

# INDIAN MARITIME UNIVERSITY

(A Central University, Government of India)

## END SEMESTER EXAMINATION DEC' 17/ JAN'18

**Programme:** B.Sc. (Nautical Science)

**Semester:** VI

**Subject Name:** Marine Engg. Automation and Control Systems

**Subject Code:** UG21T2606

**Date:** 02.01.2018

**Maximum Marks:** 70

**Time:** 3 Hours

**Pass Marks:** 35

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**Note: Answer any Seven Questions out of Nine Questions. All questions carry equal marks (7 x 10 marks each=70 Marks)**

- 1)** Sketch a Two ram Electro Hydraulic Steering Gear including Hunting gear arrangement - **10 marks**
  - 2)** Explain how the rudder is moved to desired position. -**10 marks.**
  - 3)** Sketch a four ram electro hydraulic steering gear system. - **10 marks.**
  - 4)** What is single failure criteria with reference to steering gear systems, and to which type of vessels does this apply, Give an example of a suitable method used. - **10 marks**
  - 5)** State the rules pertaining to steering gears -**10 marks**
  - 6)** Sketch and explain the working of automatic constant tension mooring Winch. -**10 marks**
  - 7)** With aid of a Sketch describe the working a gear wheel pump. -**10 marks**
  - 8)** State the precautions to be taken before and during ships encounter with rough weather, with reference to steering, main propulsion plant, and engine room equipment. - **10 marks**
  - 9) a.** Sketch a Vapour compression system for refrigeration - **5 marks**  
**b.** What are some of the Desirable properties of a primary refrigerant - **5 marks.**
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