



UNIVERSITY OF MINES AND TECHNOLOGY, TARKWA

FIRST SEMESTER EXAMINATIONS, NOV/DEC 2018

COURSE NO: GM 271

COURSE NAME: GLOBAL NAVIGATION SATELLITE SYTEM

CLASS: GM II

TIME: 3 HOURS

Name: _____ Index Number: _____

ANSWER ALL QUESTIONS

Q1.

- a) Define Global Navigation Satellite System (GNSS)? **(5 marks)**
- b) Explain absolute and relative GNSS positioning. **(5 marks)**
- c) Give three examples of relative GNSS positioning and their application areas. **(5 marks)**
- d) Mention the three segments of GNSS and state one purpose of each. **(5 marks)**

Q2.

- a) How does the Global Navigation Satellite System work? **(4 marks)**
- b) How does GNSS determine a Position? **(4 marks)**
- c) List and explain the service levels provided by GPS. **(4 marks)**
- d) Distinguish between Anti-Spoofing and Selective Availability. **(4 marks)**
- e) How can you ensure GPS data accuracy and integrity? **(4 marks)**

Q3.

- a) What is Augmentation of GNSS? List three (3) GNSS Augmentations. **(3 marks)**
- b) What is Wide Area Augmentation System? **(3 marks)**
- c) Briefly discuss the ionospheric delay bias in GPS. What options are available in accounting for it in data processing scheme? **(4 marks)**
- d) List five (5) common error sources and how to minimize them in GNSS measurement. **(5 marks)**
- e) Mention six (6) applications of GNSS. **(5 marks)**

Examiner: Ing Suru Dr Issaka Yakubu