

Indian Maritime University
(A Central University, Govt of India)

End Semester Examinations – December 2023

Programme Name: DNS

Semester: I

Subject Code: UD11T5105

Subject Name: Navigation II

(Bridge Equipment, Watch Keeping & Meteorology)

Date: 26.12.2023

Max Marks: 70

Duration: 03 Hours

Pass Marks: 35

General Instructions

- (i) All Sections (A, B & C) are to be attempted.
- (ii) Options, if any, are specified in respective section.
- (iii) Scientific Calculator is permitted.

Section A

Ten MCQs/Fill in the Blanks of 01 Mark each – Choose the correct answer.

1. A ----- is a fixed line on a compass binnacle parallel to the ship's fore and aft line
 - a. Margin line
 - b. Parallel line
 - c. Rubber line
 - d. Lubber line
2. Vertical sextant angle of a celestial object is called -----.
3. Gyro error must be taken every twenty-four hours (True / False)
4. ----- is the separation zone between stratosphere and mesosphere
5. Fall in atmospheric pressure with distance is called Pressure Gradient. (True / False)
6. According to the Rule number 3 General Definitions, A sailing vessel is NOT restricted in her ability to Manoeuvre. (True / False)
7. ----- is described as fine drops of water, diameter less than 0.5 mm. It is termed heavy or light depending on intensity of precipitation.
8. Risk of collision shall be deemed to exist if the ----- of an approaching vessel does not appreciably change.
 - a. Speed
 - b. Relative bearing
 - c. Compass bearing
 - d. Course
9. A vessel using a traffic separation scheme shall normally join or leave a traffic lane at the ----- of the lane.
10. When two power-driven vessels are crossing so as to involve risk of collision,

the vessel which has the other on her own ----- side shall keep out of the way and shall, if the circumstances of the case admit avoid crossing ahead of the other vessel.

Section B

Short questions

(2 x 5 Marks)

11. Define DALR & SALR?
12. Define the word underway?
13. Define stern light of a vessel?
14. Explain any two different modes of steering?
15. Explain the principle of electromagnetic log?

Section C

Answer five out of seven questions. (10 Marks Each)

16. (7+3 = 10 Marks)
 - a. State and explain various errors of sextant
 - b. State the composition & properties of liquid mixture used in magnetic compass.
17. Explain the Diurnal and Seasonal variation of temperature on Earth. (10 marks)
18. Describe and Sketch the layout of the Bridge with its Navigational Equipment? (10 Marks)
19. Sketch and explain the working of an Aneroid Barometer. (10 marks)
20. (2 x 5 = 10 Marks)
 - a. Explain Barometric Tendency?
 - b. Define Safe speed and the factors to be taken into account in determining a Safe Speed (By all vessels)?
21. (4 + 6 = 10 Marks)
 - a.) Explain the term Vessel Constrained by her Draft (CBD)?
 - b.) Explain the term Vessel restricted in her ability to manoeuvre (RAM)?
22. Define: (4 x 2.5 = 10 Marks)
 - a. Isobars
 - b. Dew Point
 - c. Relative Humidity
 - d. Restricted Visibility