

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

June 2016 End Semester Examinations
B.Sc. (Nautical Science) - 2013 batch onwards
Semester I

MARINE ENGINEERING, AUTOMATION AND CONTROL SYSTEMS PAPER – I
(UG21T2112)

Date : 02.07.2016/A.N

Time: 3 Hrs

Maximum Marks: 70

Pass Marks : 35

NOTE: Attempt any SEVEN questions. All questions carry equal marks **7x10=70**
Use of Non-programmable scientific calculator is allowed.

1. a. Define hook's law with an example.
b. Draw a stress strain curve related to an elastic body and explain
2. a. Explain the term Shear with an example related to marine engineering.
b. Explain the term fatigue with an example related to marine engineering.
3. Draw a neat diagram and show the forces that act on ship's hull during rough weather and the hogging and sagging of the ship's hull in such conditions.
4. with a simple sketch explain the working of any one of the Hydraulic equipment used onboard ship
5. a. Define the term Sensible Heat and Latent Heat.
b. Define the terms Flammability and Toxicity.
6. a. Brief about OPA – 90.
b. Define the term Viscosity.
7. Draw and explain the basic Fire Triangle and also the various fire extinguishing principles based on the fire triangle.
8. Explain fire triangle and discuss about the fire fighting arrangements onboard a ship.
9. Explain various situations which lead to oil pollution in a crude oil carrier. Mention what are the precautionary measures available to reduce such pollutions.