



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL & AUTOMOTIVE ENGINEERING

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN NAUTICAL SCIENCE

ANS 2202 : CELESTIAL NAVIGATION I

END OF SEMESTER EXAMINATION

SERIES: AUGUST 2017

TIME: 2 HOURS

DATE: Pick Date Sep 2017

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 any **THREE** questions.

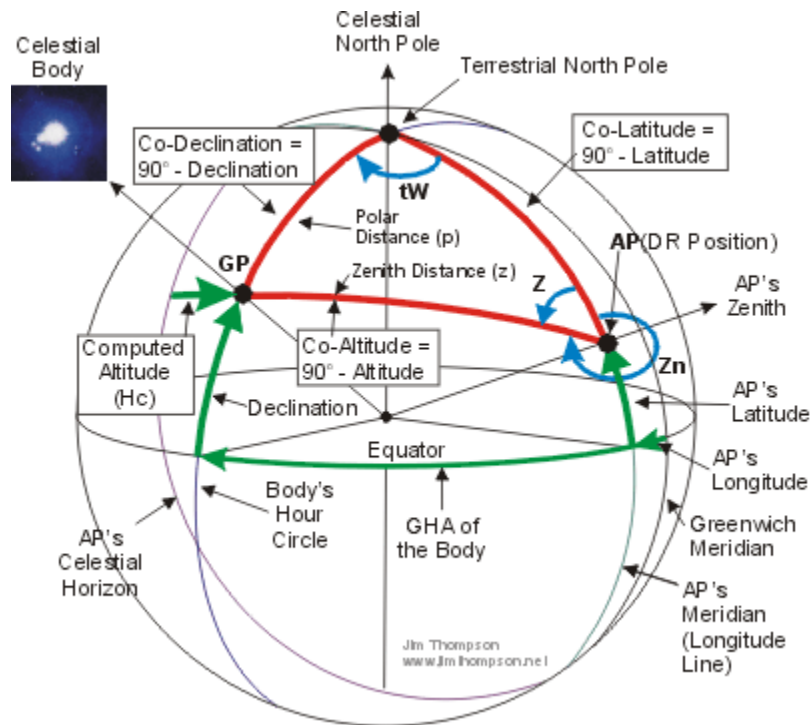
Do not write on the question paper.

Question ONE

- a) Define the following terms:
- i. North celestial pole (2 Marks)
 - ii. South celestial pole (2 Marks)
 - iii. Celestial equator: (2 Marks)
 - iv. Ecliptic (2 Marks)
 - v. Declination (2 Marks)
- b) Using an appropriate diagram, illustrate the terminologies above in **QUESTION ONE (a)** (10 Marks)

Question TWO

Using the diagram, discuss position fixing and spherical trigonometry of the position of the Celestial body to the observer. (20 Marks)



Question THREE

Using the illustration below discuss the horizon coordinate system as based on the observer's position (20 Marks)

