

**Indian Maritime University**  
**(A Central University, Govt of India)**  
**End Semester Examinations – June 2024**  
**Programme Name: B.Tech NAOE**  
**Semester: IV**  
**Subject Code: UG12T2405**  
**Subject Name: SHIP CONSTRUCTION/SHIP STRUCTURAL**  
**ARRANGEMENTS**

Date: 10.06.2024

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. The joining technique used for construction of metal boats
  - a. Riveting
  - b. Welding
  - c. Both
  - d. None
2. Electrode is consumed in
  - a. Arc welding
  - b. Tungsten inert gas welding
  - c. Gas welding
  - d. Thermit welding
3. For use in oxyacetylene gas welding, oxygen is produced by
  - a. electrolysis of air
  - b. liquefaction of air
  - c. contamination of water
  - d. liquefaction of water
4. The structural drawing used to assess the number of steel plates used for ship construction
  - a. Deck and profiles
  - b. General arrangement
  - c. Shell expansion
  - d. Structural fire protection
5. The structural subsystem to which stringer plate are welded
  - a. stiffened bulkhead
  - b. bottom structure
  - c. Deck structure

- d. Side structure
- 6. The anchor chain storage space
  - a. chain locker
  - b. Double bottom
  - c. Wing tank
  - d. Void
- 7. Which among the following is a lifesaving appliance
  - a. windlass
  - b. bulwark
  - c. fender
  - d. life buoy
- 8. The opening provided for removal and replacement of main engine
  - a. hatch
  - b. manhole
  - c. engine casing
  - d. All
- 9. The provision provided in the double bottom for passing pipelines
  - a. Void
  - b. Duct keel
  - c. Keel bar
  - d. cofferdam
- 10. The torsion box arrangement is present in \_\_\_\_ ship type
  - a. Container
  - b. Bulk carrier
  - c. Tanker
  - d. All

### **Section B**

Five Questions of 02 Marks each

- 11. Brief on the material used for ship construction?
- 12. Draw the double bottom structure in components in detail?
- 13. Define the framing system?
- 14. Compare a web frame and ordinary frame?
- 15. Explain the difference between corrugated and ordinary bulkhead?

### **Section C**

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

16. Explain in the manual metal arc welding and welding parameters associated with it?
17. Draw the details structural arrangement of bottom, side and deck structure of a bulk carrier?
18. Draw the connection details of bilge keel, cut outs, hatch ways, pillars and bulwark?
19. Compare the structural arrangement of aft end and fore end arrangement?
20. Classify the engine room system and explain through a layout diagram?
21. Explain the equipment number calculation and the outfitting items for mooring the vessel?
22. Describe the various weld distortions and inspection techniques?

