

Indian Maritime University
(A Central University, Govt of India)
B Sc (Nautical Science)
June 2018 End Semester Examinations
Semester-I
UG21T3106 - Terrestrial Navigation

Duration:3 Hrs

Max Marks:70 Marks

Date: 14.07.2018

Pass Marks:35 Marks

Note-Question no-1 is compulsory.

Answer any six out of the remaining eight questions.

Use of Norries Nautical Table,Nautical Almanac and Non-Programmable Scientific Calculator is permitted.

Outline of World Map to be Provided by the examination centre.

1).Define the following.

(5x2=10marks)

- a)Great circle
- b)D long
- c)Variation
- d)Deviation
- e)Nautical mile.

2) a) At the location of the centre of the compass rose,the variation was 6 deg 40 min W in 1992.The annual change is 8 min E.Find the variation in the year 2013?

b)Find the true course for a compass course 040 deg,Deviation 15 deg E,

Variation 10 deg W.

(5x2=10 marks)

3) a) Find the course and distance from Place A 04 deg 16 min S 177 deg 37 min W to Place B 02 deg 29 min N 179 deg 24 min E.

b) Find the position arrived after sailing 301 deg (T) for 1408 NM from starting position (P) 00 deg 04 min S 178 deg 20 min W. (5X2=10 marks)

4 a) Your ship sailed from (A) 24 deg 51 min S 179 deg 28 min E to (B) 24 deg 51 min S 170 deg 19 min W. Find the course and distance steamed.

b) Your ship in position 20 deg 11 min N 072 deg 52 min W sailed on a course of 032 deg (T) for 238 NM. Find the position arrived.

(5x2=10 marks)

5) At 0430 hours, a ship in DR position 13 deg 55 min N, 109 deg 29 min W

Steaming at a speed of 11 knots, steered the following courses

Course 309 deg (T) for 01 hour 10 min.

Course 352 deg (T) for 02 hours 20 min

Course 268 deg (T) for 02 hours 05 min

Course 180 deg (T) for 01 hour 25 min

Course 110 deg (T) for 00 hour 30 min

Current was setting 060 deg (T) at 1.5 knots throughout. Find the ship's

Estimated position (EP) at 1200.

(10 marks)

- 6) Find the distance between parallels of latitude 1 deg apart, to construct the graticule for Mercator chart of area 20 deg S to 25 deg S and 070 deg E to 075 deg E, to a scale of 1 deg of longitude is equal to 3 cm. Give the extreme dimensions of the chart. (10 marks)
- 7) Find the initial and final courses and the distance by a Great Circle track from (A) 24 deg 00min N 74 deg 15 min W to (B) 46 deg 00 min N 53 deg 45 min W. (10 marks)
- 8) Find the initial course, final course and the distance along the composite Track from (A) 51deg 20 min N 010 deg 00min E to (B) 52 deg 00min N 55 deg 00 min E, having a limiting latitude of 53 deg N. (10 marks)
- 9) Draw a sketch of Map of India and mark all Major Ports. (10 marks)