SPM

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Assignment- 4, 5, 6, 7, 8

1) What is Risk? List category of Risk and how evalute risk.

Ans ↳ Risk is uncertain events associated with future events which have probability of occurrence but it may or may not occur and if occurs it brings loss to the project.

- Various kinds of Risks in software Development:

1. Schedule Risk

↳ It refers to time related risks and project delivery related planning risks.

- Some reasons for schedule risks
  - ↳ Time is not estimated perfectly
  - ↳ Improper resource allocation
  - ↳ Tracking of resources like system, skill, staff etc.
  - ↳ Frequent project scope expansion
  - ↳ Failure in function identification and it's completion

2. Budget Risk

↳ It refers to the monetary risks mainly it occurs due to budget overruns.

- Some reasons for budget risks-
  - ↳ wrong/Improper budget estimation
  - ↳ Unexperted project scope expansion

↳ mismanagement in budget handling
↳ cost overruns
↳ Improper tracking of Budget.

3. Operational Risks

↳ It refers to the procedural risks means these are the risks which happen in day-to-day operational activities during development due to imprope process implementation or some external operational risks.

• Some reasons for operational risks.
↳ Insufficient training
↳ Less number of skilled people
↳ Improper managment of tasks

4. Technical Risks

↳ It refers to the functional risk or performance risk which means this technical risk mainly associated with functionally of product part of the software product.

• Some reasons for Technical risks
↳ Less use of future technologies
↳ Improper integration of modules

5. Programmatic Risks

↳ It refers to the external risk or other unavoidable risks

- Some reasons for Programmatic risks
  - ↳ Rapid development of market
  - ↳ loss of contracts due to any reason
  - ↳ changes in government rules/policy.

2) Write a short note on Software Configuration Management

Ans ↳ When we develop software, the product undergoes many changes in their maintenance phase : we need to handle these changes effectively.

↳ Several individuls works together to achieve these common gals. This individual produces several work product e.g., Intermediate version of module or test data used during debuggi

↳ The elements that comprise all info. produced as a part of the software process are collectively called a software configuration

- **Process involved in SCM**

1. Identification and Establishment
2. Version control
3. change control
4. configuration auditing
5. Reporting

- **SCM Tools**
  - ↳ CFEngine, Bcfg2 server, Vagrant, Smartfrog, etc.

- Why do we need configuration Managem

↳ Multiple people are working on softwa which is consistently updating.
↳ It may be a method where multiple version, branches, authors are involved in a software project, and the team is geographically distributed and works concurrently.
↳ It changes is user requirements, and policy, budget, schedules need to be acommodated.

- Importance of SCM

↳ It provides the tool to ensure that changes are being properly implemented.
↳ It has the capability of describing and storing the various constituent of software.

3. Write short note on Quality management System

Ans ↳ It ensures that the required level of quality is achieved by submitting improvements to the product developmen process.
↳ SQA aims to develop a culture within the team and it seen as everyone's responsibility.

↳ Software Quality management should be independent of project management to ensure independence of cost and schedule adherences.

↳ It directly affects the process quality and indirectly affects the product quality.

- **Activities of software Quality management.**

↳ **Quality Assurance** : QA aims at developing organizational procedures and standards for quality at organizational level.

↳ **Quality Planning** : select applicable procedures and standards for a particular project and modify as required to develop a quality plan.

↳ **Quality Control** : Ensure the best practices and standards are followed by the software development team to produce quality products.

4) Discuss Capability Maturity Model (CMM) in detail.

Ans ↳ CMM was developed by the **Software Engineering Institute (SEI)** at Carnegie Mellon University in **1987**.

