



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)**

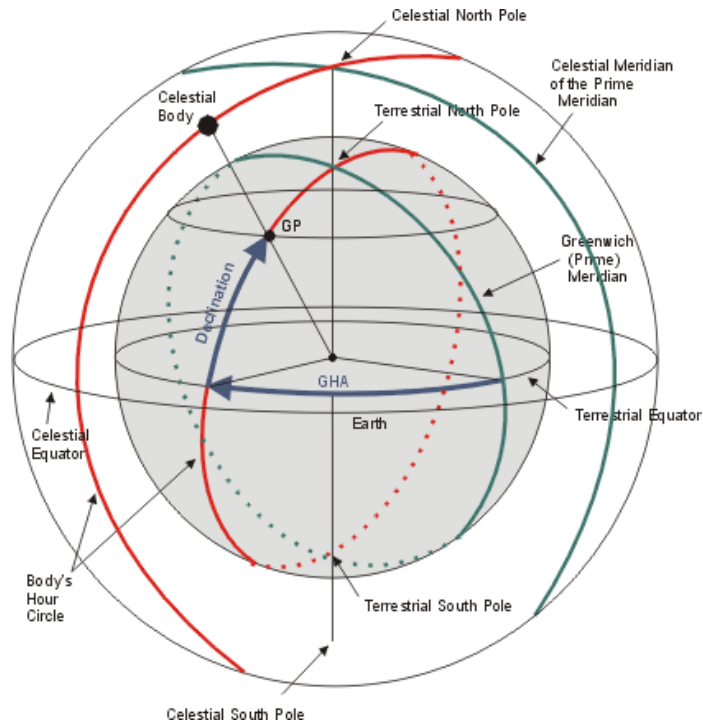
Question TWO

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

- a) Zenith
- b) Nadir
- c) Horizon
- d) Altitude
- e) Azimuth

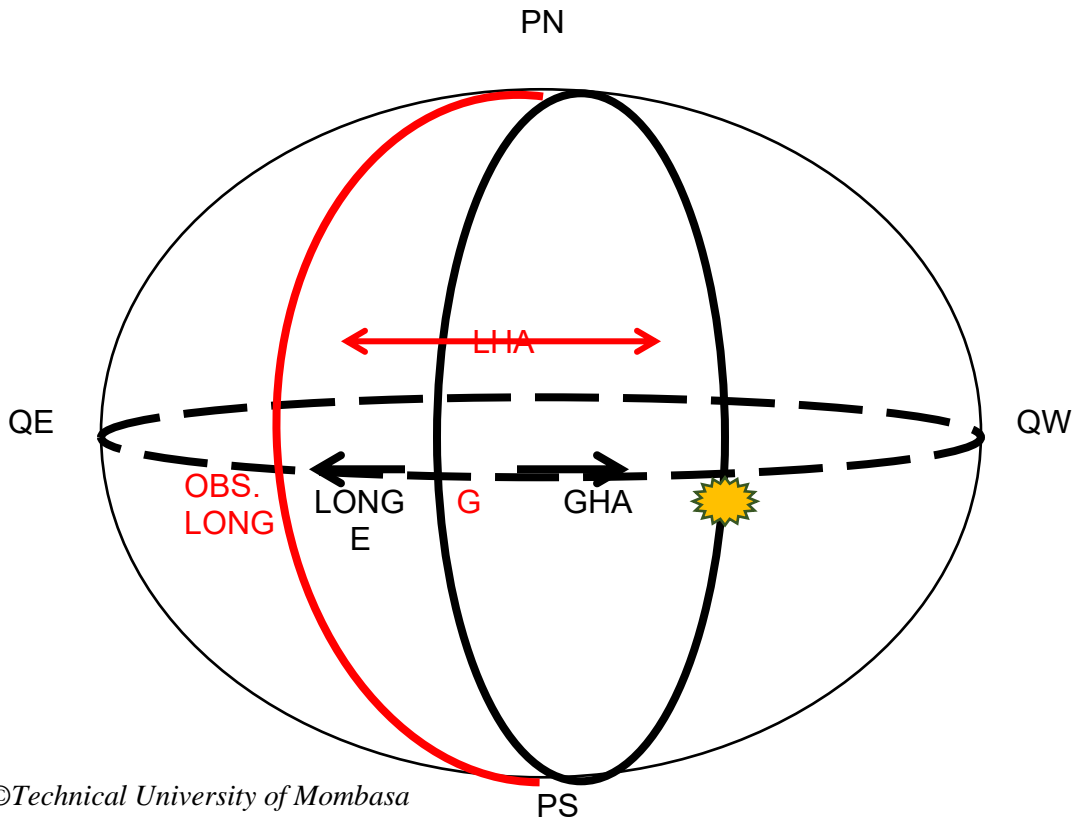
Question THREE

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)