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10MR65

**Sixth Semester B.E. Degree Examination, June/July 2015**

**Marine Auxiliary Machinery - II**

Time: 3 hrs.

Max. Marks: 100

**Note: Answer FIVE full questions, selecting  
at least TWO questions from each part.**

**PART – A**

- 1 a. Explain marine vapour compression system. (10 Marks)
- b. Explain the environmental and safety properties of refrigerant. (05 Marks)
- c. Write the chemical formula and chemical name for the following designated refrigerants :  
i) R<sub>14</sub>    ii) R<sub>113</sub>. (05 Marks)
- 2 a. Give the design considerations of compressors. (10 Marks)
- b. Sketch the thermostatic expansion valve as fitted in refrigerant system labeling the component parts. (10 Marks)
- 3 a. With a neat sketch explain how temperature is maintained in different chambers of marine refrigeration system? (08 Marks)
- b. Explain the process of purging marine refrigeration system. (05 Marks)
- c. Explain any 2 refrigerant leak detecting equipments. (07 Marks)
- 4 a. Explain the process of charging refrigerant for marine refrigeration system. (10 Marks)
- b. List the troubleshooting steps taken if the compressor “ short cycle” on low pressure cut out. (10 Marks)

**PART – B**

- 5 a. Explain the need of marine air conditioning. Explain marine air conditioning circuit. (12 Marks)
- b. With reference to psychrometry charts.  
i) What is relative humidity?  
ii) What is Dew point?  
iii) What is wet bulb temperature?  
iv) What is dry bulb temperature? (08 Marks)
- 6 a. Explain marine air conditioning systems with appropriate sketches. (12 Marks)
- b. Explain the ventilation system of engine room. (08 Marks)
- 7 a. Explain the process of obtaining heavy residual fuel used in marine machinery. (10 Marks)
- b. Explain residual fuels and emulsified fuels with its merits and Demerits. (10 Marks)
- 8 a. Write the ideal properties of lubricant oil used in marine field. (10 Marks)
- b. What are the effects of adding additives to lubricating oil? (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and/or equations written eg, 42+8 = 50, will be treated as malpractice.