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Subject :- SPM.

①

Q1] Answer the following questions (Any three).

a] What is Software Project Management?  
Why is it important?

Answer :-

[•] Software Project Management is are techniques and methods to ensure the successful completion of a project.

[•] Software Project Management is important because sometimes, the project includes lots of task and co-ordination has to be done between people, so it becomes vital to have a software project management practice in place which works.

[•] It is important to ensure :

[+] Completion of a project on time.

[+] Completion of a project within budget.

[+] Completion of a project with quality.

[+] Completion of a project with less or no errors.

[+] Thus, to ensure that the project is being completed as expected, SPM methods and practices are implemented, to co-ordinate task and employees, engineers, effectively, respectively.

(Q6) What are some ways of categorising software projects?

Answer:-

[•] Some ways of categorising Software projects are:-

[+] Complexity of the project, can be used to categorise the software project.

[+] Time required to complete the project can be used to categorise the software project.

[+] Budget and Budget limits can be used to categorise the software project.

[+] The threshold of employees it has can be used to categorise the software project.

[+] Thus, these were some of the ways to categorise Software project by

[+] Budget

[+] Time to complete.

[+] Complexity.

[+] People it needs to complete the project, etc.

respectively, in short.

[Q] What is programme management and how is it different from project management?

Answer:

[•] Programme Management :

[+] Programme Management is co-ordination of multiple projects towards a single goal, in brief, respectively.

[•] Project Management :

[+] Project Management is co-ordination of ~~a task~~ the tasks of a single software project, only, respectively, in brief.

[•] Difference among them are :-

[+]<sup>Table</sup> Programme Management uses co-ordinates and manages bunch of software projects at a time, towards a goal.

[+] Project Management focuses on the completion of a single task software project only.

[+] Programme Management focuses on a goal.

[+] Project Management focuses on the goal of the quality completion of an individual project.

(•) Thus, there were some <sup>the</sup> differences with their definition in brief, respectively.

(Q2) Answer the following questions. (Any three).

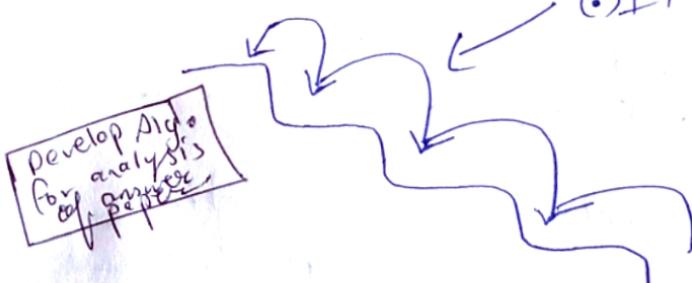
Q2, Q3, Q5.

Q6] What is Waterfall model? Explain its phases and limitations?

Answer:-

- [•] Waterfall model is a plan driven, strict and rudimentary model.
- [•] It needs a expert at the beginning to plan for the project, strictly.
- [•] It is ~~com~~ named Waterfall method, because it does as the name suggests.
- [•] It takes the suggestions of one methods, and takes it to another method.

c) It is built like this.



- [•] Past repositories of errors with codes, are used in the next process of planned waterfall project, respectively.
- [•] Thus, Waterfall Method in brief is:-
  - [+] Planned.
  - [+] Rudimentary.
  - [+] Adverse to change.
  - [+] Once started cannot be iterated.
  - [+] Time and budget bound, etc., respectively.

