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***B.Tech. Degree IV Semester Supplementary Examination in
Marine Engineering June 2023***

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

Time: 3 Hours

Maximum Marks: 100

(Answer *ALL* questions)

(5 × 20 = 100)

- I. (a) Explain the following using neat sketches: (10)
- | | |
|--------------------------|------------------------|
| (i) Forecastle | (iv) Sheer |
| (ii) Tumble home | (v) Camber |
| (iii) Moulded dimensions | (vi) Aft perpendicular |
- (b) Explain various hull structural members that resist transverse stresses. Indicate these members on a sketch. (10)
- OR**
- II. (a) Explain: (i) Hogging (ii) Pounding (iii) Panting (iv) Racking. List the structural members which resist each of these. (10)
- (b) Explain various types of sections used as stiffeners in hull construction. Draw neat sketches of each of them. (10)
- III. (a) Explain the structural arrangement in way of double bottom which is longitudinally framed. Draw neat sketch of the double bottom structure and mark the structural members. (10)
- (b) Describe the structural arrangement in way of deck structure of a ship which is transversely framed. Draw a neat sketch of the deck structure and mark the structural members. (10)
- OR**
- IV. (a) Explain the structural arrangement on a transversely framed side shell structure of a ship. Draw neat sketches and mark various structural members on the side shell. (10)
- (b) Describe the structural arrangement of a corrugated bulkhead. (5)
- (c) Differentiate between watertight hatch covers and watertight sliding doors. (5)
- V. (a) Explain the structural arrangement, which is forward of the collision bulkhead, in the case of a ship having bulbous bow. (14)
- (b) Explain any three types of rudders. (6)
- OR**
- VI. (a) Explain the aft structural arrangement in the case of a ship having transom stern. (14)
- (b) Describe the stiffening arrangement on collision bulkhead. (6)

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- VII. (a) Explain the terms subassembly, assembly and units related to hull construction. (6)
- (b) Draw a neat sketch of freeboard marking fitted on ships. What is the purpose of fitting freeboard markings on a ship? (8)
- (c) Explain the loadline survey carried out on ships. (6)
- OR**
- VIII. (a) Explain gross tonnage and net tonnage. (6)
- (b) Draw layout of a typical shipbuilding yard and indicate various shops and departments. (14)
- IX. (a) Explain the features of any one of the fixed offshore platforms, with the help of neat sketches. (10)
- (b) Explain various surveys carried out for a ship as per statutory regulations. (10)
- OR**
- X. (a) Explain the features of an offshore support vessel. (10)
- (b) Explain the functions of Classification Societies. (10)
