1. **Requirement and Types of requirements:**

Requirements are nothing but the needs of the client. This is also called as problems faced by client or opportunity for a solution. This basic need will transform into solution through various stages of SDLC and will solve any problems faced by the client and will give a new opportunity to develop business or growth. There are 4 basic types of requirements- Business requirements, Stakeholder requirements, Solution requirements (Functional and Non-functional requirements) and Transition requirements.

1. **Solution Requirements:**

Solution requirements are the characteristics of a solution that meets business and stakeholder requirements. They are developed and defined through requirement analysis. They are classified into 2 categories- Functional and Non-functional requirements. Functional requirements are the capabilities or the features that system will be able to perform to meet the business objectives. Non-functional requirements are the quality or supplementary requirements which describe the environmental conditions under which solution must remain effective.

1. **Business Process Modelling:**

Business Process Modelling is technique to represent the business processes which are collection of activities to generate an output from the input using the resources to meet the goal to provide some value to the customer or end user. Typically, business process modelling will have goal, inputs, outputs, activities, resources and value it brings to the customer.

1. **Reasons for Project Failure:**

Project will be failed due to various reasons as below.

1. Improper requirement gathering- Client and BA are responsible
2. Continuous change in requirements- Client is responsible
3. Lack of user involvement- Client and BA are responsible
4. Lack of executive support- PM & Management are responsible
5. Unrealistic expectations- Client is responsible
6. Improper planning- PM & Management are responsible
7. **Assumptions and Constraints of a project:**

Assumptions are conditions which are believed to be true or expected to be constant for the successful execution of the project. These are not proven or guaranteed but taken as granted or valid to execute the project. Expectation of correct requirements from stakeholders, timely approvals and availability of resources are examples.

Constraints are the limitations or restrictions that define the boundary within which project must be completed. These are non-negotiable factors that must be adhered to during the completion of the project. Limit in cost, time, scope and resources are examples of constraints.

1. **Gantt Charts:**

Gantt charts are generally used by Project Managers to show visually the rough estimation of timelines and the tasks/resources to plan and track the project efficiently. MPP can be used to create these charts. There will be start and end date against tasks/resources in rows and time (week/month) in columns.

1. **Dos and Don’ts of BA:**

**Don’ts:** Never resist the change and say ‘No’ to the stakeholders, don’t assume the requirements and anything in GUI, don’t accept anything by ‘default’, never try to give solutions straight away during requirement gathering

**Dos:** Question the existence of existence to understand the roots of needs, meet client with plain mind with no assumptions, listen carefully when client explain their problem without any interruption, try to extract the leads to solution from client itself.

1. **Challenging Areas of BA:**

Unavailability of stakeholders during important meetings, handling scope creep and change management- change requests of stakeholders, obtaining sign-off of documents, lack of domain knowledge and training, translating functional requirements to technical solution, handling the bugs during UAT and people management.

1. **Conflict Management- Thomas Kilmann technique:**

Conflict management is an important thing in project management. Identify the conflict, discuss the details, agree with the root cause, check for possible solutions and negotiate the solution to avoid future conflicts are the steps for conflict management. Thomas Killman technique is useful to categorize the stakeholders based on their assertiveness (x-axis) and co-operation (y-axis) in a plot as competing, avoiding, compromising, collaborating, accommodating stakeholders. This will help BA to take appropriate techniques to reach consensus with those stakeholders.

1. **V-model, an SDLC model:**

V-model is a type of SDLC model which is sequential in nature with phases one after the other. Each phase has specific deliverables and a review process. Left side of V represents the verification such as requirement gathering, analysis, design and detailed design. Right side of V represents validation such as Unit Testing, Component Testing, Integration Testing, System Integration Testing (SIT) before UAT. This model is best suited for smaller projects where requirements are very well understood.

1. **Iterative-RUP (Rational Unified Process) model:**

It is an iterative software development process created by Rational Software Corporation which was part of IBM. RUP is based on a set of building blocks or content elements such as roles (who), work products (what) and tasks (how). Each iteration has tasks which are categorized into 9 disciplines- 6 engineering (Business Modelling, Requirement, Analysis & Design, Implementation, test and Deployment) and 3 supporting disciplines (Configuration & Change Management, Project Management and Environment). There all are distributed in 4 project life cycles- Inception, Elaboration, Construction and Transition.

1. **Evolutionary- Spiral model:**

This model gives more emphases on risk analysis. There are 4 phases in this model- Planning, Risk Analysis, Engineering and Evolution. Software repeatedly passes through these phases in iterations or spirals. The baseline spiral starts from planning phase. Requirements are gathered during planning phase. In the risk analysis phase, a process is undertaken to identify the risks and alternate solutions and a prototype is produced at the end. Software is produced in the engineering phase. Customers are allowed to evaluate the output of the project till date in the evaluation phase before it enters into the next spiral. Angular component of the spiral represents progress and radius represents cost. This is best suited for large and mission critical projects where software is produced early.

1. **OOA- Object Oriented Approach:**

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1. **Implementation of OOA:**

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1. **Relationships in OOA:**