Introduction

1. Compare a Software with a program. Give suitable examples from both of them
2. Draw and explain the Idealized and actual curves for software failure rate vs time.
3. Draw and explain the evolution pattern of Technology
4. Define software quality. What quality assurance is needed for a system to manage the work schedule of nurses that respects all the constraints and regulations in force at a particular hospital? Justify your answer.
5. Compare the effort, time and cost requirements for exploratory style of software development vs using Software Engineering for the development.
6. Explain how abstraction and decomposition helps to overcome human cognitive limitations.
7. What is the objective of conducting feasibility study in software development life cycle?
8. What are the difference between generic software product development and custom software development?
9. List five quality attributes of a good software.
10. What are the symptoms of the present software crisis? What factors have contributed to the making of the present software crisis?
11. Distinguish between generic and customized software products. Which one would generate more revenue for a company? Give reasons.
12. What do you understand by the principles of abstraction and decomposition? Why these principles are considered important in software engineering?
13. What are the types of software? State their differences.
14. What is exploratory style of software development? Explain with diagram.
15. How is software different from other products?
16. What do you mean by software quality?
17. Why should we study software engineering?
18. What is generic software? Give examples.
19. Explain Layer technology in software engineering
20. What are Unit testing, Integration testing and System testing?
21. What is phase containment of errors?
22. What is the difference between function oriented and object oriented design?
23. What is the need of design phase in SDLC? Explain object oriented design principle.

SDLC

1. Which phases are called development phases in SDLC? Which development phase requires maximum time? Justify your answer.
2. Explain the importance of feasibility study phase of SDLC. What activity is performed during this phase?
3. Define unit testing, integration testing and system testing. Explain importance of each of them.
4. Why the maintenance phase consumes most of the time in SDLC? Describe different maintenance schemes.
5. Explain the limitations of classical water fall SDLC model.
6. Explain why the waterfall model of SDLC is not suitable for a Web Information System.
7. How is the V-Model of SDLC is different from classical water fall model? Describe the strength and weaknesses of V-Model.
8. Explain phases for a prototype model. In which case this model is suitable?

9. Compare Prototype model with incremental model of SDLC.
10. Define the most appropriate and least appropriates cases to use evolutionary model of SDLC.
11. Explain four quadrants of Spiral model SDLC.
12. Compare RAD Model Vs Agile model.
13. Compare Exploratory programming vs Agile Model.
14. Compare waterfall model vs Agile Model.
15. What is the similarity between incremental system integration and spiral model of design?
16. For which software development project is waterfall model not recommended?
17. List application problems related to waterfall development
18. What are the main activities of software design phase?
19. Explain the role of prototypes in the evolutionary development.
20. Explain the process of iterative software development. What are the disadvantages of iterative developments?
21. According to you which SDLC model is the best and why?
22. What is feasibility study? Name the different types of feasibility study.
23. Give an example of software product development for which iterative waterfall model is not suitable.
24. Which model may be suitable for "An object oriented software development" and why?
25. What are the advantages of first constructing a working prototype then the development of actual software product?
26. What do you understand by the term lifecycle model of software development? List out different SDLC models.
27. Which are the major phases of the waterfall model of software development? Which phase consumes the maximum effort for developing a typical software product?
28. What is prototype? What are the major advantages of first constructing a working prototype before developing the actual product?
29. What is meant by 99 percent complete syndrome? How can it be overcome?
30. What problems of iterative waterfall model have been overcome by V-model? Explain with diagrams.
31. Explain CASE tools?
32. Differentiate validation and verification?
33. Do the Comparison of Different Life Cycle Models?
34. Which is the most important feature of Spiral Model?
35. What is Prototype Model in SDLC? Where is this model used?

Requirements

1. What is requirements engineering? Explain the activities performed in requirement analysis and specification phase of SDLC.
2. Explain the need and use of a SRS document?
3. Who are the stake holders of SRS document?
4. Differentiate between functional and non-functional requirements.
5. Write down 3 functional requirements with I/O for a Bank ATM software?
6. Describe the importance of non-functional requirements.
7. Explain the non-functional requirements relevant to a critical system.
8. Describe the measurable metrics for non-functional requirements?
9. Define and explain software efficiency.

10. Write down some trigger questions for performance characteristics, quality issues and resource management issues.
11. Write a note on IEEE standard for SRS document.
12. What should be included in the Functional Requirements Document?
13. "Consider a system where, a heat sensor detects an intrusion and alerts the security company." What kind of a requirement the system is providing? What kind of a requirement the system is providing (Functional or Non-Functional)?
14. A set of requirements are given below. Identify the type of requirement (functional/Non-functional)
    a. Field 1 accepts numeric data entry.
    b. Field 2 only accepts dates before the current date.
    c. Screen 1 can print on-screen data to the printer.
15. Identify three functional requirements for the product, PATIENT MONITORING SYSTEM.
16. What is portability? Identify requirements related to portability for the product, PATIENT MONITORING SYSTEM.
17. Requirements analysis is critical to the success of a development project. Justify.
18. What are User Interface Requirements?
19. How many types of software requirements are there? Specify them?
20. How are the abstraction and decomposition principles used in developing a good requirement specification?
21. List five desirable characteristics of a good Software Requirements specification (SRS) document.
22. What is functional and non-functional requirements of a system? How to identify the functional requirements? Explain with suitable example.
23. What is a requirement? What are the types of requirements? Explain.
24. According to you, what should be the functional requirements for the mental health care-patient management system?
25. What should ideally be the software requirement specification (SRS) for developing an online shopping app?
26. How can you gather requirements?
27. What is SRS?
28. How do you find functional and non-functional requirements? Identify at least four non-functional requirements of the case study, Library Information System.
29. What is the difference between SRS and FRS? Who will create SRS?
30. What does SRS document contain? Prepare a SRS document for Online Grocery Shop.

Android Programming

1. Explain the android application architecture.
2. What are the core building blocks of androids?
3. Discuss the major attributes of the TextView.
4. Differentiate between an ImageView and an ImageButton.
5. Define Intents in android? What are the different types of Intents?
6. What are the different types of app components in android studio? Explain.
7. What is the difference between constraint layout and relative layout?
8. What are the ways to assign height and width of widgets in android studio? Explain their difference.
9. How does a broadcast receiver differ from an implicit intent?

10. What is an .apk extension in Android? What is its use?
11. What is meant by an Event? What are the ways by which an Event Listeners Registration can take place?
12. Write a small code snippet in Java to fetch data from EditText when a button is pressed and display it as Textview.
13. How to launch an activity in android?
14. Differentiate implicit and explicit intent with a suitable coding example.
15. Describe the significance of all folders in an android project.
16. State the importance of Manifest.xml file in android.
17. How to open the web browser in android? Write the Corresponding Java code.
18. What are the main components of android architecture? Explain briefly each component.
19. What is the importance of XML based Layout?
20. What is an Activity? Which method is implemented by all subclasses of an Activity?
21. What is android? What is the latest version of android?
22. What is the difference between File, Class, and Activity in android?
23. What is a Toast? Write its syntax.
24. Can Android applications only be programmed in Java?
25. Explain briefly the different Layouts in Android.
26. What Is the Google Android SDK?
27. What is the use of an activityCreator?
28. List out difference types of layout?
29. Explain the Application framework of Android.
30. Explain stages used to convert a java program to an apk?
31. Justify that ART is better than DVM.
32. Explain the functions of MainActivity.java and activity_main.xml, and AndroidManifest.xml. Mention the location of these files.
33. What are the components of Android runtime?
34. Draw the different layers of Android Architecture.
35. Explain the hierarchy used for Android UI.