



TECHNICAL UNIVERSITY OF MOMBASA

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Faculty of Engineering and Technology  
Department of Mechanical & Automotive Engineering  
UNIVERSITY EXAMINATION FOR:  
Diploma in Nautical Sciences  
ANS 2214 : Electronic Systems for Position Fixing and Navigation II  
SPECIAL/ SUPPLEMENTARY EXAMINATION  
SERIES: AUGUST 2019  
TIME: 2 HOURS  
DATE: Pick Date Aug 2019

**Instruction to Candidates:**

You should have the following for this examination

- *Student I.D. Card & Examination Pass*
- *Answer booklet*
- *Non-Programmable scientific calculator*

This paper consists of **FIVE** questions. Attempt any **THREE** questions.

Maximum marks for each part of a question are as shown.

**Do not write on the question paper.**

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**Question ONE**

- a. Explain the advantage of the receiver capable of operating both GLONASS and GPS (combined GPS/GLONASS receiver) **(10 marks)**
- b. Explain the limitation of the GLONASS system receiver. **(10 marks)**

**Question TWO**

Describe the frequencies of BEIDOU. **(20 marks)**

**Question THREE**

- a. Describe the intended level of accuracy of the GNSS system. **(10 marks)**
- b. Describe the principles of operation of the Global Navigation Satellite Systems. **(10 marks)**

**Question FOUR**

Describe factors affecting radar performance and accuracy. **(20 marks)**

**Question FIVE**

a. Explain the various errors of the GPS.

**(10 marks)**

b. State the advantages and limitations of GPS.

**(10 marks)**