2. Experienced people who are working in that field are there.
3. Experienced team from APT solutions.
4. Scalability to add more features and more regions
5. It will connect Farmers, Suppliers, Buyers in one ecosystem
6. Digital payment solutions for secure transactions
7. Convenient for users as it is accessible everywhere.

  | **Weaknesses:**1. People are not that aware about online applications as they may lack experience with smartphones.
2. Connectivity issue as user base belongs to remote areas
3. Trust issues
4. More chances for replication of idea.
5. If the app doesn’t support local language, it will fail
6. App’s demand may vary seasonally, which will affect usage of app.
7. Dependencies on Third Parties i.e. Payment gateways and suppliers increases.
 |
| **Opportunities:**1. It can bring digital Transformation in agriculture industry
2. Changes of market enhancement
3. Can add value added services or features like videos for handling app, weather information, market prices etc.
4. Promote organic and ecofriendly products
5. Can collaborate with Government Agencies, private Companies
6. Exploring AI options
7. Empowering women and Youth
 | **Threats:**1. Competition with new players in the market
2. Infrastructure limitations like internet and devices for app use
3. Trust about product Quality
4. Political effect
5. Operational challenges with vendors, distributors.
6. Financial risk as the as the number of orders may fluctuate based on plating, harvesting which will lead to generation of inconsistent revenue
 |

**Question 3: Feasibility study**

**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.**

**Answer:**

Budget: 2 Cr

Time: 18 Months

**Technology:** Based onDB servers, Security, Payment Gateways

**Hardware:** Based on Storage, Backup systems, Network Infrastructure

**Software:** Based on Payment Gateway software, Agricultural Product Application Software, Security software

**Resources:** Based on Software development Team, BA, Project Team

**Budget:** Based onSalary paid to Team members,

cost of hardware, software and technology

**Timeframe:** Based on Members in Project

**Question 4: GAP Analysis**

**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?**

**Answer:**

**AS-IS:**

1. No system to Communicate Between Buyers and Sellers.
2. Farmers Dependence on few vendors for purchase of agricultural Products
3. Less Awareness in Rural Regions.
4. Use of Offline Product Purchase system.
5. Less Availability of Products.

**TO-BE:**

1. System which will communicate between buyers and sellers
2. Farmers will not be dependent on Few vendors as They are getting a large platform for purchase of products.
3. More Awareness in rural Regions.
4. Use of Online Product Purchase System.
5. More Availability of Products.

**Question 5: Risk Analysis**

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

**Answer:**

**BA Risks:**

1. Coordinate between testers, developers and stakeholders
2. Incomplete Requirements Gathering
3. Changes in Requirements
4. Lack of Training

**Process Risks:**

1. Technical Issues
2. System Downtime
3. Untrained Employees
4. Bugs in system

**Environmental Risks:**

1. Changes in Weather conditions

**Question 6: Stakeholder Analysis (RACI Matrix)**

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



|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Name**  | **Position** | **Contact Details of persons**  | **R** | **A** | **C** | **I** |
| Mr. Henry | Owner |  | - | - | ✓ | ✓ |
| Mr. Peter | Stakeholder |  | - | - | ✓ | ✓ |
| Mr. Kevin | Stakeholder |  | - | - | ✓ | ✓ |
| Mr. Ben | Stakeholder |  | - | - | ✓ | ✓ |
| Mr. Pandu | Financial Head |  | - | - | ✓ | ✓ |
| Mr. Doku | Project Co-ordinator |  | - | - | ✓ | ✓ |
| Mr. Karthik | Delivery Head |  | - | ✓ | - | - |
| Mr. Vandanam | Project Manager |  | - | ✓ | - | - |
| Ms. Juhi | Senior Java Developer |  | - | ✓ | - | - |
| Mr. Teyson | Java Developer |  | ✓ | - | - | - |
| Ms. Lucie | Java Developer |  | ✓ | - | - | - |
| Mr. Tucker | Java Developer |  | ✓ | - | - | - |
| Mr. Bravo | Java Developer |  | ✓ | - | - | - |
| Mr. Mike | Network Admin |  | - | - | ✓ | - |
| Mr. John | DB Admin |  | - | - | ✓ | - |
| Mr. Jason | Tester |  | ✓ | - | - | - |
| Ms. Alekya | Tester |  | ✓ | - | - | - |
| Ms. Kalyani | BA |  | - | ✓ | - | - |

**Question 7 – Business Case Document**

**Help Mr Karthik to prepare a business case document**

**Answer:**

* Why is this app being Developed?
* What is the current Situation in the market?
* How will you solve the issue with this application?
* What are Your Resources?
* What is the Time frame for the Project?
* What is the Budget for the Project?
* What will be the Stake of Other Stakeholders?
* Who are the stake holders?
* What is agenda to complete the project?
* What are the Pain Areas in this Project?
* What was the Previous method used by customers?
* How will you Guide People to use the online system?
* What procedure do expect for this system?

