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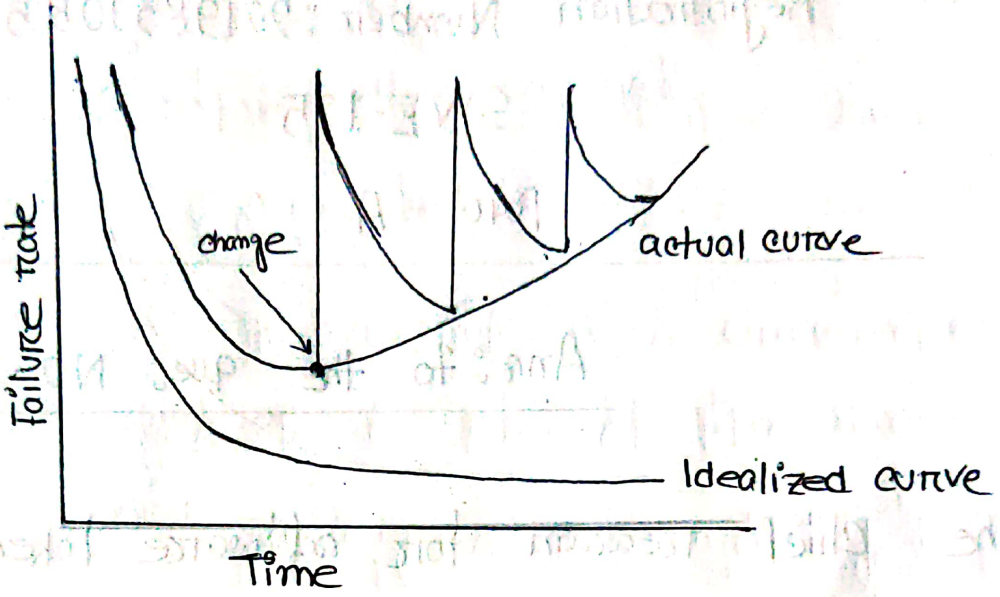
SWE-125

Part - A

Ans : to the que : NO-1

The chief reason for software takes so long to get finished is that many changes are made to a software product over its lifetime. As changes are made, defects may be inadvertently introduced to other portions of the software that interact with the portion that was changed. Beside that, software engineer must test and verified each phase of the software development process and each phase must be documented and completed before next phase can begin.

Software failure curve is drawn below:



During software lifetime, it will undergo changes. As changes are made, it is likely that errors will be introduced, causing the failure rate curve to spike as shown in the "Actual curve". Before the curve can return to the original steady-state failure rate, another change is requested, causing the curve to spike again. Slowly, the minimum failure rate level begins to rise - the software is deteriorating due to change.

Ans: to the que: NO-2

The tasks of software managers are -

1. Scope definition:

One of the chief responsibilities of a software project manager is to define the scope of the project. Software development won't be successful without a clear delineation of timelines, schedules, project styles to use, projections, available resources and overall goals.

2. Project coordination:

A project manager is expected to be able to coordinate company resources and that of third parties to ensure that the project is carried out perfectly.

3. Resource allocation:

To successfully manage resources, a manager has to be able to delegate resources efficiently

to maximize output while minimizing waste. Part of the responsibilities of a project manager in software development is expect resource allocation.

