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***B.Tech. Degree IV Semester Examination in
Marine Engineering May 2016***

MRE 1407 SHIP TECHNOLOGY

Time : 3 Hours

Maximum Marks : 100

(5 × 20 = 100)

- I. (a) Define all main dimensions of ship differentiating moulded and extreme values. (10)
- (b) Indicate how longitudinal bending stresses and vertical shear stresses are distributed in a cross section of a ship. What is hogging and sagging? (10)
- OR**
- II. (a) Explain displacement, deadweight, light weight, steel weight, sheer, camber, bridge, poop, forecastle and tumble home. (10)
- (b) Sketch four common sections used in shipbuilding indicating their features, viz., web, flange, depth of section. How do you weld them to plates? (10)
- III. (a) Compare double bottom and single bottom constructions. In which ship types would you use these constructions? (10)
- (b) What are watertight bulkheads? Why do you need them? How do you ensure watertightness of such bulkheads if there is requirement of cables/shafting to pass through them? (10)
- OR**
- IV. (a) Which are the important strakes in bottom, sides and deck? How do you join deck stringer and shear strake? (10)
- (b) Sketch the midship section of any cargo ship indicating all structural members. (10)
- V. (a) What is the function of fore peak bulkhead? Where will you locate it? Explain panting and panting stringers. (10)
- (b) Explain balanced, unbalanced and semibalanced rudders. (10)
- OR**
- VI. (a) What is a bulbous bow? Sketch various shapes and cross sections of bulbous bow. How will you stiffen the bulbous bow construction? (10)
- (b) Sketch and explain the rudder trunk and supporting mechanisms for rudders. What is a *stern frame*? (10)
- VII. (a) Explain mould loft and its activities. Explain different methods of launching. (10)
- (b) Explain Gross Tonnage and Net Tonnage. How will you assess them? What is the relevance of tonnage? (10)

OR

(P.T.O.)

- VIII. (a) Explain basic freeboard and Type- A, Type- B, Type- B-60,Type- B-100 ships. (10)
- (b) Explain prefabrication techniques in a modern shipyard. (10)
- IX. (a) What are the functions and features of offshore supply vessels? What is meant by a cable laying ship? (10)
- (b) Explain the main features of MARPOL regulations. What are IBC and IGC codes? (10)
- OR**
- X. (a) Which are the various offshore activities? What kind of offshore structures/vessels are needed for these activities? (10)
- (b) Explain surveys conducted during construction and during service. Who conducts them? (10)