

**GANPAT UNIVERSITY****B. Tech. Semester: IV Marine Engineering****Regular Examination April – June 2015****2MR407- Marine Auxiliary Machines I****Time: 3 Hours****Total Marks: 70**

- Instruction:** 1) Attempt all Questions.  
 2) Assume suitable data if necessary.  
 3) Figure to the right indicates full Marks.  
 4) Start new Question on New Page.

**Section - I**

- Que. – 1** a) Describe Reverse Osmosis principle. What are the methods of distillate water treatment? Why it is required? 6  
 b) What are the Properties of marine fuel oil? 6

**OR**

- Que. – 1** a) Describe with sketch High Vacuum Evaporator used on ships for producing fresh water from sea water. 6  
 b) Describe the fuel oil treatment system with sketch. 6  
**Que. – 2** a) Describe with sketch plate type heat exchangers. What are its advantages? 6  
 b) What is purifier? Describe centrifugal purifier with sketch. Why different gravity discs are used? 5

**OR**

- Que. – 2** a) Explain self cleaning purifier with sketch. 6  
 b) Name the types of heat exchangers used in marine diesel machinery installations. Describe shell and tube type heat exchangers. 5  
**Que. – 3** What are the precautions taken before, during and after the bunkering of heavy fuel oil? 12

**Section – II**

- Que. – 4** a) Write down various safeties involved in the pipes carrying fuel & flammable liquids. 6  
 b) What do you understand by pump characteristics? 6

**OR**

- Que. – 4** a) Write down various types of marine filters and explain any one in detail 6  
 b) What are advantage & disadvantage of Reciprocating pump? 6  
**Que. – 5** a) List down difference between Reciprocating & Rotary compressor. 6  
 b) What do you understand by automation of pump, why it is required? 5

**OR**

Que. - 5 Briefly explain any three (3) of following piping system

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- a. Fire main
- b. Deck water spray system
- c. Co2 system
- d. High expansion foam
- e. Dry powder System

Que. - 6 What do you understand by Main Engine cooling system on board ship? 12  
Explain with the help of drawing

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END OF PAPER