

INDIAN MARITIME UNIVERSITY
(A Central University, Government of India)

May/June 2015 End Semester Examinations
B.Sc. (Nautical Science) - Second Semester (2013 batch onwards)

Naval Architecture Paper - II (T 2210)

Date : 25.06.2015

Maximum Marks: 70

Time: 3 Hrs

Pass Marks : 42

Note: Question 1 is compulsory . Attempt any TWO questions from the remaining questions of 'Section –A'. Each question carries 10 marks.

Section –A

Ship Construction

(30 Marks)

1. Draw profile view of an Oil Tanker and Label various parts
(10 marks)
2. Explain the Static and Dynamic conditions of the vessel and various forces causing the structure to distort. (10 Marks)
3. Name four heat treatments to steel plates normally used in ship building and discuss any one of them (10 marks)
4. Write short notes on the following with sketches: (10 Marks)
 - i) Gas Welding
 - ii) Electric Arc Welding.

Section –B

Ship Stability

(40 Marks)

Note: Question 5 is compulsory. Attempt any THREE questions from the remaining questions of 'Section –B'. Each question carries 10 marks.

5. Define the following: (10 Marks)
- i) Height of Metacentre ii) Metacentric Height
iii) Righting Lever iv) Free Surface Effect v) Centre of Flotation
6. Explain the following with diagram: (10 Marks)
- i) Angle of Loll ii) Unstable equilibrium.
7. When a ship of 14000 t displacement is heeled by 8° , her moment of statical stability is 400 tm. If KG is 7.3 m, find KM. (10 Marks)
8. M.V. 'Hindship' floating in Condition No.2 loads 400 tonnes of cargo in No. 1 TD and on the voyage consumes the entire oil in No.2 DB tanks P & S.

Calculate GM (Solid & Fluid). As change of displacement is negligible, assume FSC constant. (10 Marks)

9. Explain different types of hydrostatic curves and tables as given in M.V. Hind Ship and their uses in the stability calculation. (10 Marks)
