Indian Maritime University

(A Central University, Govt of India)

Supplementary Examinations – March/April 2024

Programme Name: B Sc (NS)

Semester: 1

Subject Code: UG21T5106

Subject Name: TERRESTRIAL NAVIGATION

Date: 17.04.2024	Max Marks: 70
Duration: 03 Hrs	Pass Marks: 35

General Instructions

(i) All Sections (A, B & C) are to be attempted.
(ii) All Questions compulsory
(iii) Scientific calculator, Norrie's table and Almanac is permitted.
(iv) World Map will be supplied by the examination centre.

Section A

Objective Type Questions (1x10=10 Marks)

1. Panama canal connects ------ and ------- oceans.

2. The course line that cuts all the meridians at the same angle appears as a ----- line on the Mercator chart ,but when seen on the surface of the earth it appears in the shape of a --------.

a) spiral, straight

b) straight ,straight

c) straight, spiral

d) none of these.

3. Dlat from 5 °S to 2°N in minutes is

a)7^0 N
b) 4^0N
c) 3^0S

d) 7^0 S

4.At the equator, Departure and D'long is same.

a)True

b)False

5. -------- sailing is limited to calculations where the distance between the start and final position does not exceed 600 nautical mile.

a)Polar
b)Plane
c)Mercator
d)Great circle.

6.In a Mercator projection used for producing Navigational chart the ------- scale appears to be same over the entire chart.

a) latitude
b) longitude
c) latitude and longitude
d) none of these.

7. The great circle intersects the meridian of the vertex at ------

a)45 deg
b)60deg
c)90deg
d)180deg

8. In a great circle sailing, when sailing between two positions on equal latitudes in different hemispheres, the Initial course will be ---- to the final course.

a) more

b) less

c)equal

d)none of these.

9.Geographical mile is the length of the arc of the ----- subtending an angle of 1' at the centre of the earth.

a)meridian

b)parallel of latitude

c) Equator

d) none of these

10. The deviation of a compass varies as the ship's head changes.

a)True
b)False.

Section B

Short answer type questions (2X5=10Marks)

11.Define Nautical Mile.
12.What is natural scale of a chart?
13.The Compass bearing of a light house was observed to be 144.5°(C). Find its True Bearing if variation was 4.5°W and deviation 2.0°E.
~~any two advantage of Mercator chart.~~

14.What is a Great circle and Small circle?

15.What is variation?

Section C

Answer all five questions. (10 Marks Each)

16.
a)Given the compass error is 6°W,deviation is 2°E.Find the variation. (5 marks)

b)By Mercator sailing find the true course and the distance between the position 49°10' N 12°30'W and 25°15'N 26°50'W. (5 marks)

17.
a)What is geographic and geocentric latitude of a place? (5 marks)

b)Find the course and distance from position A:49° 35'N 004°00'W to position B: 50° 10'N 002°55'W. (5 marks)

18.
Find the Great circle distance, initial course and final course from position-A Lat 06°00'N / Long 079°00'W to position-B Lat 38°00'S / Long 179°00'E. (10 marks)

19.Find the total distance and the initial course along a composite great circle track between a position off Cape of Good Hope,34° 35'S 18°30' E and a position off Tasmania, 43° 40' S 146° 50' E. The maximum latitude is 50°S.(10 marks)

20.

a) You are on a voyage from Chennai to London via the shortest route. Mark and mention the names of the ocean(2nos),sea(3nos),canal(01 no),strait(01 no),Durban, London and Chennai on the world map.

(5 marks)

b)

A Ship in the position 40°N 105° 12′ E steams through a distance of 1000 miles on a course of 090°(T).Find the final position. (5 marks)

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1. Please refer to today's QP Code UG21T5106.

2. In this regard, please read Q No 13 under Section A as follows:

13 - The Compass bearing of a light house was observed to be 144.5°(C). Find ue Bearing if variation was 4.5°W and deviation 2.0°E.

3. Kindly disseminate the same to the concerned students.

ks & Regards,