↳ It is not a software process model. It is a framework that is used to analyze

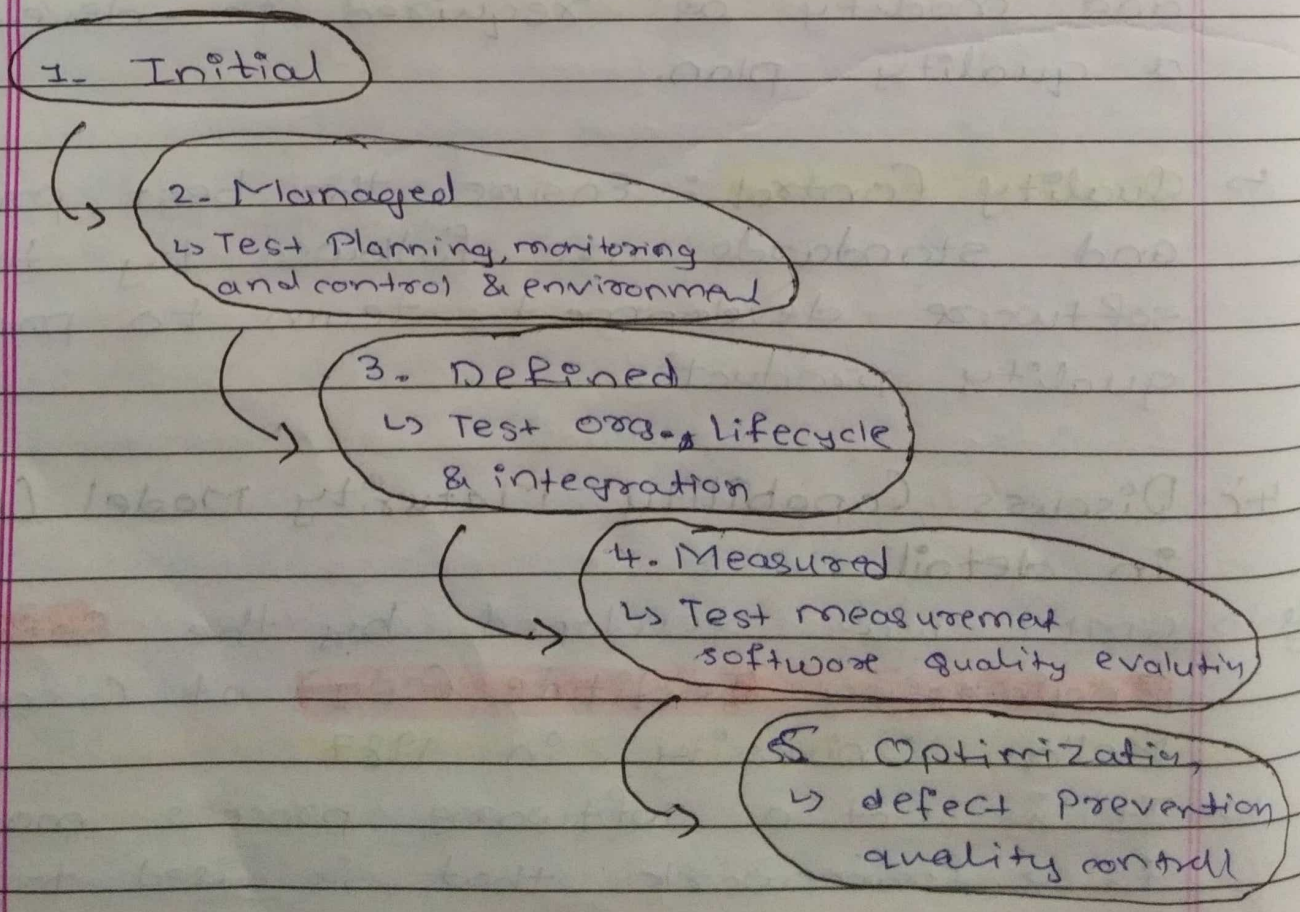
the approach and techniques followed by any organization to develop software products.

↳ It also provides guidelines to further enhance the maturity of the process used to develop those software products

↳ It is based on profound feedback and development practices adopted by the most successful organizations worldwide.

↳ This model described a strategy for software process improvement that should by followed by moving through 5 different levels.

- **Levels of CMM**



1. Initial
↳ The software process is characterized as inconsistent, and occasionally even chaotic
↳ Defined processes and standard practices that exist are abandoned during a crisis.

2. Repeatable
↳ This level of software Development organization has a basic and consistent project management processes to track cost, schedule & functionality.

3. Defined
↳ The software process for both management and engineering activities are documented, standardized, and integrated into a standard software process for the entire organization.

4. Managed
↳ Management can effectively control the software development effort using precise measurem

5. Optimizing
↳ The key characteristic of this level is focusing on continually improving process performance through both incremental and innovative technological improvements.