



INDIAN MARITIME UNIVERSITY

B.Tech (MARINE ENGINEERING)

June 2013 Examinations

FOURTH SEMESTER

SHIP STRUCTURE & CONSTRUCTION

Subject Code: UG/ME/MS/T/221

Date: 06.06.2013

Time: 3 Hrs

QP Code: T0511401

Max. Marks: 100

PART-A (Compulsory)

1. Draw a neat sketch of a ship indicating the following principal ship dimension terms. Aft perpendicular, forward perpendicular, length overall, length between perpendiculars, freeboard, sheer forward, (3 marks)
2. Sketch and name various steel sections used in shipbuilding industry. (3 marks)
3. Sketch and label a longitudinally framed double bottom construction. (3 marks)
4. What are the various functions of decks at various levels? (3 marks)
5. List out three conditions of operations that a sliding type watertight door must fulfil. (3 marks)
6. Highlight the purpose of the following: 1. Chain locker 2. Hawse pipe (3 marks)
7. Name the methods by which plate surface preparation is carried out prior applying a primer coat on it. (3 marks)
8. List out the role of computers in overall ship construction process. (3 marks)
9. Highlight the various purposes tugs can be used for. (3 marks)
10. What is meant by the term "dynamic positioning" in regard of offshore technology? (3 marks)

PART-B (ANSWER ANY FIVE)

1. Describe the various stresses associated with a ship floating in water and at sea. (14 marks)
2. Describe the various non-destructive tests carried out on welds in connection with ship construction. (14 marks)
3. Draw a neat sketch of the mid-ship section of a bulk carrier and label it. (14 marks)
4. Draw and label the elevation of the fore end construction of a ship. (14 marks)
5. Draw a neat sketch and label the various areas in the layout of a shipyard. (14 marks)
6. Describe the construction of a rudder with suitable sketches. (14 marks)
7. Highlight on the following: (5 + 5 + 4 = 14 marks)
 - a. Role of International Maritime Organisation (IMO)
 - b. National authorities in regard of maritime affairs
 - c. Role of various Classification Societies

Handwritten notes:
① for visual inspection
② for x-ray
③ for ultrasonic test
④ for magnetic test
⑤ for dye penetrant test
⑥ for radiography test
⑦ for eddy current test
⑧ for acoustic emission test
⑨ for impact test
⑩ for Charpy test
⑪ for tensile test
⑫ for compression test
⑬ for shear test
⑭ for bending test
⑮ for fatigue test
⑯ for creep test
⑰ for stress corrosion test
⑱ for hydrogen embrittlement test
⑲ for stress relaxation test
⑳ for fracture toughness test
㉑ for impact test
㉒ for Charpy test
㉓ for tensile test
㉔ for compression test
㉕ for shear test
㉖ for bending test
㉗ for fatigue test
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