



B. Tech Degree IV Semester Examination in Marine Engineering, November 2008

MRE 407 SHIP TECHNOLOGY

Time : 3 Hours

Maximum Marks : 100

- I. (a) Which are the items that make up light weight and dead weight of a ship? (8)
 (b) Which are the various forces and moments which can act on hull girder in a sea way? How are they generated? (12)
- OR**
- II. (a) With the help of neat sketches define the main dimensions of a ship. Differentiate between moulded and extreme dimensions. (8)
 (b) What do you understand by grades of steel for ship construction? Neatly sketch and name common sections used for stiffening the steel plates. How are the stiffeners connected to the plates? (12)
- 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. Neat sketches are necessary. (10)
- V. Neatly sketch the midship section of a bulk carrier indicating all stiffeners and strakes. (20)
- OR**
- VI. Neatly sketch the midship section of a modern tanker indicating all stiffeners and strakes. (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 are they 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. Write short notes on any four : (4 x 5 = 20)
 (i) Tonnage
 (ii) Plimsol markings
 (iii) Launching
 (iv) Sea trials
 (v) Prefabrication
 (vi) Bulbous bow