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***B.Tech. Degree V Semester Examination in
Marine Engineering December 2018***

**MRE 1505 MARINE AUXILIARY MACHINERY II
(2013 Scheme)**

Time: 3 Hours

Maximum Marks: 100

(5 × 20 = 100)

- I. (a) Explain the function of a safematic steering gear with the help of a suitable diagram. (12)
(b) Sketch and describe the arrangement for fitting the stern tube in a ship. (8)
- OR**
- II. (a) Sketch and describe the hunting action of a variable delivery pump for steering gear. (12)
(b) What are the different stresses developed in the shafting system of a propulsion plant? (8)
- III. (a) Explain the procedure for removal and refitting of a keyless propeller. (15)
(b) What are the bad weather precautionary measures taken on board? (5)
- OR**
- IV. (a) Write short note on following: (10)
(i) Maintenance of Engine room stores
(ii) Maintenance of lifting gears in Engine room
(b) Explain the preparations required for dry-docking of a Vessel. (10)
- V. (a) Explain critical speed of an engine? What is its relevance? List all precautionary measures required to be taken while running the engine near to the critical speed. (10)
(b) What are the acceptable noise levels at various locations of a Vessel? Explain how to reduce the of noise levels in a compartment. (10)
- OR**
- VI. (a) What are the reasons for vibration of a diesel engine and how to reduce its effect? (10)
(b) Explain various factors affecting torsional vibration of a shafting system. How to reduce its effect? (10)
- VII. (a) Sketch and describe an oily water separator complying with requirements of Annex. I of Marpol 73/78. (15)
(b) Explain the conditions to be satisfied for pumping out engine room originated bilge using this oily water separator. (5)
- OR**
- VIII. (a) Sketch and describe a biological type Sewage treatment plant complying with requirements of Annexure IV of MARPOL 73/78. (10)
(b) Explain the use of incinerator onboard. (10)
- IX. (a) Explain the importance of lubricating oil analysis. How it is used as a diagnostic maintenance tool? (10)
(b) What are the additives used for improving the properties of lube oil? (10)
- OR**
- X. (a) Explain principle of Hydrodynamic lubrication. (10)
(b) How to maintain the quality of lube oil used in a large diesel engine. (5)
(c) What is the importance of maintaining the correct value of bearing clearance? How this can be ensured? (5)