Indian Maritime University

(A Central Uni6versity, Govt of India)

End Semester Examinations – June 2025

Programme Name: DNS

Semester: 2

Subject Code: UD11T5201

Subject Name: Navigation III Navigation and Chartwork

Date: 09.06.2025	Max Marks: 70
Duration: 03 Hours	Pass Marks: 35

General Instructions

(i) All Sections (A, B & C) are to be attempted.

(ii) Scientific Calculator is permitted.

(iii) (Norrie's Table, Nautical Almanac, permitted)

Section A

Ten MCQs/Fill in the Blanks of 01 Mark each

1. In which volume 0f Admiralty List of Radio Signals (ALRS) the Information on ' Maritime safety & information System ' is available?

A)IV

B)III-

C)II

D)V

2. The summer solstice in northern hemisphere occurs somewhere closer to the date

A)22 June

B)21 March

C)22 December

D)23 September

3. During which voyage plan phase the navigating officer plots the track berth to berth on the charts.

A)Monitoring

B)Execution

C)Appraisal

D)Planning

4. The earth is farthest to the sun at

A) Perigee

B) Apogee

C) Perihelion

D) Aphelion

5. Drying height is measured from

A) Mean high water spring

B) Mean sea level

C) Chart datum

D) Highest Astronomical tide

6. Which is one of the sides of the PZX triangle

A)Altitude

B)Polar distance

A)Latitude

D)declination

7. The buoy having one red cylinder as top mark, refers to

A) Cardinal mark

B) Safe water mark

C) Special mark

D) Lateral mark

8. The great circle , every point on it is 90 degrees from Zenith is called

A)Rational horizon

B)Visible horizon

C)Equinoctial

D)Sensible horizon

9. The ZT for LMT 1040 at longitude 145deg W is

A)1100

B)1020

C)1000

D)1120

10. Horizontal movement of water due to tide raising force is

A) Tidal stream

B) Eddies

C) Current

D) set

Section B

Five Questions of 02 Marks each.

11. Calculate the GP in the following case: Celestial Body Sun

Date 4th March 2008 and GMT 23h 14m 44s.

12. Define Set and Drift .

13. Define Geographical range of light.

14. Define Amplitude of a celestial body.

15. LMT- 30d 5h 9m 50s and Long- 076°16′ W, Calculate the GMT

Section C

Answer all the questions. (10 Marks Each)

16. Find the Initial course and Distance from 69° 30.0'N 060° 50.0'E to 44° 40.0'N 120° 20.0'E

17. Explain what is meant by the term 'Quality of Data (CATZOC)' on an ENC.

What are the various CATZOC categories –and State the depth accuracy

& position accuracy associated with each CATZOC value, Along with the ECDIS symbols.

18. On 22nd Sept 2008, PM at ship in DR 48° 20'N 085° 40'E, the sextant altitude of the sun's UL was 20° 04.9' when the GPS clock showed 10h 09m 38s. If IE was 2.2' on the arc & HE was 25m, find the direction of the LOP and the longitude where it cuts the DR latitude.

19. Define & draw neat labelled diagram indicating the following ,

Chart Datum, Drying Height, MHWS,MHWN, MLWS,MLWN.

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A) Find the SMT of Sunrise for an observer in Latitude 40°00'S Longitude 56° 30'W on 4th MARCH 2008 (Zone +03).

B)Define Greenwich hour angle (GHA) and Local Hour Angle (LHA)