

Indian Maritime University
(A Central University, Govt of India)
End Semester Examinations – June 2025

Programme Name: DNS

Semester: II

Subject Code: UD11T6207

Subject Name: Bridge Electronic Equipment & Watch Keeping

Date: 09.06.2025

Max Marks: 70

Duration: 03 Hrs

Pass Marks: 35

General Instructions

- (i) All Questions are to be attempted.

Section A

**(Answer all questions. Ten MCQs/Fill in the blanks of 01 Mark each –
Choose the correct answer as applicable)**

1. What frequency does the Automatic Identification System (AIS) operate on _____?
2. The primary function of the Echo Sounder is to measure _____.
3. ECDIS stands for _____?
4. The X-band radar operates at a frequency of approximately _____ GHz.
5. What is the primary purpose of Voyage Data Recorder (VDR)?
6. Once the BNWAS is put in to operation, the dormant period should be between:
 - a) 5 to 10 minutes
 - b) 3 to 12 minutes
 - c) 3 to 10 minutes
 - d) 5 to 12 minutes
7. Which electronic navigation system is primarily used for determining a vessel's position at sea?
8. The function of the ARPA system is to track and display _____.
9. Tilt in Gyro is maximum at the ----- & Drift is maximum at the -----
10. VDR is akin to ----- of the aeroplane.
 - a) Gyro compass
 - b) Autopilot
 - c) Black box
 - d) Radar

Section B

Answer all the questions (Five Questions of 02 Marks each)

11. Explain Cross track alarm and Anchor alarm of GPS?
12. Explain Bridge manning levels?
13. Describe the possible risk of over-reliance and complacency on ECDIS?
14. Explain the difference between X-band and S-band radar in terms of their applications on a ship.
15. Explain S-VDR.

Section C

(All questions are compulsory)

16. a.) Draw a simple block diagram of a Marine Radar. **(05 Marks)**
b.) Explain the duty of Officer on Watch (OOW) in restricted visibility. **(05 Marks)**
17. a) What information is transmitted by AIS as Dynamic Data & Static Data? **(05 Marks)**
b) Differentiate between AIS & LRIT. **(05 Marks)**
18. a) Explain BNWAS. What are the different stages and alerting sequences of BNWAS? **(05 Marks)**
b) Describe the differences between Vector and Raster Charts. **(05 Marks)**
19. a) Explain the basic working principle and limitations of DGPS **(05 Marks)**
b) Explain the circumstances in which the Officer on Watch (OOW) should call the Master **(05 Marks)**
20. a) Explain the watch keeping duties while ship is at anchor. **(05 Marks)**
b) Explain Gyroscopic Inertia and precession. **(05 Marks)**