

ICT 5405- Project Management and Quality Assurance

Assignment 01

1. A critical server is expected to be operational 24 hours a day, 7 days a week. In a particular week, it experienced the following failures:
 - Failure 1: Lasted for 45 minutes.
 - Failure 2: Lasted for 1 hour and 15 minutes.
 - Failure 3: Lasted for 20 minutes.

Calculate the **MTBF** for the server for that week in hours.

2. A software system is required to be available during standard business hours, which are 40 hours per week. The service level agreement (SLA) states that the system's availability must be at least 98%. What is the maximum total downtime (in minutes) allowed per week to meet this availability target?

3. A software company wants to calculate the PUM for its latest product for the last quarter (3 months).

- Total problems reported by customers (both true defects and other issues): **1,250**
- Number of installed licenses at the beginning of the quarter: **400**
- Number of new licenses installed during the quarter: **200** (Assume these were active for the full period for simplicity)
- Calculation period: **3 months**

Calculate the **Problems per User-Month (PUM)**.

4. During the system testing phase of a project, the testing team identified and removed **350** defects. After the software was released to the client, an additional **50** defects were discovered by the users. Calculate the **Defect Removal Effectiveness (DRE)** of the development and testing process.

5. A maintenance team is tracking its performance in handling reported issues. In the month of June:
 - Number of new problems reported: **95**
 - Number of problems closed: **110**

Calculate the **Backlog Management Index (BMI)** for June. Based on the result, is the team reducing or increasing the backlog?