



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 question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

Question ONE

a) Define the following:

- i. Celestial body. **(2 Marks)**
- ii. Celestial Sphere **(2 Marks)**
- iii. Fix. **(2 Marks)**
- iv. Position Line **(2 Marks)**
- v. Actual position: **(2 Marks)**

b) With appropriate illustrations describe the Celestial Coordinate System **(10 Marks)**

Question TWO

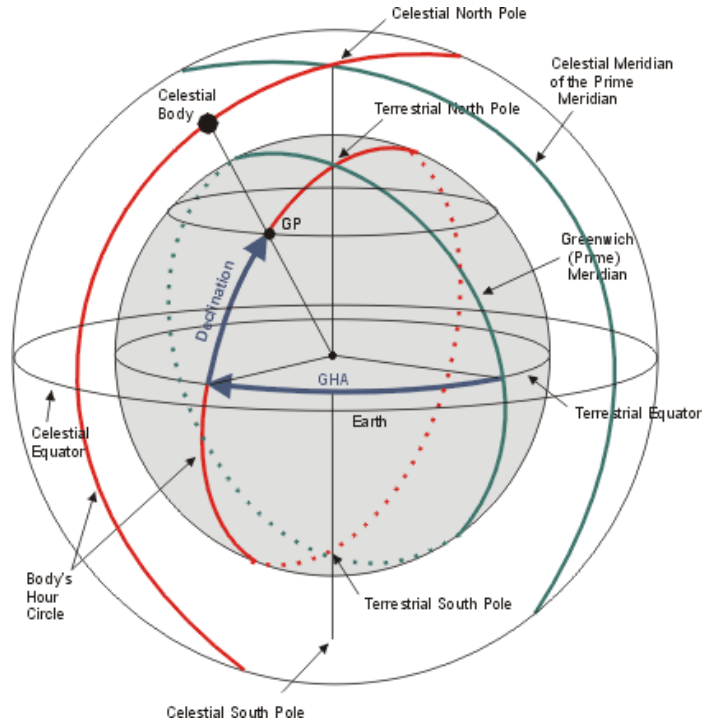
Using an appropriate diagram discuss the following: **(20 Marks)**

- a) Zenith
- b) Nadir
- c) Horizon

- d) Altitude
- e) Azimuth

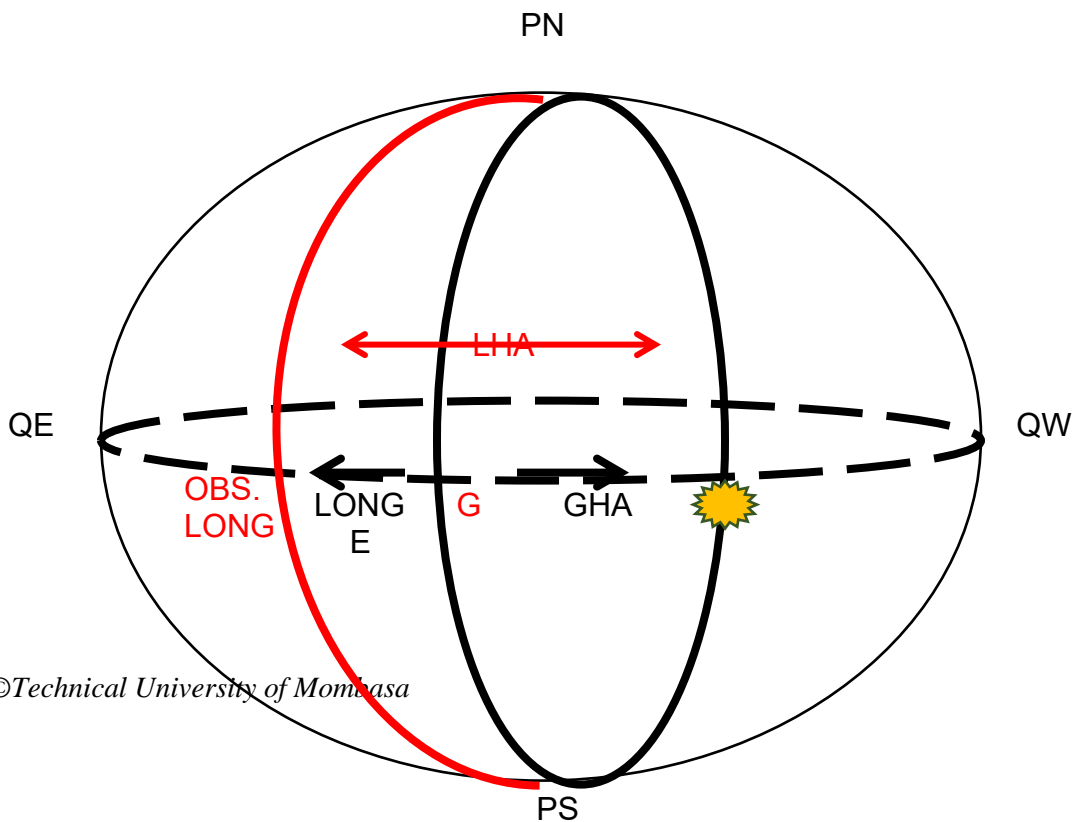
Question THREE

Using the diagram below and the assumed position of the Celestial Body, define and discuss the terminologies indicated. **(20 Marks)**



Question FOUR

Using the figure below describe the measurement of the **LHA E** and **W** **(20 Marks)**



Question FIVE

Discuss the 5 essential pieces of data for reducing a celestial sight

(20 Marks)