**Question 8 – Four SDLC Methodologies**

**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**

**Answer:**

SDLC Methodologies are the processes used by the Development team to complete the SDLC (software development life cycle). They are cost effective and time efficient. There are four SDLC methodologies i.e. Sequential, Iterative, Evolutionary and Agile.

1. **Sequential -** It is a linear Method. In this methodology each face must be completed before initiation of the next phase. The waterfall model is a sequential SDLC model. In the sequential method Validation is done at the end.

2. **Iterative-** It is based on an Iterative and Incremental action. Validation is completed at each stage in this method. Rational Unified Process is one model of Iterative Method.

3. **Evolutionary -**This method focuses on Risk Analysis. A prototype is produced in one of the phases of this method and is re-engineered as per customer requirement.

1. **Agile-** Can be implemented where fast delivery is required. No documentation is required.

**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?**

**Answer:**

**Waterfall**

- Waterfall is the most common and classic model. it is a linear sequential life cycle model.

- Each phase must be completed before the initiation of the next phase.

- Waterfall Model has five phases i.e. 1. Requirements gathering 2. Requirement Analysis

3. Design 4. Development 5. Testing.

- Testing is done only at the end of the procedure.

**RUP**

- RUP is an iterative software development process. The main building blocks or content elements of RUP are 1. Roles 2. Work Products 3. Tasks.

- Within each iteration the tasks are categorised into 9 disciplines in which 6 are engineering disciplines and 3 are supporting disciplines.

- RUP has four project life cycle faces 1. Inception 2. Elaboration 3. Construction 4. Transition

- The phases include

1. Inception: agreement of what to build

2. Elaboration: agreement for architecture and design needed to be delivered

3. Construction: implementation of a functional system

4. Transition: delivery defect correction

**Spiral**

- Spiral model gives emphasis on risk analysis. It has four phases 1. Planning 2. Risk Analysis 3. Engineering 4.Evaluation.

- The project repeatedly passes through these phases in iteration which are called Spirals in this model. The angular component of spiral model represents progress and radius represents its cost.

- The procedures in each phase are as follows

1. Planning: The baseline spiral starts in this Phase and the Requirements are gathered in this phase.

2. Risk Analysis: In this phase the risks are analysed and alternate solutions are used. Prototype is produced at the end of a risk analysis phase.

3. Engineering: Software is produced and testing is done at the end of this phase.

4. Evaluation: Allows customer to evaluate the output of the project and continuous to next parallel if required.

**Scrum**

- This model has Faster delivery and no documentation is required in this process so the customer can be retained, as the code itself forms as documentation.

- Scrum can be implemented either at the beginning or at the middle of the project if the project is falling behind.

- Key Words in Scrum are

1.Scrum team - Includes BA, Developers and Testers. Average size7-8

2. Product Owner – Responsible for how the product has to be.

3. Scrum Master: Monitor the Performance of the Team. Usually, BA plays this role.

4. Burn Down Chart: Graphical view of Work left Vs Time in an iteration.

5.Epic: Set of related user stories

6. Product Backlog: All stories and All requirements are mentioned here

7.Meetings:

 i. Sprint Planning meeting: Happens at beginning of each sprint.

 ii. Daily Scrum Meeting: Team has to answers 3 questions about daily progress

iii. Sprint Review Meeting: Happens at the end of Sprint. Completed User Stories are

 demonstrated to Product owner.

iv. Sprint Retrospective: Team answers the questions saying what went well, what not and

 what are improvements are required.

8.Iteration: Each Iteration includes all waterfall Activities. Time 1-4weeks

9.Scrum: Iterative Development Methodology

10.Sprint: Time Boxed to deliver a specific set of user stories.

11.Storypoints: Determine the size of user story.

