

## B4.3-R3: SOFTWARE TESTING AND QUALITY MANAGEMENT

### NOTE:

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

Time: 3 Hours

Total Marks: 100

1.
  - a) What is Software Testing Life Cycle?
  - b) What security risks must be addressed in a web application test plan?
  - c) What is equivalence partitioning technique? Is it a Black-Box or a White Box technique?
  - d) How can you design performance testing in a client-server environment?
  - e) How do you choose the most suitable test automation tool for your project?
  - f) What are the benefits of reliability testing?
  - g) What are the benefits of usability testing?

**(7x4)**
2. What are the common causes for bugs in software that can be handled by better software project management and quality practices? What are the five levels of CMM? From which levels, according to you, the good quality practices start prevailing, thereby reducing the causes of bugs?

**(18)**
3. List down all the components that are to be part of a test plan. How do you decide on when to STOP testing?

**(18)**
4. What is a Test case? What are the generic types of automated test tools available?

**(18)**
5. In the context of software testing explain the following briefly: -
  - a) Incremental integration testing
  - b) Sanity testing or smoke testing
  - c) Load testing
  - d) Context-driven testing
  - e) Alpha testing
  - f) Mutation testing

**(3x6)**
6. What are the various types of risks in software projects? What is traceability? What is the use of Requirements-Design Traceability Matrix?

**(18)**
7.
  - a) How can Quality Assurance processes be incorporated in a software organization? Illustrate any one process with example.
  - b) What are the differences between verification and validation processes?
  - c) What are the effects of software bugs on the system? How can bugs cause security vulnerability?

**(6+6+6)**