(•) limitations of Waterfall Methods are :-

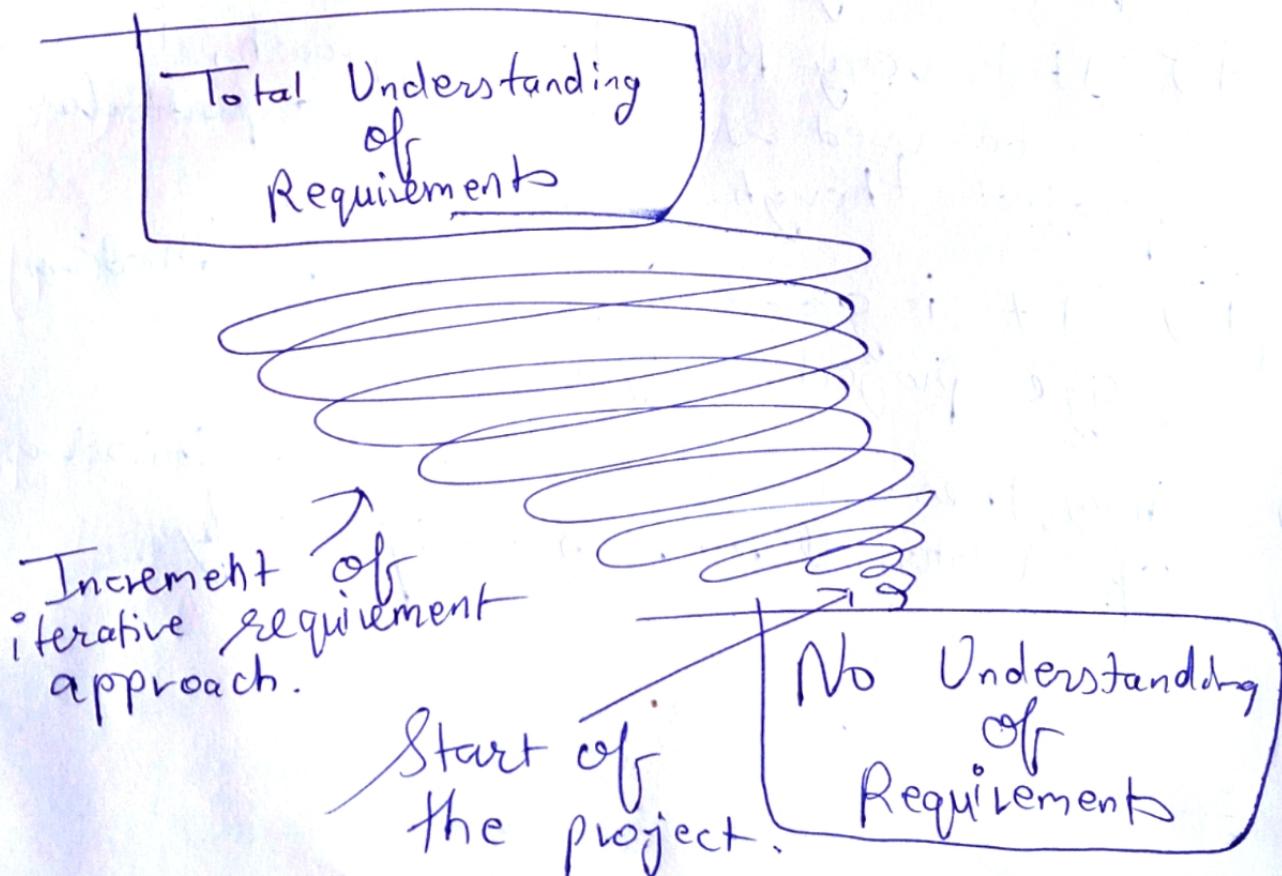
- [+] It cannot be iterated.
- [+] Once started, new features cannot be added.
- [+] Strictly time bound.
- [+] No flexibility.
- [+] Need a expert of the project at the beginning.
- [+] Requires it programmers to work mechanically, not creatively.
- [+] It is very Rudimentary Approach, it can be used sometimes for a particular project though.
- [+] It is good for small and Medium size projects only.

(•) Thus, these were some of the limitations, of Waterfall Methods, respectively -

Qc] What is Spiral model? Explain its phases and limitations?

Answer:-

- [.] Spiral model is an iterative approach to Software project management.
- [.] It is based on iterative updation of requirements, of a certain project, respectively.
- [.] The Diagram of Spiral model looks like this.



Spiral Model dig:-]

P.T.O

(+) Advantages of the Spiral Model are:-

- [+] It is updated iteratively, i.e. its requirements are updated iteratively.
- [+] Its requirements are updated as we the project progresses further.
- [+] It is mostly used when the requirements of the end-customer is not clear.
- [+] The requirements slowly - slowly gain a clear perspective of clarity.
- [+] It keeps updated with the changing time.
- [+] It needs a project expert throughout the project.
- [+] It is a good approach from small to large size projects.
- [+] It uses prototype methods like:-
  - E) One Time prototype
  - E) To final prototype
  - E) Combining to final Prototype, etc..

To iterate the requirements from the end-users.

T.P.T.

Q) Disadvantages of Using Spiral model is :-

- [+] It Time cannot be estimated properly.
- [+] It can lead to project failure, the constant updates of iterative requirements.
- [+] It can go over the budget.
- [+] The project can fail miserably.
- [+] It can have a lot of errors due to constant iteration.
- [+] Issues with testing, if not properly co-ordinated.
- [+] The project may not be finished ever.
- [o] Thus, these were some of the Disadvantages of Spiral Model, respectively.

[Q] What is Extreme Programming (XP)?  
Explain its principles and benefits?

Answer :-

- [.] Extreme Programming is a iterative Approach to Software building and Management.
- [.] It is used for Small to medium to Big Scale projects.
- [.] It is used when the Requirements are properly cleared from the end-user to the developers.
- [.] Principles of (XP) Extreme Programming are:-
  - [+] It is based on iterative completion of project, and its knowing of its requirements, respectively.
  - [+] It includes Pair Programming where it includes group of two developers, one as a driver and another as an navigator.
    - [+] One writes codes
    - Another reviews, suggests and corrects the lot code respectively.
  - [+] This, it uses pair programming.
  - [+] Its requirements get clear and clear as the project progresses further, if it is not known or is very clear at the beginning of the project.

