

INDIAN MARITIME UNIVERSITY
(A Central University, Govt. of India)

May/June 2015 End Semester Examinations

SEMESTER – V, B.TECH (MARINE ENGINEERING)

MARINE AUXILIARY MACHINES - I (T 1505)

Date: 18.06.2015

Time: -3 Hrs

Max. Marks: 100

Pass Marks: 50

PART – A **(3 x 10 = 30 Marks)**
(Compulsory Questions)

1. a) List out various pumping systems found in the engine room of a motor vessel.
State their use . **(3)**
- b) State 3 major precautions to be taken during Bunkering. **(3)**
- c) Describe the cleaning procedure for a duplex filter. **(3)**
- d) State the starting procedure of a Centrifugal pump. **(3)**
- e) List out the safety fittings on main air compressor. **(3)**
- f) Provision provided to take the expansion of a tube stack for shell and tube type
Heat Exchanger. **(3)**
- g) Describe hunting action of steering gear system. **(3)**
- h) Briefly describe the shafting system fitted to a single screw motor vessel. **(3)**
- i) Describe safety cut outs provided to Oily water separator, when Oil Content
Monitor (OCM) indicates above normal reading. **(3)**
- j) Explain purpose of Settling and Service tanks in a fuel system of diesel
propulsion merchant ship. **(3)**

PART – B **(5 x 14 = 70 Marks)**
Answer any five of the following

2. a) List out differences between Positive Displacement and Rotodynamic pumps. **(4)**
- b) Sketch and describe operation of a, Screw Type Pump **(10)**

3. a) What are the benefits of producing fresh water on board ship? (3)
- b) Sketch and describe Flash type fresh water generator which uses engine cooling water for producing fresh water. (11)
4. a) Sketch and describe Plate type Heat Exchanger (10)
- b) How will you know its performance is dropping and how to improve the same. (4)
5. a) List out equipments available on board to prevent water pollution. (4)
- b) Sketch and describe operation of Biological Sewage treatment plant. (10)
6. a) Sketch and describe Four Ram hydraulic steering gear (9)
- b) Explain Safety arrangements provided to such steering gear system in accordance with SOLAS redundancy concept. (5)
7. a) What is the necessity for Dry Docking a vessel? (4)
- b) List out various inspections to be carried out and recorded during Dry Docking of a vessel. (10)
8. a) Why Stabilizers are used for sea going vessels? (4)
- b) Explain the Fin Type Stabilizer with the help of diagram. (10)
9. a) Sketch and describe Two Stage air compressor. (10)
- b) Explain reasons of High Carbon deposit on discharge valves (4)
