

Indian Maritime University
(A Central University, Govt. of India)
End Semester Examinations – June 2023
Course: DNS Semester: Second
Subject Code: (UD11T5202)
Subject Name: Navigation IV: Advanced Bridge Equipment,
Watch-Keeping and Meteorology

Date: 02.06.2023

Max Marks: 70

Duration: 03 hrs.

Pass Marks: 35

General Instructions

- (i) All Sections (A, B & C) are to be attempted. Choices if any will be mentioned in the respective section.
- (ii) Non-programmable Scientific calculators permitted.

Section A

**Answer all the questions
(10 X 1mark = 10 marks)**

State True or False, fill in the Blanks and choose the correct answer

1. In Radar the purpose of gain control is amplification of weak echoes
(True/False)
2. Range discrimination is the ability of the Radar to distinguish between two Targets on the same range but different bearings (True/False)
3. In GPS pseudo range arises because user clock is not synchronised with Satellite clock (True/False)
4. When services of Pilot is used in pilotage waters the responsibility for the Safety of the ship lies with Pilot only (True/False)
5. Every vessel which is directed to keep out of the way of another vessel is called the stand on vessel (True/False)
6. A calm central area of lowest pressure at the centre of a TRS is called _____
7. Coriolis force is caused due to _____
8. A vessel at anchor uses which sound signal to give warning of her position to an approaching vessel?
 - a. One short, one prolonged and one short blast
 - b. Continuous ringing of the bell
 - c. One prolonged, two short blasts

- d. Four or less short blasts
9. The day signal cylinder is used by
- a. A vessel not under command
 - b. A vessel constrained by her draft
 - c. A vessel aground
 - d. A vessel engaged in mine clearance

10. Which of the following is not a ship reporting system?
- a. INSPIRES
 - b. AMVER
 - c. AUSREP
 - d. FISHREP

Section B
Answer all the Questions

Five Questions of 02 Marks each (5 X 2 marks = 10 marks)

Write short notes on the following:

- 11. DGPS
- 12. VDR
- 13. Composition of a Bridge team under different manning levels?
- 14. Radiation Fog
- 15. Buys Ballot's law

Section C
Answer any five out of seven questions.
(5 X 10 marks = 50 marks)

16. Explain the basic working of Marine Radar with block diagram **(10 marks)**
17. What are the three segments of GPS? Explain briefly the function of Each segment. **(10 marks)**
- 18.
- (a) List out the circumstances under which you must call the Master to Bridge during your Navigational watch keeping **(5 marks)**
 - (b) Explain watch keeping in restricted visibility **(5 marks)**

19. List out the various Distress signals as described in Rule-37 and Annex IV of The Colreg's **(10 Marks)**

20. Describe the four ways in which clouds are formed **(10 Marks)**

21.

a. Explain Katabatic and Anabatic Winds **(5 marks)**

b. State and describe the Warning signs of an Approaching TRS

(5 marks)

22.

a. What is the purpose of BNWAS? Explain the various stages of alerting.

(5 marks)

b. Compare and contrast AIS and LRIT

(5 marks)