[+] It requires the guidance of an expert throughout to complete the projects respectively, and to co-ordinate effectively and manage them effectively respectively.

[.] Benefits of (XP) Xtreme Programming :-

[+] It takes care properly, what the end-user wants.

[+] It is a time independent development requirement development approach, means it gets updated with time, do not become a legacy.

[+] It is less prone to not provide satisfaction to a customer.

[+] It takes care of all the requirements of end-users.

[+] It is useful when the client/organisation i.e end-user is not clear about what he specifically wants.

[.] Thus, these were some of the Requirements of Xtreme Programming.

Q3] Answer the following questions. (Any three).

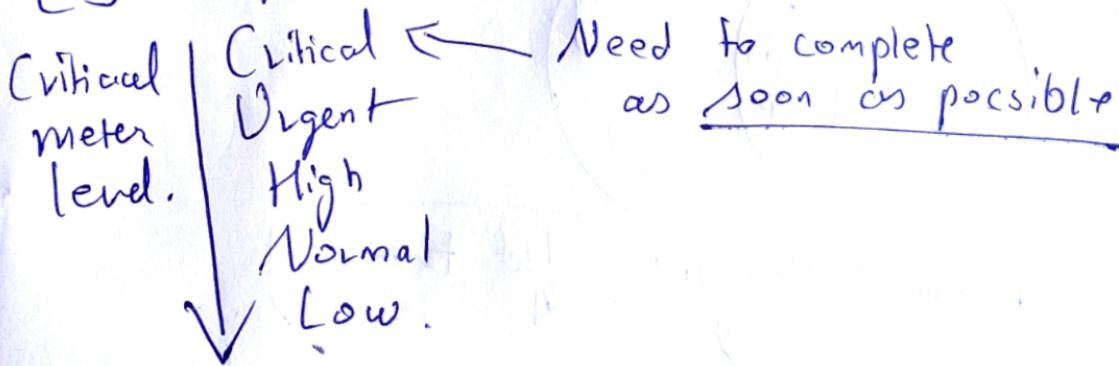
(a, b, c, e)

Qa] Explain the concepts of sequencing and scheduling activities in software project management?

Answer:-

[.] Some tasks are to be done based on the priority of the tasks in a list.

[.] Priorities are known as :-



[.] In a project, there are lots of tasks on hand, some needs to be finished earlier than some tasks, because late in doing so may break the programs, as a whole.

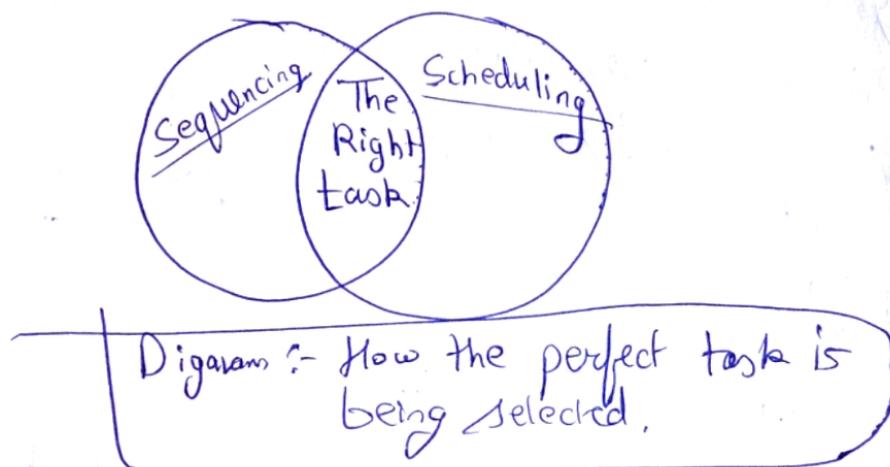
[.] So techniques like Sequencing and Scheduling is used.

[.] Sequencing is arrangements of tasks based on their priorities level as given above.

(e) Scheduling is some tasks are to be completed in a specific time period or on a given time period or only.

(f) Like Linux Administrators use Crontab very extensively for scheduling of tasks.

(g) Thus, let's understand them with a diagram, respectively.



(h) So, sequencing with scheduling defines, which tasks should be completed, first, in order that the program should not break, respectively.

(i) Thus, this was sequencing and scheduling in brief, respectively.

[Q] What is Risk Management? Explain its importance in software project management?

Answer:-

[•] Risk Management is the prediction and analysis of various risk factors, knowing them, and thus mitigating them, respectively.

[•] It is managing Risk to benefit ratio.

