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***B.Tech. Degree IV Semester Examination in Marine Engineering
May 2018***

**MRE 1405 MARINE AUXILIARY MACHINERY I
(2013 Scheme)**

Time : 3 Hours

Maximum Marks : 100

(5 × 20 = 100)

- I. (a) Sketch and describe a sea water cooling system for a motor vessel. (10)
 (b) Explain the Jacket cooling water system for a marine diesel engine with the help of a neat sketch. (10)
- OR**
- II. (a) Explain in detail the preparations and procedure for taking Fuel oil bunker in a ship. (15)
 (b) Mention why fuel oil sampling while bunkering is considered important. (5)
- III. (a) Sketch and describe the operation of an evaporator type of fresh water generator. (15)
 (b) What are the safety features provided in a main air compressor? (5)
- OR**
- IV. (a) What are the uses of compressed air onboard a ship? (15)
 (b) Briefly explain the care and maintenance required for centrifugal pumps. (5)
- V. (a) Sketch and describe the function of a screw down non-return valve. (15)
 (b) What are the different types of packing materials used onboard a ship? (5)
- OR**
- VI. Write short notes on the following. (4 × 5 = 20)
 (i) Quick closing valves.
 (ii) Valve actuators.
 (iii) Duplex filter.
 (iv) Priming of filters.
- VII. (a) Describe the job requirements of a watch keeping engineer. (10)
 (b) Explain construction of a Plate type heat exchanger. (10)
- OR**
- VIII. (a) Sketch and describe a shell and tube of heat exchanger. (15)
 (b) Briefly explain the function of an Electro-Hydraulic windlass. (5)
- IX. (a) Sketch and describe the operation of a self de-sludging type of purifier. (15)
 (b) Explain why the fuel oil must be purified before use. (5)
- OR**
- X. (a) Explain the precautions to be taken before entering a fuel oil tank. (15)
 (b) What are the merits and demerits of using Emulsified fuel in marine engines? (5)