

**UNITED INTERNATIONAL UNIVERSITY (UIU)**

Dept. of Computer Science & Engineering

Trimester: Summer 2024

Course No: CSE 4495 Title: Software Quality Assurance and Testing

Section: A

**Time: 20 minutes Marks: 20**

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| **Name** |  | **ID** |  |

1. a) Define Security as a software quality attributes through CIA characteristics. Also explain how implementing authentication, non-repudiation and permission based access control can ensure CIA.

b) Briefly explain how minimizing response jitter can improve user experience. **[5+5=10]**

1. Imagine you are the lead developer of FreeSpace.Inc game studios. Your company wants to release a new mobile shooting game that will rival popular games like Free Fire, PUBGm etc. To achieve this your system needs to fulfil the following requirements-availability of at least 99.6%, a probability of failure on demand of less than 0.05, and a rate of fault occurrence of less than 4 failures per 36 hour work period. After the testing is done you receive the following report from the testing team – During 10 days of testing the system processed **18972** requests. Some of these requests ended in failure. Three types of failures were observed -  
   i. **26** times the system showed an user wrong information about enemy position.  
   ii. **27** times the game disconnected the user from a match.  
   iii. **32** times the whole system crashed, and servers needed to be restarted. Each restart took 5 minutes (Avg.) Now depending on this report measure the availability, POFOD and ROCOF of your system. Also decide whether your software is ready for release **[10]**