



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

SECOND SEMESTER EXAMINATION (2023)

EE323 MOBILE AND SATELLITE COMMUNICATIONS

THIRD YEAR (COMMUNICATIONS)

TIME ALLOWED: 2 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 and Total Marks is 40.**
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 architecture of 3G and 4G-LTE?

[5 marks]

B. Evaluate the minimum number of channel sets required for a cell having the radius of 5 meters and the frequency reuse distance is 12?

[5 Marks]

QUESTION TWO:

[10 MARKS]

A. Criticize how the Structure of a Cell in Mobile Communication impact the quality of the calls with the help of a diagram?

[5 marks]

B. Explain how the calls gets connected in Mobile Communication with the help of a diagram?

[5 marks]

QUESTION THREE:

[10 MARKS]

A. Explain the various types of Hands-off in Mobile Communication? [5 Marks]

B. Compare between Static and Dynamic channel allocation?

[5 Marks]

QUESTION FOUR:

[10 MARKS]

A. Differentiate between 1G, 2G, & 5G

[5 Marks]

B. Theorise how the Satellite works? Also mention the advantage and disadvantage of Satellites?

[5 Marks]