

**Indian Maritime University**  
(A Central University, Govt of India)  
**End Semester Examinations – December 2023**  
**Programme Name: B.Tech (NAOE)**  
**Semester: III**  
**Subject Code: UG12T2305**  
**Subject Name: Introduction to Naval Arch. & Ocean Engg.**

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Date: 15.12.2023

Max Marks: 70

Duration: 03 Hrs

Pass Marks: 35

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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/Fill in the Blanks of 01 Mark each – Choose the correct answer as applicable.

1. The area where the underwater edge of a continent meets the ocean floor is called a \_\_\_\_\_
2. **Fill in the correct word:** As wave frequency increases, wave length (increases/decreases)?
3. Find the odd man out:  
(a) Bulk carrier      (b) Offshore Supply Vessel      (c) Tug      (d) Hovercraft
4. \_\_\_\_\_ joining technique (for hull plates) will lead to higher skin friction drag.
5. \_\_\_\_\_ type of framing is adopted for ships more than 120 meters in length?
6. After the ship is afloat, the weight and C.O.G can be accurately established by an \_\_\_\_\_ experiment.
7. The size of hatches depends on the \_\_\_\_\_ and \_\_\_\_\_.
8. Radar is an acronym meaning \_\_\_\_\_
9. In a Tension Leg Platform, tension in tethers = \_\_\_\_\_
10. A protected reversing thermometer is special kind of stem thermometer which measures \_\_\_\_\_ temperature.

**Section B**

Five Questions of 02 Marks each

11. Define the term "Halocline".
12. Name one advantage and one disadvantage of using composites as hull material.

13. Define the ship layout plan "General Arrangement".
14. Name any two deck fitting items.
15. What is the "main design attraction" of Compliant towers?

### **Section C**

Seven Questions of 10 Marks each of which any 05 questions to be answered.

16. Illustrate the problems encountered for the oceanic resources due to human activity.
17. (a) Sketch typical diagram of a ship and define various spaces/terms/elements/components. (4 marks)  
(b) Name the classification of Gas carriers and define the unique design features of the Gas carriers. (6 marks)
18. Give the features of the following: ducted propellers, vertical axis cycloidal propeller and water jets.
19. Discuss about the dynamic effects acting on a ship hull during its voyage.
20. Classify the fire on-board a ship and illustrate the features of any two firefighting appliances.
21. Write a short note on the following navigational and communication equipment highlighting their applications (for safe navigation of vessel):  
(a) Global Positioning System                      (b) Automatic Identification System
22. Write in detail about the different techniques used for measurement of ocean currents.