

INDIAN MARITIME UNIVERSITY

Time Bound Assignment September/October 2020

B Sc (NS) Arrear Examinations

Terrestrial Navigation

UG21T3106

Date: 29/09/2020

Maximum Marks: 70

Time: 3 Hrs

Pass Marks: 35

Note: Question No. 1 is compulsory.

Answer any 6 questions from remaining 8 questions (each of 10 marks).

Scientific Calculator is permitted if required.

-
1. Define the following:- **(2x5=10 marks)**
- a) Compass Error
 - b) Meridional Parts
 - c) Departure.
 - d) Geographic latitude of a place.
 - e) Vertex of a Great Circle Track.
2. Find the Initial Course, Final Course & Great circle track distance from
39° 00'S / 020° 00'W To 40°00'S / 142° 00'E. **(10 marks)**
3. A vessel sailed from Lat. 27° 12'N, Long. 178° 42'E having engine speed 15 knots throughout. She steered 063°(T) for 10 hrs. Course was then altered to 090°(T) & this course was maintained for 8 hrs. Thereafter she steered 220° (T) for another 6hrs. Find the position arrived if she experienced a current setting 324°(T) at 2.5 knots throughout. **(10 marks)**

4. a) Explain why length of a nautical mile in polar region is larger than length of a nautical mile in equatorial region **(2x5=10 marks)**
 b) Define True Course & True bearing with a suitable sketch.
- 5 a) Define the following by a single diagram(by CN, TN, MN) **(2x5=10 marks)**
 Deviation : 15°E Variation: 10.5°W Course = 120°(C) & Also find the Compass error & the True Course steered.
 b) Fill up the blanks

True Course	Variation	Magnetic Course	Deviation	Compass Course	Error
097°	5°E	-	3°W	-	-
-	7°W	-	6°E	168°	-

6. a) A vessel steered 228°(T) for a distance of 512.5' **(2x5=10 marks)**
 from 03° 12'N / 004° 11.3'E. Find the Position of the vessel arrived.
 b) Ship A in position 40° S / 12° 30' E is in 550.1' miles due west of Ship B. find the position of Ship B
- 7 a) Describe Five advantages of a Mercator Chart. **(2x5=10 marks)**
 b) Find the Course & distance from 38° 10'S /178° 00'E to 02° 50'S / 081° 10'W
- 8 a) Describe the salient features of a Gnomonic Chart **(2x5=10 marks)**
 b) The vertex of a great circle track is 48°00'N/ 36°30'E. Find the position where this track meets the equator if the vessel is sailing on easterly course.
9. Select the correct option from column B that corresponds to the ports/sea areas given in Column A. **(10 marks)**

A

B

- | | |
|------------------------|-------------------------|
| a) Port of Netherlands | 1) between France & UK |
| b) Quebec | 2) Tokyo Bay |
| c) Strait of Gibraltar | 3) River Saint Lawrence |
| d) Valparaiso | 4) Malacca strait |
| e) Strait of Hormuz | 5) Freemantle |

f) Port in Western Australia

g) Port of Yokohama

h) Dover Strait

i) South Korean Port

j) Important sea route between
Indonesia & Malaysia

6) Ulsan

7) Entrance to Persian Gulf

8) Rotterdam

9) Chilean Port

10) Between Morocco & Spain

* * * * *