



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

**SECOND SEMESTER EXAMINATION (2022)**

**EE323 MOBILE AND SATELLITE COMMUNICATIONS**

**THIRD YEAR (COMMUNICATIONS)**

**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. Total of 40 marks.**
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?

[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 4G & 4G-LTE & 5G

[5 Marks]

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

[ 5 Marks]