

Indian Maritime University
(A Central University, Govt. of India)
End Semester Examinations – June 2023
Programme Name: B Tech (NAOE)
Semester: IV
Subject Code: UG12T2405

Subject Name: Ship Construction/Ship Structural Arrangements

Date: 05.06.2023

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.

Section A

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

1. Grades of Shipbuilding steels
 - a. Grade E
 - b. Grade F
 - c. Grade AE
 - d. Grade AF
2. Which among the following is solid state welding process
 - a. Metal arc welding
 - b. Electro gas welding
 - c. Electro slag welding
 - d. Friction stir welding
3. The structural drawing which gives details of the number plates required to build a ship hull is
 - a. Midship section
 - b. Profiles and decks
 - c. Shell expansion
 - d. All
4. The ship type which has multiple foldable deck for cargo storage
 - a. Bulk carrier
 - b. Tanker
 - c. Container
 - d. General cargo carrier

5. The regulation which cater the need for double bottom construction is
 - a. SOLAS
 - b. MARPOL
 - c. COLREG
 - d. ITTC

6. The structural components like stringers and breast hooks are part of which construction
 - a. Fore end structure
 - b. Aft end structure
 - c. Midship
 - d. Hatch cover

7. The structural arrangement for the lowering and lifting for main engine is
 - a. Expansion joint
 - b. deckhouse
 - c. engine casing
 - d. bulwarks

8. Which among the following is a deck closing appliance
 - a. Bulwark
 - b. Hatch
 - c. bulkhead
 - d. freeing port

9. The outfitting arrangement to prevent dents on the ship hull at jetty
 - a. Fender
 - b. Mooring
 - c. Insulation
 - d. railings

10. The structural arrangement for stowage of the anchor chain
 - a. Bilge tank
 - b. Windlass
 - c. deckhouse
 - d. chain locker

Section B

Five Questions of 02 Marks each

11. Discuss the various grades of shipbuilding steels materials?
12. Using neat sketches illustrate various weld joints?
13. List the type of framing systems used in shipbuilding?
14. What are the different types of hatch covers?

15. Enumerate the types of insulation and panelling used in shipbuilding?

Section C

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

16. List any five ship outfitting items and discuss the function of each item?

17. Draw a sketch of a ship's fore end structure and brief the structural components?

18. Compare the single bottom and double bottom construction?

19. Draw a sketch of transverse section. Indicate the bottom, side and deck structure component wise.

20. Explain fusion welding methods and discuss in detail the manual metal arc welding process.

21. Draw a layout of the mooring arrangement in the fore castle deck indicating the various mooring lines.

22. Explain the types of bulkheads and connection details at the deck and bottom to the ship structure.

