1. **What are the characteristics of Software?**
    a. Software is created, not manufactured like hardware.
    b. It doesn't wear out but can deteriorate over time.

2. **What are the various categories of software?**
    a. System Software and Application Software.
    b. Also, Networking and Web Applications Software.

3. **What is SDLC?**
    a. SDLC stands for Software Development Life Cycle.
    b. It's a plan for building, maintaining, and improving software.

4. **What are the various phases of SDLC?**
    a. Planning, Analysis, Design, Implementation, Testing.
    b. Deployment, and Maintenance.

5. **What are different SDLC models available?**
    a. Waterfall, V-Model, Incremental, RAD, Iterative.
    b. Spiral, Prototype, and Agile.

6. **Which SDLC model is the best?**
    a. The one that fits the project's needs and situation best.
    b. It depends on project requirements, constraints, and goals.

7. **What is the waterfall method and what are its use cases?**
    a. It's a sequential approach to project management and development.
    b. Best used when requirements are clear and technology is well understood.

8. **What is Cohesion and Coupling?**
    a. Cohesion is how well elements in a module fit together.
    b. Coupling is how modules interact with each other.

9. **What activities come under the umbrella activities?**
    a. Software Project Tracking, Risk Management, Quality Assurance.
    b. Technical Reviews, Configuration Management, Reusability Management.

10. **What is Debugging?**
    a. Finding and fixing errors or bugs in software.
    b. It ensures the software functions correctly.

11. **What is the name of various CASE tools?**
    a. Requirement Analysis, Structure Analysis, Software Design, Code Generation.
    b. Test Case Generation, Document Production, Reverse Engineering.

12. **What is Black box testing?**
    a. It tests the functionality of software without knowing its internal code.
    b. Focuses on inputs and outputs without examining internal logic.

13. **What is White box testing?**
    a. Analyzes internal structure, code, and design of software.
    b. Also known as structural or glass-box testing.

14. **What is a Feasibility Study?**
    a. It assesses the practicality and benefits of proposed software projects.
    b. Determines if the project is technically and financially feasible.

15. **What is the Difference Between Quality Assurance and Quality Control?**
    a. Quality Assurance focuses on preventing defects.
    b. Quality Control involves identifying and fixing defects.

16. **What is the difference between Verification and Validation?**
    a. Verification ensures that the software meets specifications.
    b. Validation checks if the software meets user requirements.

17. **What is software re-engineering?**
    a. It involves modifying and reconfiguring an existing system.
    b. Aims to improve software efficiency and effectiveness.

18. **What is reverse engineering?**
    a. It involves recovering design and specifications from existing code.
    b. Helps understand and document legacy systems.

19. **What is SRS?**
    a. Software Requirement Specification defines software requirements.
    b. Describes what the software should do and how it should perform.

20. **Distinguish between Alpha and Beta testing.**
    a. Alpha testing is done by internal testers before release.
    b. Beta testing involves external users before final release.

21. **What are the elements to be considered in the System Model Construction?**
    a. Software type, user experience, development techniques, and risks.
    b. Also, team capabilities, development methods, and project size.

22. **What are CASE tools?**
    a. CASE stands for Computer-Aided Software Engineering.
    b. These tools automate and support various SDLC activities.

23. **What is the limitation of the RAD Model?**
    a. Requires sufficient human resources for large projects.
    b. Relies on developer and customer commitment.

24. **What is the disadvantage of the spiral model?**
    a. Can be costly and requires specific expertise for risk analysis.
    b. Success highly depends on the risk analysis phase.

25. **What is COCOMO model?**
    a. COCOMO stands for Constructive Cost Model.
    b. It estimates effort and cost based on project size.

26. **Define an estimation of software development effort for organic software in the basic COCOMO model?**
    a. Effort = 2.4(KLOC)^1.05 Person-Months.
    b. KLOC stands for Kilo Lines of Code.

27. **What is the Agile software development model?**
    a. It's an iterative approach focused on customer collaboration and flexibility.
    b. Emphasizes incremental delivery and rapid response to change.

28. **Which model can be selected if the user is involved in all the phases of SDLC?**
    a. RAD model can be selected if the user is involved in all phases.
    b. Rapid Application Development allows for user involvement throughout.

29. **What are software project estimation techniques available?**
    a. PERT, WBS, Delphi method, and Use Case Point.
    b. These techniques help estimate effort, time, and resources for projects.

