**APPENDIX I**

**T-Test**

1. **Statement of the Hypothesis**

**Null Hypothesis (Ho).** There is no significant difference between the existing and the proposed system in terms of security, efficiency and reliability.

**Alternative Hypothesis (Ha).** There is a significant difference between the existing and the proposed system in terms of accuracy, reliability, security, and usability.

1. **Criteria for Evaluation**

The following are the criteria utilized to evaluate the performance of both the existing and the proposed system.

* 1. Security
  2. Efficiency
  3. Reliability

1. **Computation of Weighted Mean**
2. **Existing System**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Criteria | Scores | | | | |
| 5 | 4 | 3 | 2 | 1 |
| Security | 0 | 0 | 5 | 12 | 2 |
| Efficiency | 1 | 0 | 5 | 9 | 4 |
| Reliability | 1 | 2 | 4 | 9 | 3 |

**Computation of the Mean**

Security = 5(0) + 4(0) + 3(5) + 2(12) + 1(2)

222

= 2.158

Efficiency = 5(1) + 4(0) + 3(5) + 2(9) + 1(4)

222

= 2.211

Reliability = 5(1) + 4(2) + 3(4) + 2(9) + 1(3)

222

= 2.421

1. **Proposed System**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Criteria | Scores | | | | |
| 5 | 4 | 3 | 2 | 1 |
| Security | 16 | 3 | 0 | 0 | 0 |
| Efficiency | 9 | 10 | 0 | 0 | 0 |
| Reliability | 17 | 2 | 0 | 0 | 0 |

**Computation of the Mean**

Security = 5(16) + 4(3) + 3(0) + 2(0) + 1(0)

222

= 4.842

Efficiency = 5(9) + 4(10) + 3(0) + 2(0) + 1(0)

222

= 4.474

Reliability = 5(17) + 4(2) + 3(0) + 2(0) + 1(0)

222

= 4.895

**Computation of Weighted Mean**

1. Existing System

= 2.158 + 2.211 + 2.421

3

= **2.263**

1. Proposed System

= 4.842 + 4.474 + 4.895

3

= **4.737**

**Computation of Variance**

1. Existing System

= 0.011 + 0.003 + 0.025

2

= 0.069

1. Proposed System

= 0.011 + 0.069 + 0.025

2

= 0.053

**Computation of t-computed (tc)**

\*tt value is based on the level of significance used.

1. **Decision Rule**
2. If tc > tt ; accept Ha, reject Ho
3. If tc < tt ; accept Ho, reject Ha
4. **Findings**

Since the t-computed (30.87) is greater than the t-tabulated (1.96), it could be justified that there is a significant difference between the existing and the proposed system in terms of security, efficiency and reliability.