
Indian Maritime University
(A Central University, Govt of India)
End Semester Examinations – December 2025
Programme Name: B Sc (NS)
Semester: I
Subject Code: UG21T6105
Subject Name: Ship Construction

TMI

Date: 16.12.2025	Max Marks: 70
Duration: 03 Hrs	Pass Marks: 35

General Instructions

- (i) All Sections (A, B & C) are to be attempted.
- (ii) All Questions Compulsory

Section A

Ten MCQs/Fill in the Blanks of 01 Mark each – Choose the correct answer as applicable. (10 x 1 mark = 10 marks)

1. The transverse direction in a ship means:
a. From bow to stern b. From side to side
c. From keel to deck d. From main deck to bridge
 2. Garboard strakes are:
a. The topmost side plates b. The first row next to the keel on each side
c. The plates fitted below the sheer strake d. The outermost bottom stiffeners
 3. The center girder in the double bottom structure serves mainly to:
a. Support the rudder post b. Increase transverse strength
c. Provide longitudinal strength d. Connect bulkheads
 4. The Baseline in ship construction is used to:
a. Indicate the keel slope b. Serve as a datum for vertical moulded dimensions
c. Measure longitudinal distances d. Show the position of the rudder stock
 5. The Parallel Middle Body of a ship refers to the:
a. Portion where the deck remains flat
b. Portion of the hull where cross-sectional areas remain constant
c. Forward curved region of the bow
d. Stern region below the rudder
 6. The main purpose of a Load Line on a ship is to ensure that the vessel has:
a. Maximum cargo capacity b. Correct trim and stability
c. Sufficient freeboard and reserve buoyancy d. Reduced hull resistance
 7. The Winter Load Line (W) is marked:
a. At the same level as the Summer Load Line
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- b. 1/48 of summer draft below the Summer Load Line
 - c. 1/48 of summer draft above the Summer Load Line
 - d. 50 mm above the Tropical Load Line

8. Pounding occurs when:

- a. The ship rolls in beam seas
- b. The bow lifts and then slams down onto the sea during pitching
- c. The ship is overloaded in fresh water
- b. Heavy cargo is loaded at the ends

9. Sloshing stresses arise when:

- a. Waves hit the bow directly
- b. Cargo shifts in the hold
- c. Liquid in a partially filled tank moves with ship motion and strikes bulkheads
- d. The ship is heavily trimmed by the stern

10. The Shell Expansion Plan is mainly used to:

- a. Show the flat 2D layout of hull plates, strakes, and frame positions
- b. Plan life-saving equipment
- c. Indicate ballast tank capacities
- d. Show crew accommodation arrangement

Section B

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

- 11. Describe bow flare, and its purpose.
- 12. What is the deck line, and what is its function?
- 13. What is the shell expansion plan? What are its uses?
- 14. Describe the purpose of the cargo hold bilge piping system?
- 15. What is the loadicator? its Two uses on-board ship?

Section C

Answer all 05 questions. (5 x 10 marks = 50 marks)

- 16. Define and illustrate: Fwd & Aft perpendicular, LOA, LBP, LWL (4 x 2.5m)
- 17. Draw and label the Starboard side load-line Marking
- 18. (A) Sketch and label a typical cross sectional view in way of cargo hold of a transversely framed bulk carrier that includes web-frame, transverse frame planes and the double bottom. [7 marks]
(b) What are the different functions of a double bottom tank. [3 marks]
- 19. Draw a Sketch of a Typical Anchoring Arrangements and name the parts
- 20. With a help of a neat, labelled diagram, describe the Stern frame and its functions.
