

Indian Maritime University
(A Central University, Govt of India)
End Semester Examinations – December 2022
Programme Name: DNS
Semester: I
Subject Code: UD11T5105

Subject Name: Bridge Equipment, Watch Keeping & Meteorology

Date: 29.12.2022

Max Marks: 70

Duration: 02 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.
- (iv) (Norrie's Table, Nautical Almanac, Hindship Hyd. Particulars, Weather coding booklet, Tide Tables, permitted as per the subject concerned)
- (v) (World Map, Tidal curve, Radar Plotting sheets, Charts, Illumination range curve chart will be supplied by the Examination Centre)

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). A magnetic compass is also called a ----- compass.
- (4). ----- is the separation zone between stratosphere and mesosphere

- (5). If Hold temperature is greater than the dew point of the outside air, then -----.
- (6). Electro-magnetic log and/or Doppler log measures the ----- of the vessel through the water.
- depth
 - speed
 - height
 - beam
- (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.
- Speed
 - Relative bearing
 - Compass bearing
 - 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

Five Questions of 02 Marks each. SHORT ANSWER TYPE QUESTIONS

11. Explain adiabatic change of temperature.
12. Define the word underway
13. Define sternlight of a vessel
14. Explain the purpose of course recorder
15. State the uses of sextant

Section C

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

16. a) State and explain various errors of sextant 07 Marks
b) State the composition & properties of liquid mixture used in magnetic compass. 03 Marks
17. a) Describe the procedure for change-over from Hand steering to Auto pilot and back. 07 Marks
b) Name the electronic navigation equipment which receive heading information from Gyro compass. 03 Marks
18. a) Explain cloudy nights are warmer than nights with clear sky. 07 Marks
b) Explain the following forms of precipitation: rain & sleet. 03 Marks
19. a) Explain semi diurnal variation and semi diurnal range of atmospheric pressure. 05 Marks
b) Explain DALR & SALR, why SALR is less than DALR? 05 Marks
20. a) Explain the rule regarding Lookout. 05 Marks
b) What are the duties of a lookout person? 05 Marks
21. a) Explain the rule of a stand-on vessel. 05 Marks
b) Explain the term Vessel restricted in her ability to manoeuvre. 05 Marks
22. a) Describe the structure of the IRPCS (COLREGS) showing the parts & sections along with their names, including rule numbers. 05 Marks
b) Explain the rule regarding Overtaking. 05 Marks