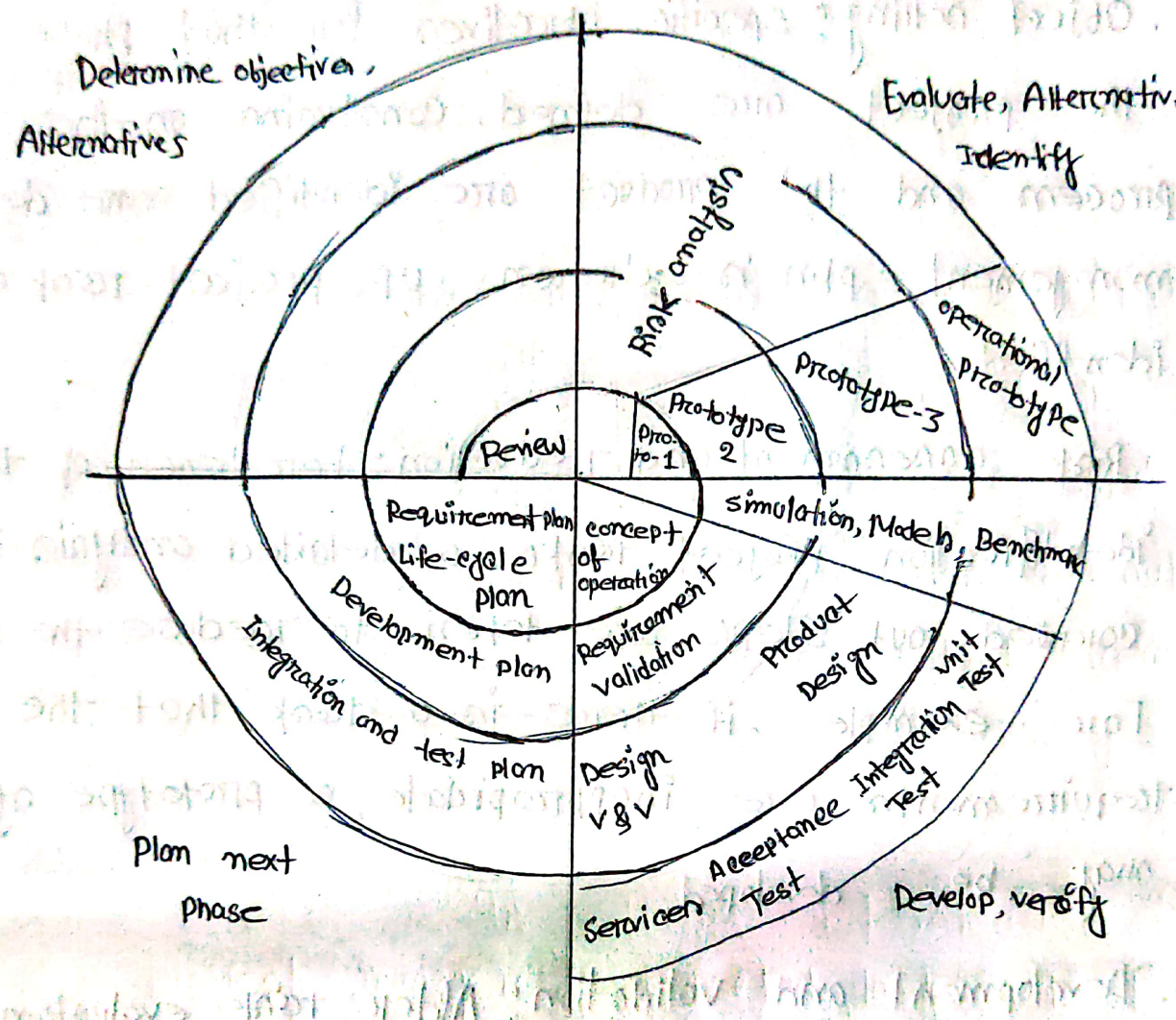
4. Change management:

Expectedly, there will be unforseen circumstances that make changes to a project plan necessary. It is a project manager's responsibility to spot those changes early and address them. This requires some level of foresight, and the ability to be flexible and adapt to necessary changes, even when ~~this~~ these changes are not the most convinient option.

5. Project execution:

~~And~~ A ~~project~~ manger is expected to be able to execute a project. It's the combined responsibilities of a software project manager, which is to ensure that a project comes to a successful close.

Ans: to the que: NO - 3



Each loop in the spiral representation a phase of the software process. Thus, the innermost loop might be concerned with system feasibility, the next loop with requirements definition, the next loop with system design, and so on.

Each loop in the spiral is split to four sectors:

1. Object setting: Specific objectives for that phase of the project are defined. Constraints on the process and the product are identified and detailed management plan is drawn up. Project risk are identified.

2. Risk assessment and reduction: For each of the identification project risks, a detailed analysis is carried out. Steps are taken to reduce the risk. For example, if there is a risk that the requirements are inappropriate, a prototype system may be developed.

3. Development and validation: After risk evaluation, a development model for the system is chosen. For example, throwaway prototyping may be the best development approach if user interface risks are dominant. If safety risks are the main consideration, development based on formal transformation a may be the most appropriate process and so on

4. Planning: The project is reviewed and a decision made whether to continue with a further loop of the spiral. If it is decided to continue, plans are drawn up for the next phase of the project.