

Indian Maritime University
(A Central University, Govt of India)
End Semester Examinations – June 2026
Programme Name: DNS

Semester: I

Subject Code: UD11T6107

Subject Name: Bridge Equipment and COLREGS

Date: 09.06.2026

Max Marks: 70

Duration: 03 Hrs

Pass Marks: 35

General Instructions

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

Section A

Ten MCQs of 01 Mark each – Choose the correct answer as applicable.

1. The Sextant works on the principle of

- a) Single Reflection
- b) Double Reflection
- c) Triple Reflection
- d) Multiple Reflection

2. In a Sextant, Side error is caused when the _____ is not perpendicular to the plane of the instrument.

3. Marine echosounders typically calculate depth using a standard sound speed of _____

4. The "Janus Configuration" in a Doppler log is used to:

- (a) Eliminate errors caused by trim and pitching
- (b) Increase the signal range
- (c) Measure water salinity
- (d) Calculate the speed of light

5. All vessels must test the emergency steering system every ____ months

6. A vessel is defined as "Underway" when she is:

- (a) Moving through the water
- (b) Making way with engines

- (c) Not at anchor, made fast to the shore, or aground
- (d) Navigating in a traffic lane

7. Rule 11 to 18 of International Regulations for Preventing Collisions at Sea (IRPCS) govern conduct of vessels in _____

8. The "Lubber Line" in a compass bowl indicates:

- (a) The direction of Magnetic North
- (b) The ship's fore and aft line
- (c) The variation correction
- (d) The angle of heel

9. Whilst entering Singapore Harbour, you sight a North Cardinal Mark. You shall pass _____ of the Mark

10. The Bridge Navigational Watch Alarm System (BNWAS) is designed to:

- (a) Record voyage data
- (b) Automate the steering gear
- (c) Prevent illegal boarding
- (d) Monitor bridge activity and detect operator disability

Section B

Five Questions of 02 Marks each

- 11. List any four markings which one should make on the Course Recorder Paper.
- 12. State two physical factors that affect the velocity of sound in seawater
- 13. How is Non-Follow Up Mode of Steering different from Follow Up Mode of Steering.
- 14. State two circumstances under which the OOW must call the Master to the bridge.
- 15. What is the major difference in Buoyage System being followed between System A and System B.

Section C

Five Questions of 10 Marks each.

- 16. Describe the function of the following navigational equipment in brief.
1. Echo sounder, 2. Log, 3. Magnetic compass, 4. Gyro repeater, 5. Radar
- 17. Explain principle and limitations of Doppler Speed Log. How does Janus configuration overcome limitations of Doppler Speed Log.
- 18. What is the purpose of Wheel House Posters? List 08 contents of the Wheel House Posters.

19. Explain what is meant by Safe Speed and factors which need to be taken into account in determining safe speed, as laid down in Rule 6 of IRPCS.

20. List at least 10 entries which the OOW should make in the Deck Log Book when keeping a Navigational watch at Sea.

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Q Nos. 10, 14 & 16 have been replaced with the following questions. -

Q 10. What is the meaning of "W" Flag

- a. I have a Diver Down**
- b. I am Altering Course to Port**
- c. Man Overboard**
- d. I require Medical assistance**

Q No 14. Define 'Vessel Not Under Command' (2)

Q No 16 a. Draw and explain the principle of Sextant (5)

b. Differentiate the dry and wet card compass (5)"

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