

Indian Maritime University
(A Central University, Govt of India)
End Semester Examinations – June 2025
Programme Name: B Tech (ME)
Semester: VII
Subject Code: UG11T4707
Subject Name: SEA TRIALS, DRY DOCKING, SHIPYARD

Date: 10.06.2025

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.
- (iii) Use blue/ black pen only.
- (iv) Use Pencil and ruler for diagrams (if any)
- (v) Calculators are not allowed for the exam.

Section A

Choose the correct answer as applicable. (10 x 01 marks)

1. For a ship undergoing a speed power trial, the difference between the ship's actual displacement and the required displacement shall be less than
 - a. 1%
 - b. 2%
 - c. 5%
 - d. 7%
2. Oxy-acetylene gas cutting can be used for which of these materials:
 - a. Aluminium
 - b. Steel
 - c. Copper
 - d. All of the above.
3. The seaward end of a graving dock is closed off by a dock gate called a _____.
 - a. Bow door
 - b. Graving gate
 - c. Caisson gate
 - d. Wicket gate
4. The surface area of the outside hull plating which lies between the light and load waterlines of the vessel is called as _____.
 - a. Leaching area
 - b. Critical area
 - c. Boot topping area
 - d. Sloshing area
5. What is the primary purpose of acid pickling in metal surface preparation?
 - a. To remove rust and scale
 - b. To increase tensile strength
 - c. To enhance conductivity
 - d. To reduce hardness
6. For which of the following is the Beaufort scale used?
 - a. Lines plan
 - b. speed of ship

- c. Geographical location of ship
 - d. Wind speed
7. Which of the following is a common heat source used in line heating?
- a. Gas torch
 - b. Induction coil
 - c. Electric arc
 - d. Laser
8. Ship's anemometer records
- a. Ship's speed over ground
 - b. Ship's speed through water
 - c. Relative wind speed and direction
 - d. water depth

9. Temporary or movable elevated platforms that support crew and materials during the construction of ship are called as:

- a. Platforms
- b. Floors
- c. Scaffolding
- d. Girders

10. Weed growth and barnacles attached to the underwater hull form and even to the propeller would

- a. Affect the speed of the vessel
- b. Worsen GHG emission
- c. Increase fuel consumption
- d. All of these

Section B

Five Questions of 02 Marks each

- 11. List four types of dry-docks
- 12. State two main concerns for ships during docking with cargo onboard
- 13. List four manoeuvring trials.
- 14. List four reasons for a ship to enter dry-dock
- 15. State two main methods of protecting steelwork from corrosion within the marine environment.

Section C

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

- 16. Explain the environmental conditions that influence the selection of site for speed power trials.
- 17. List out 10 parameters that are recorded based on measurements prior to the speed/ power trials
- 18. List 20 routine tasks to be carried out during dry docking of ships.
- 19. Sketch the layout of a shipyard
- 20. Explain the shot blasting process for mill scale removal. Also mention its merits and demerits.
- 21. a) Sketch and label a docking block arrangement as seen between the keel plate and the turn of the bilge for a wide beam vessel. (06 marks)
- 21. b) State two advantages and disadvantages of graving dock. (04 marks)
- 22. With the help of neat diagram, explain the construction and operation of a floating dry dock.