

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.