MSBTE Software Engineering - Model Answer Cheat Sheet

UNIT 1 - Software Engineering Basics

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1) Characteristics of Software:

- Portability - Works across platforms.
- Functionality - Performs required tasks.
- Usability - Easy to use and understand.
- Reliability - Secure and dependable.

UNIT 2 - Requirement Engineering

Tasks of Requirement Engineering:

- Inception - Identify problem & objectives.
- Elicitation - Gather information from stakeholders.
- Elaboration - Analyze and refine gathered data.
- Negotiation - Resolve requirement conflicts.

UNIT 3 - Design Modeling

Fundamental Design Concepts:

- Abstraction - Hides unnecessary details.
- Information Hiding - Protects sensitive data.
- Modularity - Divides system into smaller modules.
- Aesthetics - Focuses on user-friendly interface.

UNIT 4 - Software Testing & QA

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Levels of Testing:

- Unit Testing - Test single module.
- Integration Testing - Test multiple modules.
- System Testing - Test entire software.
- Acceptance Testing - Final test by client.

Defect Life Cycle:

New -> Assigned -> Open -> Fixed -> Re-tested -> Verified -> Closed

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UNIT 5 - Test Management & Metrics

Test Planning Includes:

- Test objectives, scope, environment, schedule, entry/exit criteria.

Defect Life Cycle:

- New -> Assigned -> Open -> Fixed -> Re-tested -> Verified -> Closed

Manual vs Automation Testing:

- Manual - Human-driven, slow, error-prone.
- Automation - Tool-driven, fast, reliable.

Metrics:

- Product Metrics - Measure software attributes (LOC, performance, reliability).
- Process Metrics - Measure development/testing efficiency.
- DRE (Defect Removal Efficiency) = (Defects removed / Total defects) × 100