

**Indian Maritime University**  
(A Central University, Govt of India)  
June-July 2019 End Semester Examinations  
**B. Tech (Marine Engineering)**  
Semester-V

**Marine Auxiliary Machines-I (UG11T1505 / UG11T2505)**

Date:19-7-2019

Max Marks:100 Marks

Time: 3 Hrs

Pass Marks:50 Marks

**PART-A** **Marks: 10x3=30**  
**(All questions are compulsory)**

- 1.(a) What is the colour code for Fuel Oil, Sea Water, Fresh Water, Fire Hydrant ,Luboil ,Air, Steam Pipes.
- (b) Explain briefly the effect of cavitation in centrifugal pump.
- (c) Why ER ventilation system is required on ship and how it is done?
- (d) How thermal expansion of tubular heat exchanger 's tube stack is taken care of?
- (e) As per Marpol ,what is the discharge criterion for machinery space bilge water.
- (f) What are the importance of L.O. Testing ?
- (g)What are the care and maintenance of steering gear plant?
- (h) What do you mean by Propeller Drop?
- (i) What are the methods of dry docking of ships.
- (j) What kind of brake is fitted in engine room crane?

**PART-B** **Marks: 5x 14=70**  
**(Answer any FIVE of the following)**

- 2.(a).Sketch and describe Bilge System fitted in a cargo ship. (7Marks)
- (b) What is the safe Bunkering procedure? (7Marks)
- 3.(a) State the difference between strainers and filters (7 Marks)
- (b) Explain the working of Gear Pump with a neat sketch. (7 Marks)

- 4.(a) Explain the purpose of volute casing in centrifugal Pump. State the function of impeller for the centrifugal pump. What are the maintenance required for centrifugal pump. (7 Marks)
- (b) Sketch and describe an Air bottle with the mountings. (7 Marks)
- 5.(a) Explain a reverse osmosis plant used to produce fresh water. (7 Marks)
- (b) What are the materials used for tubular and plate type heat exchanger. What are the advantages and disadvantages of plate type cooler. (7 Marks)
- 6.(a ) Explain the working of Oily Bilge Separator with a simple diagram. (7 Marks)
- (b) What is the purpose of fuel oil settling tank on board? What are the precautions for cleaning fuel oil tanks . (7 Marks)
- 7.(a) Explain the principle of Hele-shaw pump with a simple diagram. (7 Marks)
- (b) Sketch and Describe 2 Ram Steering Gear with a simple diagram. (7 Marks)
- 8.(a) What are the stresses in Tail End, Intermediate and Thurst Shaft. (7 Marks)
- (b)What are the anchor chain, its testing and survey requirements. (7 Marks)