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**B.Tech. Degree IV Semester Examination in Marine Engineering
May 2019**

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

Time: 3 Hours

Maximum Marks: 100

(5 × 20 = 100)

- I. (a) (i) Draw the profile and mid-ship section of a Ship and mark the following parts/dimensions: LOA, LBP, BMLD, Depth, Camber, Sheer, Rake, E/N Room, Steering gear flat. (8)
- (ii) Breadth of a Ship = 20 m and draft = 9 m. If bottom shell thickness = 30 mm and Side shell thickness = 20 mm calculate moulded breadth and moulded draft of the Ship (2)
- (b) What is revetting? Discuss its advantage/disadvantage compared with Welding. What are the tests carried out in weld joints? (10)
- OR**
- II. (a) (i) Explain Dead Weight and Light Weight of a Ship. Which are the items making each of them? (7)
- (ii) A ship of 200 m length is having a displacement of 60000 t and light weight of 9000 t. Ship is now modified to 220 m length by adding a parallel mid body section at centre increasing the light weight by 1200 t and cargo carrying capacity by 7400 t. Find final DWT, Light weight and Displacement of the Ship. (3)
- (b) What are the types of sections used in Ship construction? Explain with sketches. (10)
- III. (a) Draw a neat sketch of bottom structure of a Bulk Carrier showing all strakes and stiffeners and mark the various components. (12)
- (b) Describe solid floor and bracket floor with sketches. (8)
- OR**
- IV. (a) Explain different types of Bulkheads used in Ships. (10)
- (b) What is Bulbous bow? Why is it provided in the Ships? (10)
- V. (a) Define freeboard in a Ship. Why minimum freeboard is required in a Ship? (10)
- (b) Prepare Plimsoll marking of a Ship with following details: (10)
Summer draft = 15 m, Fresh water allowance = 250 mm
- OR**
- VI. (a) Define GT and NT. How are they calculated? (10)
- (b) Explain how Load line marking are made in Ships. (10)

(P.T.O.)

- VII. (a) Describe activities in Mould loft, Preparation shop and in dock during Ship construction. (10)
- (b) What are the types of Rudders? Explain the features of each of them. (10)
- OR**
- VIII. (a) What are the factors to be considered for selecting location of a Shipyard? (8)
- (b) Explain IBC and IGC codes. (6)
- (c) Write short note on 'Ship Registration formalities'. (6)
- IX. (a) Explain the different types of Offshore structures, Vessels and Operations. (10)
- (b) Describe the role of Classification Societies in Ship building. (10)
- OR**
- X. (a) What is "Deep sea diving system"? Briefly explain "SCUBA" diving giving its merits and demerits. (8)
- (b) What is the importance of Annual and Periodical surveys? (6)
- (c) Briefly explain speed trial conducted on Ships. (6)
