



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF APPLIED AND HEALTH SCIENCES

DEPARTMENT OF PURE & APPLIED SCIENCES

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN NAUTICAL SCIENCE

ENE 2340: OCEAN NAVIGATION I

END OF SEMESTER EXAMINATION

SERIES: APRIL 2016

TIME: 2 HOURS

DATE: Pick Date May 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. Use the following words to complete the paragraph

Meteorological Offices , Radio-Room , Direction Finder, Route , Echo Sounder , Speed Log , Readings , Gyro-Compass , Autopilot , Course , Stars , Magnetic Compass, Piloting, Celestial Bodies, Gyroscopic Compass, Spherical Hyperbolas, North Pole, Seamanship, Dead Reckoning, Short Range, Conducting , Inertial Navigation

- i). Once clear of port and congested coastal waters, the captain of a modern liner sets his _____ and leaves the _____ to hold it.
 - ii). In _____, the ship is conducted without the use of celestial observations, while the ship is in sight of land.
 - iii). Navigation is the art _____ of a ship from one place to another.
 - iv). The calculation for determining the ship's position by using the courses steered and distances run is called _____.
 - v). The Sun, Moon, planets and the stars are _____.
- b. Define the following through representation in a diagram (10 Marks)

- i). Actual height
- ii). Charted Height
- iii). MHWS
- iv). Chart Datum
- v). Height of Tide

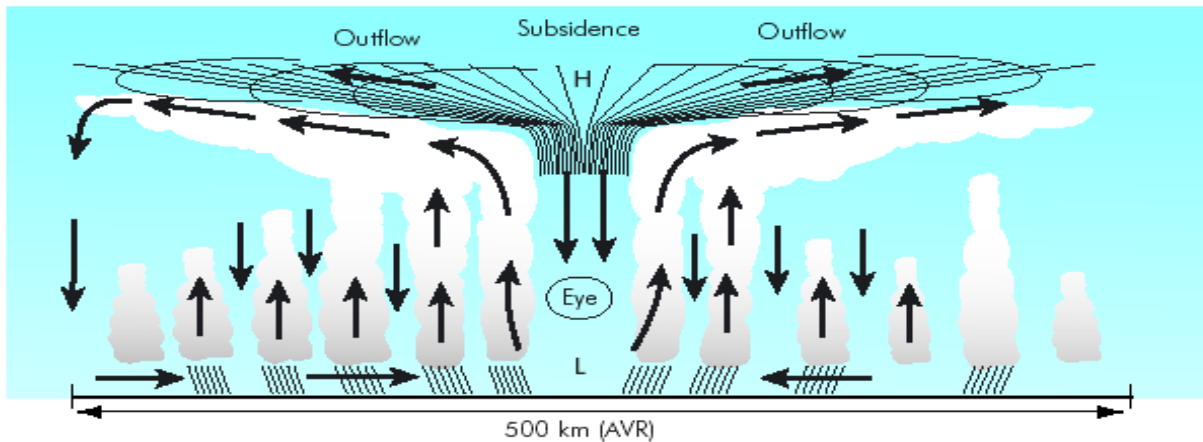
Question TWO

A ship sails due East from the following position ($25^{\circ} 00' N, 25^{\circ} 00' E$). Find:

- a. The distance run by the ship if the Longitude changed by 10° (10 Marks)
- b. The final Position of the Ship if the ship sailed further east for two hours with a navigational speed of 10 Knots (10 Marks)

Question THREE

Explain and discuss the illustrated phenomena of Revolving Storms



Question FOUR

A ship sailed from position A ($10^{\circ} 37' N, 089^{\circ} 56' E$) to a Final position B ($40^{\circ} 37' N, 055^{\circ} 22' E$). Calculate the Distance; Initial & Final Courses (20 Marks)

Question FIVE

A ship in position ($40^{\circ} 15' N, 18^{\circ} 10' W$) set sail at 0800Hrs on a true course of $132^{\circ} T$ at a speed of 15 Knots. At 0840 Hrs The ship altered course as follows:

Time	True Course
0840 Hrs	$246^{\circ} T$
0956 Hrs	$302^{\circ} T$
1032 Hrs	$010^{\circ} T$

1144 Hrs	090 ⁰ T
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Find the DR position at Noon (1200) (20 Marks)