Sl. No.

B3.E5-R5 : SOFTWARE TESTING AND QUALITY ASSURANCE

NOTE :
1. **Answer question 1 and any FOUR from questions 2 to 7.**
2. **Parts of the same question should be answered together and in the same sequence.**

Total Time : 3 Hours   **Total Marks : 100**

1. (a) Discuss the different levels of testing done on software products.
   (b) What do you understand by Unit testing ? Discuss briefly.
   (c) Differentiate between Validation and Verification.
   (d) Describe briefly basis path testing strategy in software testing.
   (e) What do you understand by condition testing ? Discuss briefly.
   (f) Briefly discuss the black box testing strategy also called equivalence class partitioning.
   (g) What is the reason for conducting boundary value analysis for software applications ? Explain.   **(7x4)**

2. (a) Discuss the McCall's Quality model using its various factors. Discuss the CMMI model briefly.
   (b) Explain all the defects related to requirement specification, design, coding and testing Phases.   **(10+8)**

3. (a) Discuss and differentiate between statement coverage testing and branch coverage testing.
   (b) What do you understand by configuration management process ? What are the different activities present in Configuration Management ?   **(12+6)**

4. (a) Define test case, test criteria, test design, test strategy, test stub, test Driver. What are the contents of a test case design ?
   (b) What do you understand by coding standards ? Discuss different guidelines provided by coding standards.   **(10+8)**

5. (a) Discuss the need, process and importance of requirements validation.
   (b) Discuss the ISO 9000 Quality standard in software quality assurance.   **(10+8)**

6. (a) Explain the different software quality parameters and its metrics. Name some quality management models.
   (b) What is cyclamate complexity and how it is computed ? Discuss briefly the importance of white box testing.   **(10+8)**

7. (a) What is requirement traceability ? Why it is important ? How can one create a Requirement Traceability Matrix (RTM) ?
   (b) Briefly discuss the agile process of software development. Briefly explain the process of agile testing.   **(10+8)**

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