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***B.Tech. Degree IV Semester Supplementary Examination in  
Marine Engineering June 2024***

**MRE 1407 SHIP TECHNOLOGY  
(2013 Scheme)**

Time: 3 Hours

Maximum Marks: 100

(5 × 20 = 100)

- I. (a) Draw the profile of the ship and mark the following parts and dimension. (10)
- (i) LOA
  - (ii) LBP
  - (iii) Breadth Moulded
  - (iv) Breadth Extreme
  - (v) Draft
  - (vi) Depth
  - (vii) Camber
  - (viii) Tumble home
  - (ix) Sheer
  - (x) Freeboard.
- (b) Briefly explain Hogging, Sagging, Pounding and Panting. (10)

**OR**

- II. (a) Explain different types of sections used in ship construction with neat sketches. (8)
- (b) Explain dwt and light weight of a Ship. (6)
- (c) Find the initial dwt and final dwt of a 120 m long ship of displacement = 40000 t and light weight = 7000 t after inserting a parallel mid body of 20 m of displacement 7000 t and light weight = 1040 t. (6)
- III. (a) Describe single bottom and double bottom constructions. Compare merits and demerits of each. Which construction would you recommend for a 150 m long ship? Why? (10)
- (b) With the help of neat sketches describe the strakes and stiffeners in a double bottom structure. (10)

**OR**

- IV. (a) Discuss various framing systems used in ships. What is the basis of selection of a particular system in a ship? How does the frame spacing influence the scantlings? (10)
- (b) Describe various structural members in deck structure, with neat sketches. (10)

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V. Neatly sketch the midship section of a bulk carrier indicating all stiffeners and strakes. (20)

**OR**

VI. Describe fore end arrangements in a ship with neat sketches. (20)

VII. (a) What are the special fittings and structural arrangements in the forward region of ship? (10)

(b) What are bulkheads? Why do you need them? Which transverse bulkheads are mandatory in a ship? (10)

**OR**

VIII. (a) What is the special nature of structural arrangements in the aft region? Which are the common fittings in this region and how they are supported? (10)

(b) Sketch a rudder showing supports and rudder stock. How it is constructed? (10)

IX. Sketch a typical layout of a shipyard. Describe the activities of ship production at various locations in the layout. (20)

**OR**

X. (a) Define Net Tonnage and Gross Tonnage. What are the contents in the Tonnage Certificate? (8)

(b) Draw the Plimsoll Marking of a ship having summer draft = 18 m, FWA = 650 mms. (12)

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