

## Short questions:

### 1. Downtime

The period when a system or service is unavailable, often measured in hours or minutes. It directly impacts user experience, productivity, and operational costs.

### 2. Reliability

The ability of a system to perform its intended function under stated conditions for a specified period, often expressed through metrics like Mean Time Between Failures (MTBF) and Mean Time to Repair (MTTR).

### 3. Product Measures

Quantitative metrics that assess various aspects of a product, such as size, complexity, functionality, and quality, including Lines of Code (LOC), Function Points (FP), and defect density.

### 4. Stages of Design

Typically includes:

- **Requirement Analysis:** Understanding what is needed.
- **Conceptual Design:** High-level system structure and functionality.
- **Detailed Design:** Specifics of components and interactions.
- **Prototyping and Validation:** Testing and refining designs.

### 5. Design Quality

Evaluated based on attributes like maintainability, usability, performance, scalability, and robustness. Tools like cyclomatic complexity help measure it.

### 6. Benefit of Code Coverage Measurement

Ensures that tests cover all code paths, improving software quality by identifying untested areas and reducing potential bugs.

### 7. Change Request Metrics

Tracks data like the number of change requests, their types, the time taken to address them, and the impact on the project, helping in assessing project adaptability and responsiveness.

### 8. Maintenance Quality Metrics

Measures aspects like defect resolution time, system downtime during updates, and user satisfaction post-maintenance, ensuring continuous improvement.

### 9. Identify the Benefits of Applying Metrics

Metrics provide insights into performance, quality, and productivity, enabling informed decision-making, risk management, and continuous improvement.

### 10. Failure Characteristics

Includes failure rate, impact severity, frequency, and recovery time, essential for improving reliability and reducing risk in systems.