

B.Tech Degree IV Semester Examination in Marine Engineering May 2012

MRE 407 SHIP TECHNOLOGY

Time: 3 Hours

Maximum Marks: 100

(5 × 20 = 100)

- I. (a) Describe common materials used in shipbuilding. Why mild steel emerged as the most common material?
(b) Neatly sketch and name four commonly used sections in shipbuilding. Why sections are used? How are they connected to plates?
- OR**
- II. (a) Define with the help of neat sketches LBP, moulded breadth, extreme breadth, moulded depth, extreme depth, moulded draft, extreme draft and LOA.
(b) Make a general classification of ships based on their intended functions.
- III. (a) Make a comparison between welding and riveting. Which one is more popular in modern shipbuilding and why?
(b) Describe panting and pounding and their effects on ship's structure.
- OR**
- IV. (a) Describe how the deck and side of the ship stressed during bending and shear.
(b) Describe sagging and hogging.
- V. (a) Explain single bottom and double bottom constructions. In which all ships you find these types of constructions and why?
(b) Neatly sketch the midship section of general cargo ship with one tween deck and mark all structural components.
- OR**
- VI. (a) What is a bulkhead? Why do we need them? What is the minimum number of bulkheads needed in a cargo ship and where do you place them?
(b) Neatly sketch the midship section of a tanker and mark all structural parts.
- VII. (a) What are the structural arrangements necessary to resist panting? Give neat sketches.
(b) What is a stern frame and why do you need it? Sketch different types of stern frames.
- OR**
- VIII. (a) Describe different types of rudders and their construction. How do you support rudders?
(b) Describe bar stem and plate stem construction.
- IX. (a) Neatly sketch the layout of typical shipbuilding yard. Explain the logic of your layout.
(b) Discuss the need for minimum freeboard. How do you ensure minimum freeboard?
- OR**
- X. (a) What are the criteria in choosing a location for a shipbuilding and repairs yard? Justify.
(b) Describe sub-assembly and assembly processes in ship production.