1. *"Requirement engineering can confirm the quality of software"*, express your answer to verify the statement.

2. *"Requirement elicitation is related to discovering the requirements of a system. It involves a careful analysis of the organization, the application domain and business processes".*

3.   Based on the above statement of Requirement Elicitation:
   a. Describe the various phases involved in requirement elicitation process.
   b. Discuss the problems related to eliciting quality requirements and explain how these can be avoided.

4. ""Prototyping is a useful technique that can be used in most of software development process. It refers to an initial stage of a software release in which developmental evolution and product fixes may occur before a bigger release is initiated".
   a. Based on the above statement, identify the FIVE (5) types of prototyping techniques and give reason why they are being used by the software developer.

5. How data flow diagram is used to define any project and its flow control. Explain its different levels. Also resolve the relation of Context flow diagram and data flow diagram.

6. Define requirement negotiation and its stakeholders in brief. Use an example of virtual class management to explain above problem.

7. "Traceability refers to the completeness of the information about every step in a process chain. It also controls the information recorded and the dependencies between requirements".
   a. Based on this statement, explain the main concerns to traceability information. Evaluate the FOUR (4) types of traceability information according to Davis (1993).

8. "During development process, often, many new requirements emerge and this will eventually change the existing requirements. This scenario usually happens to all stages in system development process. There are many cases where almost up to 50% of all requirements will be modified during system development."
   a. Based on above statement, how process will manage the requirement. Write one practical example to strengthen you answer.

9. "Requirement analysis includes the needs or conditions to meet for a new or altered product to be developed, taking account of the possibly conflicting requirements of the various stakeholders, such as beneficiaries or users".
   a. **Based on the above statement**

     i.   Discuss the various characteristics needed in Requirement Analysis.

     ii.   Describe the deliverables of requirement analysis.

10. "A software requirements specification (SRS) is a document that captures complete description about how the system is expected to perform. It is usually signed off at the end of requirements engineering phase".

    a. Based on the above statement of SRS, discuss in detail the importance and attributes of Software Requirement Specification (SRS).

11. "A functional requirement describes what a software system should do, while non-functional requirements place constraints on how the system will do so."

    a. Elaborate functional and non functional requirement in detail including its internal requirements too.

12. "Change is inevitable in a software development process. But frequent changes in requirement increase the chance the project will fail".

    a. Based on above statement, define change control management and Describe control process with one practical example.

13. "Validation examines the dynamic behavior of software system". Explain this with an example.

14. Discuss the various quality improvement techniques in requirement engineering.

15. "A software requirements specification (SRS) is a document that captures complete description about how the system is expected to perform. It is usually signed off at the end of requirements engineering phase".

    a. Based on the above statement of SRS, discuss in detail the importance and attributes of Software Requirement Specification (SRS).

16. Define Traceability Matrix. Explain basic parameter to be included in Traceability matrix with one example.

17. "Walking on water and developing software from a specification are easy if both are frozen". Justify this statement.

18. "Requirements articulating user needs and corresponding to enterprise business processes are a key to successful implementation of information system development projects".

    a. Based on the above statement of Requirement Elicitation:

       i.   Describe the various techniques involved in requirement elicitation process.

ii. Discuss the problems related to eliciting quality requirements and explain how these can be avoided.

19. For better education quality in remote areas, "Education for All" INGO launches distance learning project. Through this project expert teacher from cities can give online classes to students of remote places through video conferencing. For this school of remote areas should be registered in the application. Also, students and teachers should be registered. Teacher can share notes and tutorials through the application. System should notify students/teachers about classes, notes and other details. Assume that you are technical lead of this project, answer the following questions.

    i. List out all functional, non-functional requirement and domain requirement of the systems.

    ii. Make project feasibility report.

    iii. Draw context and DFD level 1 diagram.

20. List out the process tasks needed in stakeholder identification? Discuss about how the needs of stakeholders can be understood and documented with Online Food Ordering System.

21. "It's Friday afternoon and Jon is flying to Sydney. He doesn't have enough money for a taxi to the airport, and he's running late. He goes to the local ATM and identifies himself. The machine welcome him and asked Jon to choose the language he prefer. Jon get angry because he doesn't have enough time!. However, he chosen the language. He specifies that he wants $100 from his savings account. He'd like the money in $20 notes so that he can give the taxi driver the correct change. He doesn't want a printed receipt, as he doesn't bother keeping track of transactions in this account .

    a. From the above statement, declare all the possible Scenarios.

22. "Requirement engineering is an iterative and ongoing process that involves eliciting, analyzing, documenting, validating, and managing the requirements of a software project."

    a. Based on the above statement, answer the below questions:

        i. Why is requirement engineering an important process in software development, and what are the risks of not properly executing this process?

        ii. What are some techniques that can be used to elicit requirements from stakeholders, and how can the accuracy and completeness of these requirements be validated?

23. What are some common techniques used to analyze requirements, and how can they be used to identify conflicting or ambiguous requirements?

24. How can you elicit functional and non-functional requirements from stakeholders, and what techniques can you use to ensure completeness and consistency?

25. Angeline Slim company sells beauty products. Rick is in charge of the stock inventory system. Rick needs to check each orders that are received from client and validate against the inventory file to see if the entire product exist. If a product does not exist, then it is added to the inventory file.

    a. Each order is then checked for availability. Orders that can be supplied immediately have the order details sent to the store, and the inventory file is documented accordingly. If the orders cannot be satisfied immediately then a requisition note is sent to the purchasing department. If the products are no longer supplied, the products are deleted from the inventory file. When the products are received from suppliers, a clerk will update the inventory file. There is a stock audit which results in an audit report to the manager.

        i. Identify the entity associated with this scenario. Construct the ERD.

        ii. Identify the data store associated with this scenario

        iii. Draw the DFD Diagram 0 for the Stock Inventory System

26. Requirements review is use to identify requirements that may not be consistent with product development constraints, where as Requirement validation is process that aims for identifying and resolving system problems. Answer the below question from above statement:

        i. Describe requirement validation.

        ii. What is a review checklist? Give a few examples of review checklist.

        iii. What are the activities of in testing a prototype?