Level of Testing:
- Testing is the process of exercising a program with the specific intent of finding errors prior to delivery to the end user.
- A Level of software testing is a process where every unit or component of a system is tested.

Proposal and Requirements Testing
- This type of testing covers testing of requirements specification that describes:
  - Project functionality
  - User interface
  - Software and hardware interfaces
  - Performance criteria
  - Implementation issues and risks

Stages in Requirements based Testing:

Defining Test Completion Criteria
Testing is completed only when all the functional and non-functional testing is complete.

Design Test Cases
A test case has five parameters namely the initial state or precondition.

Execute Tests
Execute the test cases against the system under test and document the results.

Verify Test Results
Verify if the expected and actual results.

Verify Test Coverage
Verify if the tests cover both functional and non-functional aspects.
Track and Manage defects

Any defects detected during the testing process go through the detect life cycle and are tracked to resolution.

Requirements Testing Process:

- Testing must be carried out in a timely manner.
- Testing process should add value to the software life cycle.
- Testing the system exhaustively is impossible hence the testing process needs to be efficient as well.
- Testing must provide the overall status of the project, hence it should be manageable.

Principles of Good Code Review:

- The first and foremost principle of a good review is that if you commit to review code, review it thoroughly.
- Aim to understand every changed line. Research things you don’t understand.
- Don’t assume the code works – build and test it yourself.
- Follow up on reviews. After suggesting changes, you should be prepared to review it again.

Design Testing:

- Design is not just what it looks and feel like, Design is how it works.
- Design depends on several key factors such as usability, utility, desirability, attractiveness etc.
- It is used to test on designs that are still in progress and before they’re linked together as a prototype.

Module Testing:

- It is a process of testing the individual subprograms, subroutines, classes, or procedure in a program.
- Module testing is largely a white box oriented.
- Module testing allows to implement parallelism into the testing process by giving the opportunity to test multiple modules simultaneously.

Big Bang Testing:

- Combining all the modules once and verifying the functionality after completion of individual module testing.
- In Big Bang Integration Testing, the individual modules are not integrated until all the modules are ready.
- It would be difficult to find out whether the defect arouse in interface or in module.

Sandwich Testing:

- Hybrid integration testing is also known as Sandwich integration testing.
- It is the combination of both Top-down and Bottom-up integrating testing.
- In Hybrid Integration Testing, we exploit the advantage of Top-down and Bottom-up approaches.
Features:

- It is viewed as three layer: viz – The Main Target layer, a layer above the target layer and a layer below the target layer.
- Testing is mainly focused for the middle level target layer and is selected on the basis of system characteristics and the structure of the code.

Validation Testing:

- Ensure that each function or performance characteristics conforms to its specification.
- Deviation must be negotiated with the customer to establish a means for resolving the errors.
- Configuration review or audit is used to ensure that all elements of the software configuration have been properly developed, cataloged, and documented to allow its support during its maintenance phase.

Sub System Testing

- **Command Processing System Testing**: Tests for errors in integration and functioning of system sub-components. Assures proper operation of input, Monitoring and Processing, Clock, Timers etc.
- **Cooking Control System**: Tests for errors in integration and functioning of cooking control function and oven control functions.
- **Output Processing System**: Tests for errors in integration of timer display, clock display and beeper signaling

Types of System Testing

![Types of System Testing Diagram](image_url)

NOTE: THESE POINTS ARE INDICATIVE AND NOT EXHAUSTIVE. PLEASE ELLABORATE THE ANSWERS WITH PROPER EXAMPLES WHEREVER APPLICABLE.

Write answers for following

1. What is proposal and requirement testing?
2. What are the Stages in Requirements based Testing.
3 Explain GUI and Compatibility testing
4 Explain Control FLOW Graph.
5 What are the Principles of Good Code Review?
6 Write a note on sandwich testing.