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 any THREE questions.
Do not write on the question paper.

Question ONE

Find the time before noon where the Master of MV Tudor (whose draught is 6.2m) can pass over a shoal of HELGOLAND with a clearance of 1m. The charted Depth is 5.3m (20 Marks)

Question TWO

A ship sails due East from the following position (25^0 $00^{'}$ N, 25^0 $00^{'}$ E). Find:

a. The distance run by the ship if the Longitude changed by 10^0 (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)
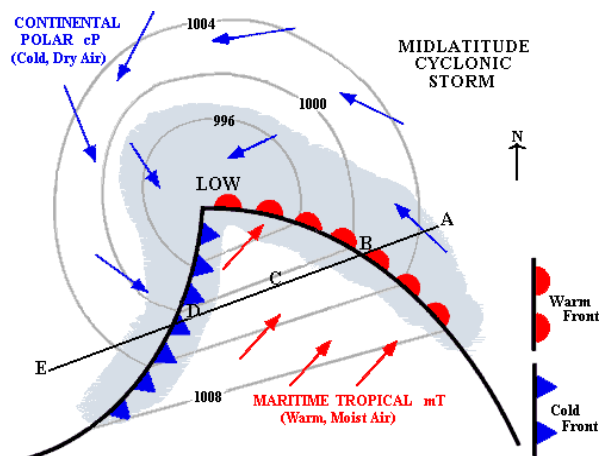
Question THREE

A lighthouse at Folkestone has a charted height of 70m. Find its actual height above sea level at 1142 GMT (20 Marks)

0448	0.9

0957	6.5
1716	1.0
2214	6.7

Question FOUR

a. Discuss the FOUR (4) conditions for a Tropical Cyclogenesis (8 Marks)
b. Using the diagram below, explain the formation of a Mid Latitude Cyclone (12 Marks)

Question FIVE

A ship in position (40^0 15′N, 18^0 10′W) set sail at 0800Hrs on a true course of 132^0T at a speed of 15 Knots. At 0840 Hrs The ship altered course as follows:

Time	True Course
0840 Hrs	246^0T
0956 Hrs	297^0G
1032 Hrs	010^0T
1144 Hrs	085^0G

a. Find the true Corse at 0956Hrs and 1144 Hrs if the GE was 5^0 L(10 Marks)
b. If the Variation was 3^0E and Deviation 5^0W find the Compass Course at 1144 Hrs (4 Marks)
c. At 1032Hrs, the Current was 3 Knots, 330^0, find the Course to Steer. (6 marks)