

TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF ENGINEERING AND TECHNOLOGY DEPARTMENT OF MECHANICAL & AUTOMOTIVE ENGINEERING UNIVERSITY EXAMINATION FOR:

DIPLOMA IN NAUTICAL SCIENCE

ANS 2201 : ELECTRONIC NAVIGATION SYS & MARINE INSTRUMENTS END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2016

TIME: 2 HOURS

DATE: Pick Date Dec 2016

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, examination pass and student ID

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions. **Do not write on the question paper.**

Ouestion ONE

a) Define the following terms

(10 Marks)

- i. Navigation
- ii. C/A code
- iii. Loran C
- iv. Hyperbolic Navigation
- v. S/A

b) Discuss the effect of Selective Availability to GPS position accuracy

(10 Marks)

Question TWO

Discuss with appropriate illustrations the composition of the GPS, as a system

(20 Marks)

Question THREE

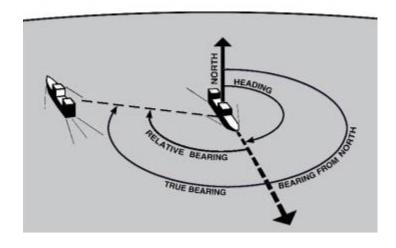
Discuss in details the following coordinate concepts

i.	Latitude (Lat.)	(5 Marks)
ii.	Difference of latitude (DLat.)	(5 Marks)
iii.	The middle or mid-latitude (Lm)	(5 Marks)
iv.	Great-circle distance	(5 Marks)

Question FOUR

Using the illustration below, discuss the concept of bearing and directions.





Question FIVE

Discuss in brief the following navigation

a) Dead reckoning (DR)	(5 marks)
b) Celestial navigation	(5marks)
c) Radar navigation.	(5 marks)
d) Satellite navigation	(5 marks)