9525 TE COMPS: B

SE Assignment 1

Ans - 1 a) Recognizing the software requirements is a crucial step in the software engineering process, as it sets the foundation for the entire development lifecycle & significantly impacts the success of a project.

b) It helps in ensuring clarity of project scope, customer satisfaction effective communication, risk mitigation, resource allocation, testing & validation etc.

c) Implementation & managing the large size of software, programmer requires a specific method modularize the tasks so that size of software can't harm the software quality.

d) Recognizing requirements allows projects' manager to allocate resources more effectively, leading to better planning, minimizing by addressing the risks erlier.

e) Traceability ensures that each component of the software is linked back to specific requirements, aiding in quality assurance, regulatory compliance & understanding the rationale behind design & implementation decisions.

f) Recognizing software requirements is pivotal in ensuring that a softwa project processes smoothly, meets user expectations, avoids costly rework & gives high-quality results.

g) It serves as the foundation upon which all subsequent software development activities are built.

Ans - 2]

i) Waterfall Model:

a) Sequential & Linear approach
b) Each phase must be completed before next begins.
c) Emphasises comprehensive documentation.
d) Limited flexibility to accomodate changes

ii) Agile method

a) Iterative & incremental approach
b) Emphasises collaborativeness, adaptability & customer feedback.
c) Welcomes changes in requirements even late in project.
d) Eg: scrum, kanban, extreme programming.

iii) Incremental model

a) divides software into modules or components
b) each module is developed & tested separately
c) allows for every delivery of partial functionality

Ans - 3] a) The CMM model has been problematic at times:

b) By applying multiple models that are not integrated within & across an organisation.

c) The CMM integration project was formed to sort out the problems of using multiple models for software development process

d) CMM integration consists of computer programs

e) It has 3 groups:

CMMI for development
CMMI for service
CMMI for acquisition

Ans -

4] Prescriptive Process Model	Evolutionary Process Model
i> It can accomodate changing requirement	Improvement is requirement.
ii> It is more popular	It is less popular
iii> It is linear	It is non-linear
iv> The complexity of error increases because of the nature of model.	The complexity of error is low, the package enables user to detect error earlier in the process.
v> Eg: Waterfall, Incremental	Scrum, Spiral, RAD

Ans - 5] a) Incremental model: project can be divided into smaller functional increments. Implementation and testing can be done along.

b) Waterfall model: requirements are stable, changes are minimal, making it possible to execute the project in a linear sequence

c) Agile model: when flexibility & adaptibility are crutial & the project can be divided into smaller increments with frequent iterations.

Ans - 6] Waterfall v/s Agile model:

a) Progress Tracking
i) waterfall measures progress based on completed phases.
ii) agile measure progress within iterations using burn-down charts.

b) Flexibility:
waterfall is less adaptable
agile is more adaptable

c) Planning
waterfall focuses on comprehensive upfront planning
agile emphesises adaptive planning & flexibility

d) Feedback
waterfall has limited feedback
agile promotes regular feedback.

7] a) Development speed marks
b) waterfall → slower development
c) agile → faster & varied development

8)

Features	Waterfall	Incremental	Prototyping	Spiral
Req. spec	well understood	not well understood	not well understood	well understood
understanding requirements	well understood	not well understood	not well understood	well understood
reusable comp.	no	yes	yes	yes
risk analysis	beginning	no analysis	no analysis	yes
user involve	beginning	intermediate	high	high
time	long	short	short	depends on product
flexibility	rigid	less	high	high
expertise	rigid	high	medium	high
cost control	yes	yes	no	yes