



THE PAPUA NEW GUINEA UNIVERSITY OF TECHNOLOGY
DEPARTMENT OF ELECTRICAL AND COMMUNICATIONS
ENGINEERING

SECOND SEMESTER EXAMINATION (2021)

EE-531 - WIRELESS SECURITY

ME - COMMUNICATION ENGINEERING

TIME ALLOWED: 3 HOURS

INFORMATION FOR STUDENTS

1. You have **TEN (10) MINUTES** to read the paper.
You must not begin writing during this time.
2. **Answer all questions.**
3. All answers must be written in the **ANSWER BOOK** supplied.
4. **COMPLETE THE DETAILS REQUIRED ON THE FRONT COVER OF YOUR ANSWER BOOK – DO THIS NOW.**
5. Only drawing instruments and calculators are permitted on your desk.
Textbooks and notebooks are **NOT** permitted.
6. If you are found cheating in the Examination, the penalties specified by the University shall apply.
7. **TURN OFF** all Mobile Phone and place them on the floor under your seat before the start of Examination

QUESTION ONE:

[10 MARKS]

A. Explain the concept of Encryption and Decryption with appropriate Diagram?

[5 marks]

B. What are the Objectives of the Wireless Security ? [5 Marks]

QUESTION TWO:

[10 MARKS]

A. Present the scenario for Hash Functions, where authentication and confidentiality both are achieved ?

[5 marks]

B. Explain the working of SHA-512.

[5 Marks]

QUESTION THREE:

[10 MARKS]

A. Present the scenario for MAC where confidentiality fails and authentication is achieved ? [5 Marks]

B. Consider two prime numbers 7 and 11, by using RSA algorithm, Calculate the following:

a) Public key

b) Private key

c) Encryption process

d) decryption process

[5 Marks]

QUESTION FOUR:

[10 MARKS]

Explain the importance of wireless security in modern era communication ?