

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

**B.Tech (Marine Engineering) - Semester V**  
December 2015 End Semester Examinations

**Marine Auxiliary Machines – I**  
Subject Code:UG11T2505/UG11T1505

Time: 3 hrs  
Date: 21.12.2015

Max Marks-100  
Pass Marks-50

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**Part-A (10x3=30 Marks)**

**Compulsory Question**

- 1) (a) Name Five Machineries placed in E/R bottom platform and its purposes.
- (b) What is bunker delivery note? Who issues to whom and why?
- (c) Illustrate the differences between a strainer and filter.
- (d) How to increase the oil retention time in purifier and its effects?
- (e) State the safety fittings on main air bottle with its respective purpose.
- (f) How thermal expansion of tubular heat exchanger's tube stack is taken care?
- (g) Why E/R ventilation system is required on ship and how it is done?
- (h) What is rudder drop and jumping clearance?
- (i) Name different types of dry docking and explain the purposes of dry docking a ship.
- (j) What is MARPOL convention and its application on board?

**Part B (5x14=70 Marks)**

**Answer any five of the following.**  
**All questions carry equal marks.**

- 2) What is double acting positive displacement pump?  
Sketch and label an E/R bilge line of a sea going ship. Which type of line valve s are used in the system and why?
- 3) How to start Main air compressor manually on board? Explain the safety devices fitted on compressor and in its system with respective objective.
- 4) What is viscosity of oil and its dimension? How does it maintain in main engine fuel system? Draw a fuel supply system for a long two stroke engine and explain.

- 5) What are the advantages of a plate type cooler over a shell & tube type cooler? Explain how the plates are cleaned and assemble up.
- 6) a) How a gravity disc size of a purifier is defined? What is over flow of oil in purifier and the reasons of it?  
b) How drive electrical motor power is transmitted to purifier vertical shaft? Explain with diagram.
- 7) What is the purpose of a steering gear? Explain Rotary vane steering gear system with a diagram. What is non follow up control system of steering gear and when it is use?
- 8) a) What is main engine crank shaft deflection? How this deflection is measured and its use?  
b) What is intermediate shaft in marine propulsion? Why this shaft is provided? Explain how does this shaft is supported with its lubrication system.