**Question 10. Waterfall Vs V-Model**

**Write down the differences between waterfall model and V model.**

**Answer:**

|  |  |  |
| --- | --- | --- |
| Sr. No. | Waterfall Model | V Model |
| 1. | Waterfall is a linear Sequential Life cycle Model. | V model is a Parallel Life cycle Model. |
| 2. | In Waterfall model Testing cannot run parallelly with validation | In V Model Testing runs parallelly with validation. |
| 3. | Waterfall Model is less Flexible | V Model is moderately flexible. |
| 4. | In Waterfall Model Testing phase starts after development | In V Model Testing Phase Works Parallelly with development phase.  |
| 5. | In Waterfall Model there is High Risk as defects were identified Late. | In V model there is low Risk as defects were identified earlier. |
| 6. | In waterfall Model Costumer involvement is less. | In V Model customer involvement is more. |

**Question 11 – Justify your choice**

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

**Answer:**

* **Waterfall Model** will be best suited method for Online Agriculture Product Store.
* As this is a small project with low complexity.
* The requirements for this project are clear and well defined.
* Waterfall Method makes the Project Cost effective and Time Efficient.
* Minimal Customer involvement During Development Phase.
* Since each phase is completed before next, it makes the project budget predictable.

**Question 12 – Gantt Chart**

**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.**

**Answer:**



**Question 13 – Fixed Bid Vs Billing**

**Explain the difference between Fixed Bid and Billing projects**

**Answer:**

|  |  |  |
| --- | --- | --- |
| Sr. No. | Fixed Bid Projects | Billing Projects |
| 1. | **In Fixed Bid Projects client pays the total amount when the work is done.** | **In Billing Projects client pays the amount in Hourly or Daily Rate** |
| 2. | **Project scope is Limited in Fixed Bid Projects.** | **Project scope is High in Billing Projects.** |
| 3. | **In Fixed Bid Projects payment is based on full delivery.** | **In Billing Projects payment is Periodic as work processes.** |

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

**➢ Design Timesheet of a BA**

**➢ Development Timesheet of a BA**

**➢ Testing Timesheet of a BA**

**➢ UAT Timesheet of a BA**

**➢ Deployment n Implementation Timesheet of a BA**

|  |
| --- |
| **Design Timesheet** |
| **Sr. No.** | **Task** | **Start Time** | **End Time** | **Duration****(hrs)** |
| **1.** | Requirements analysis | 10:00 | 11:30 | 01:30 |
| **2.** | Documentation | 11:30 | 12:15 | 00:45 |
| **3.** | Stakeholder Review | 12:15 | 02:30 | 02:15 |
| **4.** | Risk Assessment | 03:00 | 04:30 | 01:30 |
| **5.** | Team meeting | 04:30 | 06:30 | 02:00 |

|  |
| --- |
| **Development Timesheet** |
| **Sr. No.** | **Task** | **Start Time** | **End Time** | **Duration****(hrs)** |
| **1.** | Process Mapping | 10:00 | 11:30 | 01:30 |
| **2.** | Process Building | 11:30 | 12:15 | 00:45 |
| **3.** | Development | 12:15 | 02:30 | 02:15 |
| **4.** | Bug Detection | 03:00 | 04:30 | 01:30 |
| **5.** | Team meeting | 04:30 | 06:30 | 02:00 |

|  |
| --- |
| **Testing Timesheet** |
| **Sr. No.** | **Task** | **Start Time** | **End Time** | **Duration****(hrs)** |
| **1.** | Test Planning | 10:00 | 11:30 | 01:30 |
| **2.** | Test case Design | 11:30 | 12:15 | 00:45 |
| **3.** | Test Execution | 12:15 | 02:30 | 02:15 |
| **4.** | Bug testing & reporting | 03:00 | 04:30 | 01:30 |
| **5.** | Team meeting | 04:30 | 06:30 | 02:00 |

|  |
| --- |
| **UAT Timesheet** |
| **Sr. No.** | **Task** | **Start Time** | **End Time** | **Duration****(hrs)** |
| **1.** | UAT Planning | 10:00 | 11:30 | 01:30 |
| **2.** | Test Case Review | 11:30 | 12:15 | 00:45 |
| **3.** | Issue Reporting | 12:15 | 02:30 | 02:15 |
| **4.** | Test Execution | 03:00 | 04:30 | 01:30 |
| **5.** | Team meeting | 04:30 | 06:30 | 02:00 |

|  |
| --- |
| **Deployment and Implementation Timesheet** |
| **Sr. No.** | **Task** | **Start Time** | **End Time** | **Duration****(hrs)** |
| **1.** | Pre-Deployment planning | 10:00 | 11:30 | 01:30 |
| **2.** | Server Preparation | 11:30 | 12:15 | 00:45 |
| **3.** | Software installation | 12:15 | 02:30 | 02:15 |
| **4.** | DB Configuration | 03:00 | 04:30 | 01:30 |
| **5.** | Deployment | 04:30 | 06:30 | 02:00 |