

QUESTION BANK

(Software Engineering)

Q.1 Define Software Engineering.

Ans. Software Engineering is defined as the application of systematic, disciplined, quantified approach to the development, operations, and maintenance of software.

Q.2 List out the elements in Computer-Based System?

Ans. Elements in Computer-Based System are:

- Software
- Hardware
- People
- Database
- Documentation
- Procedures.

Q.3 What are the factors to be considered in the System Model Construction?

Ans. Factors to be considered in the System Model Construction are:

- Assumption
- Simplification
- Limitation
- Constraints
- Preferences

Q.4 What does a System Engineering Model accomplish?

Ans. System Engineering Model accomplishes the following:

- Define Processes that serve needs of view
- Represent behavior of process and assumption
- Explicitly define Exogenous and Endogenous Input
- Represent all Linkages that enable engineer to better understand view.

Q.5 Define Framework.

Ans. Framework is the Code Skeleton that can be fleshed out with specific classes or functionality and is designed to address a specific problem at hand.

Q.6 What are the important roles of Conventional Component within the Software Architecture?

Ans. The important roles of Conventional component within the Software Architecture are:

- **Control Component:** That coordinates invocation of all other problem domain.
- **Problem Domain Component:** That implements Complete or Partial function required by customer.
- **Infrastructure Component:** That is responsible for functions that support processing required in problem domain.

Q.7 Differentiate Software Engineering methods, tools and procedures.

Ans. Methods: Broad array of tasks like project planning cost estimation etc.

Tools: Automated or semi automated support for methods.

Procedures: Holds the methods and tools together. It enables the timely development of computer software.

Q.8 Who is called as the Stakeholder?

Ans. Stakeholder is anyone in the organization who has a direct business interest in the system or product to be built.

Q.9 Write about Real Time Systems.

Ans. It provides specified amount of computation with in fixed time intervals. RTS sense and control external devices, respond to external events and share processing time between tasks.

Q.10 Define Distributed system.

Ans. It consists of a collection of nearly autonomous processors that communicate to achieve a coherent computing system.

Q.11 What are the characteristics of the software?

Ans. Characteristics of the software are:

- Software is engineered, not manufactured.
- Software does not wear out.
- Most software is custom built rather than being assembled from components.

Q.12 What are the various categories of software?

Ans. The various categories of software are:

- System software Application.
- Software Engineering / Scientific.
- Software Embedded software.
- Web Applications.
- Artificial Intelligence software.

Q.13 What are the challenges in software?

Ans. The challenges in software are:

- Copying with legacy systems.
- Heterogeneity challenge.
- Delivery times challenge.

Q.14 Define Software process.

Ans. Software process is defined as the structured set of activities that are required to develop the software system.

Q.15 What are the fundamental activities of a software process?

Ans. The fundamental activities of a software process are:

- Specification
- Design and Implementation
- Validation

- Evolution

Q.16 What are the umbrella activities of a software process?

Ans. The umbrella activities of a software process are:

- Software project tracking and control.
- Risk Management.
- Software Quality Assurance.
- Formal Technical Reviews.
- Software Configuration Management.
- Work product preparation and production.
- Reusability management, Measurement.

Q.17 List the activities during project Initiation.

Ans. Important activities during project initiation phase:

- Management team building.
- Enables the team members to understand one another.
- Minimize the impact of cultural and language barriers.
- Scope and high level work division agreements.
- Management reporting and escalating procedures.
- Involvement of infra structure / support groups.
- Team formation.

- Project kick off meeting is attended by formally all concerned so that everyone has a common understanding of what is expected.

Q.18 What is work breakdown structure?

Ans. Work breakdown structure is the decomposition of the project into smaller and more manageable parts with each part satisfying the following criteria-

- Each WBS unit has a clear outcome.
- The outcome has a direct relationship to achieve the overall project goal.
- Each point has single point of accountability.

Q.19 What are the issues that get discussed during project closure?

Ans. The issues that get discussed during project closure are:

- What were the goals that we set out to achieve?
- How effective were the in process metrics?
- What were the root causes for under-achievement or over achievement?
- Was our estimation effort correct?
- What were the factors in the environment that would like to change?
- What did we gain from the system or environment?

- Was our estimation of the hardware correct?

Q.20 Give any two activities of project initiation.

Ans. Management team building and Team formation.

Q.21. What are the external dependencies in project planning?

Ans. Staffing, Training, Acquisition and Commissioning of new hardware, Availability of modules, Travel.

Q.22. What are internal milestones?

Ans. They are the measurable and quantifiable attributes of progress. They are the intermediate points in the project which ensure that we are in the right track. They are under the control of project manager.

Q.23. What is the role of the project board?

Ans. The overall responsibility for ensuring satisfaction progress on a project is the role of the project board.

Q.24. What is the role of project manager?

Ans. The project manager is responsible for day to day administration of the project.

Q.25. What is closed system?

Ans. Closed systems are those that do not interact with the environment.

Q.26. What is embedded system?

Ans. A system that is a part of a large system whose primary purpose is non computational.

Q.27. What is a Process Framework?

Ans. Process Framework establishes foundation for a complete software process by identifying a small number of framework activities that are applicable for all software projects regardless of their size and complexity.

Q.28 What are the Generic Framework Activities?

Ans. Generic Framework Activities are:

- Communication.
- Planning.
- Modeling.
- Construction.
- Deployment.

Q.29. Define Stakeholder.

Ans. Stakeholder is anyone who has stake in successful outcome of project such as:

- Business Managers,
- End-users,
- Software Engineer,
- Support People

Q.30. How the Process Model differ from one another?

Ans. Process Model differ from one another due to the following reasons:

- Based on flow of Activities.
- Interdependencies between Activities.
- Manner of Quality Assurance.
- Manner of Project Tracking.
- Team Organization and Roles.
- Work Products identify a requirement Identifier.

Q.31 Write out the reasons for the Failure of Water Fall Model?

Ans. Reasons for the Failure of Water Fall Model are :

- Real project rarely follow sequential Flow. Iterations are made in indirect manner.
- Difficult for customer to state all requirements explicitly.
- Customer needs more patients as working products reach only at deployment phase.

Q.32 What are the Drawbacks of RAD Model ?

Ans. Drawbacks of RAD Model are :

- Require sufficient number of Human Resources to create enough number of teams.

- Developers and Customers are not committed, system result in failure.
- Not Properly Modularized building component may Problematic.
- Not applicable when there is more possibility for Technical Risk.

Q.33 Define the term Scripts.

Ans. Scripts Specific Process Activities and other detailed work functions that are part of team process.

Q.34. Write the disadvantages of classic life cycle model.

Ans. Disadvantages of classic life cycle model are :

- I. Real projects rarely follow sequential flow. Iteration always occurs and creates problem.
- II. Difficult for the customer to state all requirements.
- III. Working version of the program is not available. So the customer must have patience.

Q.35. What do you mean by task set in spiral Model?

Ans. Each of the regions in the spiral model is populated by a set of work tasks called a task set that are adopted to the characteristics of the project to be undertaken.

Q.36 What is the main objective of Win-Win Spiral Model ?