



Faculty of Information Technology

Final Exam, 2022/2023(1)

Course Name: Mobile Communication (COSC 7321)

Instructor: NIZEYIMANA Pierre Celestin

Exam Duration: 2h00

Group : Evening

Date : ...../12/2022

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## **MOBILE COMMUNICATION / 40 marks**

1. Why a modem was needed when people were first trying to connect remote computers to talk to each other? How is the principle still applied today's mobile communication? / **5marks**
2. What is the major difference between 4G and the previous generations (1G,2G,3G)? / **5 marks**
3. To understand and analyze the movements of artificial satellites, one has to understand the movements of the earth itself. What is the speed of the earth? / **5 marks**
  - a. While revolving around the sun and how long is the journey.?
  - b. While rotating around its self and how long is the journey.?
4. Why is the cost of launching satellites very high? / **5 marks**
5. How is it possible for a satellite to keep orbiting the earth for more than 10 years without additional energy supply from earth to move it? / **5 marks**
6. What is the average altitude the following satellites operate at? / **5 marks**
  - a. LEO satellites
  - b. MEO satellites
  - c. GEO satellites
7. What is the meaning of geostationary orbit and why is it very important for satellite communication? / **5 marks**
8. Why voice services prefer to use LEO and MEO satellites instead of GEO satellites? / **5 marks**

**<<BEST OF LUCK>>**