[•] Various techniques are used for risk management they are,

[+] ROI (Return on Investment)  
Analysis.

[+] IRR (Internal Rate of Return) Analysis.

[+] Benefit to Risk Ratio (BRR) Analysis.

[•] There are some ways to analyse risks as per to reward ratio, from which is also known as Risk to reward ratio.

[•] On the output of using these analysis, Risk mitigation strategies are designed, respectively -



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c) Risk Management and its importance in Software project management are:-

- (+) It is used so that the project is completed, avoiding the multiple risks of failures.
- (+) It is used to, if not completely end but to mitigate the risk as much as possible.
- (+) It is important for a particular given project, to make sure the project doesn't fail, as it finished without any over-budget or time or failure issues.
- (+) Thus, to ensure the safety the safe delivery of a project, Risk Management and mitigation techniques are used, effectively, respectively.

Qe] What is resource allocation in Software project management? Why is it important?

Answer :

Know how checking are done

- [.] To complete a task or a project, bunch of or lists of resources are used.
- [.] Resources are finite.
- [.] As they are finite, they should be used as effectively as possible to ensure its resource allocation, the maximum possible output, of a particular project, respectively.
- [.] Resource allocation means to use the resources as effectively as possible for a particular given project, as they are finite in nature.
- [.] It is important for the following reasons:-
  - [+] To maximize output in a given limited resource.
  - [+] To ensure not to go over-budget.
  - [+] To ensure even if the resources are limited, they are managed effectively.
- [.] Thus, there was resource allocation in software project management, respectively and thus its importance,

Q4

Answer the following questions (Any three). :-

a)

What is monitoring and control in software project management? Why is it important?

Answer :-

- [•] Monitoring refers to the active lookout of something to ensure a particular goal.
- [•] In software project management, it refers to monitoring the completion of tasks by developers, with some criteria like:-
  - (+) Should be completed before deadline or on time.
  - (+) Should be made effectively given the amount of time, with quality.
  - (+) Ensures that developer is not wasting time, and is doing something to finish the project as a whole on time.
- (-) Thus, after monitoring different control techniques are used based on the requirement, to ensure the completion and proper management of the project, respectively.

(Qd) What is Software configuration management and how is it used in Software project management?

Answer:-

- [•] Based on the requirements, certain Software configurations are decided.
- [•] Configurations are nothing but software features, in layman's term.
- [•] So, these was Software configuration management, in short.
- [•] It is used in Software project management, by ensuring that the most critical features are implemented and taken care off first, then, based on priority levels, respectively.
- [•] It is a very important technique in Software project management.
- [•] Thus, these was Software configuration management, in brief, respectively.

Q5) Any three :-      Improve on writing good handwriting.

b, c.  
~~1, 2, 3~~

Learn to minimize the jargon, for that study is important to accurately and precisely write without jargon, they are needed only when not properly studied.

Q6] What is co-ordination in Software project management?  
Explain its importance and challenge(s)?

Answer:-

- [e] Co-ordination of developers in project is critical.
- [e] Co-ordination of developers is critical so, their works can be brought together, and be aligned, respectively.
- [e] Co-ordination among developers, investors, client and ~~end-users~~, end-users is important to ensure, that everybody is on the same page.
- [e] To increase the effectiveness of the project.
- [e] It's quality.
- [e] To minimize its completion time or it should be done ~~on~~ on time, respectively.

P.T.O

[.] Importance of co-ordination in SPM is :-

- [+] To ensure completion of a project before deadline.
- [+] To ensure everybody is on the same page.
- [+] To ensure everybody's work align and match, to avoid merger issues of the project.
- [+] To increase the quality of the project.
- [+] To ensure and increase effectiveness of the project.
- [+] To brainstorm new ideas and methods.
- [+] Without co-ordination a project cannot survive, that much importance co-ordination plays in SPM, respectively.

[E] Some challenges are:-

- [+] People not responding on time.
- [+] Different people are not as serious to finish the project.
- [+] ~~Devices to ensure~~ Lack of technology to ensure co-ordination like what happened during Covid lockdown.
- [+] People not taking their work seriously.
- [+] Thus, these are some of the challenges in SPM, respectively.

(Qc) What is software quality . and why it is important in SPM?

Answer:-

[.] Software quality means a Software, which is :-

- [+] Was created as expected.
- [+] Does have no or very least amount of errors.
- [+] Does break while functioning.
- [+] Functions smoothly.
- [+] Satisfies the intended requirement of the end-user.

[•] Importance of quality in software in context of SPM is :-

- [+] Stakeholder or investor invests money, so they expect a quality Software which have no or least amount of errors and does not break, respectively.
- [+] It ensures the product functions, as it was expected to.
- [+] Thus, this was what is meant by Software quality and why it is important in S.P.M, respectively.