



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: 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 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)

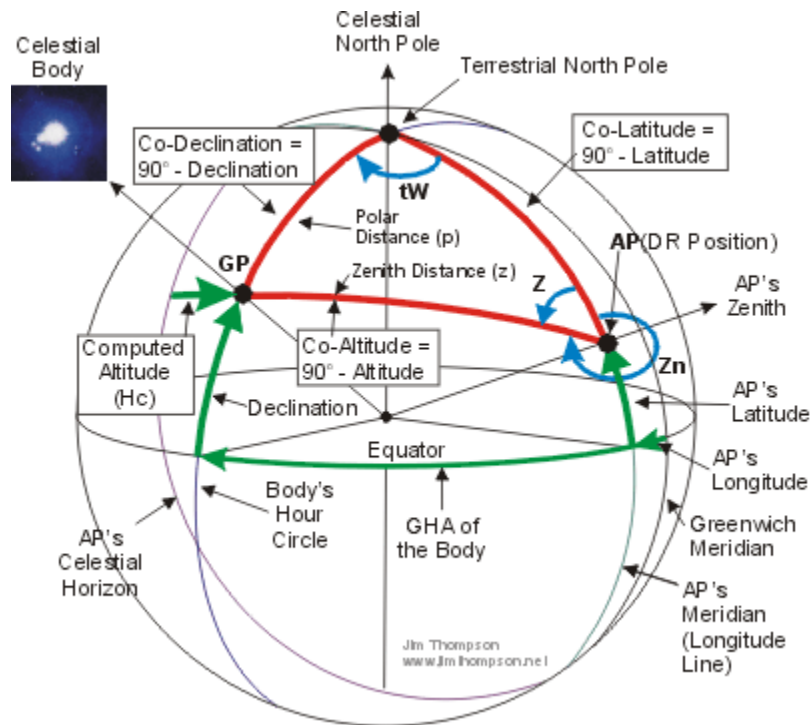
v. Declination

(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)**