30. **What is level-0 DFD?**
    a. Level-0 DFD is the highest abstraction level.
    b. It depicts the entire system as a single process.

31. **What is physical DFD?**
    a. Physical DFD focuses on how the system is implemented.
    b. It includes hardware, software, and external components.

32. **What is the black hole concept in DFD?**
    a. A processing step may have input flows but no output flows.
    b. In a black hole, data can only enter but not exit.

33. **Mention the formula to calculate the Cyclomatic complexity of a program?**
    a. Cyclomatic complexity = E - N + 2P.
    b. E is the number of edges, N is the number of nodes, and P is the number of predicates.

34. **How to find the size of a software product?**
    a. Size can be measured using Lines of Code, Function Points, or Entity Relationship Diagrams.
    b. These methods provide standardized measures of software functionality.

35. **Mentions some software analysis & design tools?**
    a. Data Flow Diagrams, Structured Charts, and Entity Relationship Diagrams.
    b. Also, Decision tables, Data Dictionary, and Structured English.

36. **What is the difference between Bug and Error?**
    a. A bug is a defect found before software release.
    b. An error is a deviation between expected and actual results.

37. **What is the difference between Risk and Uncertainty?**
    a. Risk can be measured and managed, uncertainty cannot.
    b. Risk involves known probabilities, uncertainty does not.

38. **What is a use case diagram?**
    a. A use case diagram visualizes interactions between actors and the system.
    b. It shows how users interact with the system to achieve goals.

39. **Which model is used to check software reliability?**
    a. Rayleigh model is used to check software reliability.
    b. It predicts defect rates based on statistical distributions.

40. **What is CMM?**
    a. CMM stands for Capability Maturity Model.
    b. It assesses and improves the maturity of an organization's software processes.

41. **Define adaptive maintenance?**
    a. Adaptive maintenance involves updating software for new platforms or interfaces.
    b. It ensures software remains compatible with evolving environments.

42. **In the context of modular software design, which of the combination is considered for cohesion and coupling?**
    a. High cohesion and low coupling are considered ideal.
    b. High cohesion ensures elements within a module belong together, while low coupling minimizes dependencies between modules.

43. **What is regression testing?**
    a. Regression testing ensures that recent changes to software haven't affected existing functionality.
    b. It re-runs previously executed test cases to verify that previously developed and tested software still performs correctly.

44. **Black box testing always focuses on which requirement of software?**
    a. Black box testing focuses on functional requirements of the software.
    b. It tests the software's functionality without examining its internal code structure.

45. **Which testing is used for fault simulation?**
    a. Mutation testing is used for fault simulation.
    b. It injects faults into the software to measure test adequacy.

46. **What is a function point?**
    a. Function point metrics measure the functionality of a software application.
    b. They provide a standardized method for quantifying the size and complexity of software.

47. **What is a baseline?**
    a. A baseline is a measurement that defines the completeness of a phase in software development.
    b. It marks the end of a phase and serves as a reference point for future activities.

48. **What is the cyclomatic complexity of a module that has 17 edges and 13 nodes?**
    a. Cyclomatic complexity = E - N + 2, where E = 17, N = 13.
    b. Cyclomatic complexity = 17 - 13 + 2 = 6.

49. **Why does software tend to deteriorate as it evolves?**
    a. Multiple change requests introduce errors in component interactions.
    b. Over time, the accumulation of changes can lead to increased complexity and decreased stability.

50. **Cohesion is an extension of which concept?**
    a. Cohesion is an extension of the information hiding concept.
    b. It refers to how well elements within a module fit together to perform a single task.

51. **What are the three essential components of a software project plan?**
    a. Team structure, Quality assurance plans, and Cost estimation.
    b. These components are crucial for managing and executing software projects effectively.

52. **The testing of software against SRS is known as...?**
    a. Acceptance testing is the testing of software against SRS.
    b. It ensures that the software meets the user's requirements and expectations.

53. **How to measure the complexity of software?**
    a. Complexity of software can be measured using methods like Lines of Code or Cyclomatic complexity.
    b. These metrics quantify the size and intricacy of software.

54. **Define the term WBS?**
    a. WBS stands for Work Breakdown Structure.
    b. It decomposes a project into smaller, manageable tasks for planning and execution.

55. **What is a regression testing primarily related to?**
    a. Regression testing is primarily related to Maintenance testing.
    b. It ensures that changes to the software haven't introduced new defects or affected existing functionality.