

# Marine Auxiliary Machinery-II VTU CBCS Question Paper Set 2018



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### Sixth Semester B.E. Degree Examination, June/July 2016 **Marine Auxiliary Machinery - II**

Time: 3 hrs. Note: Answer FIVE full questions, selecting at least TWO questions from each part. Max. Marks: 100

### PART - A

1	a.	Explain Marine	Vapour absorption system with a neat labeled sketch.	(10 Marks)
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(05 Marks) Explain the thermodynamic properties of refrigerant.

Write the chemical formula and chemical name for the following designated refrigerants. (05 Marks) i) R<sub>113</sub> ii) R717

Sketch the thermostatic expansion valve as filter in refrigeration system, labeling the 2 components parts. State where the valve is located and its function? (15 Marks)

(05 Marks) Write the classification of compressors.

Explain the maintenance be the carried out in Marine refrigeration system. (12 Marks) 3

Explain any 2 refrigerant leak detecting equipment. (08 Marks) b.

Explain the process of charging refrigerant for Marine refrigeration system. (10 Marks) a.

What factors are to the considered while selecting brine? (10 Marks) b.

### PART - B

Explain need of Marine air conditioning? Explain Marine air conditioning circuit. (12 Marks)

With references to pyschometry charts

i) What is relative humidity?

ii) What is Dew point?

iii) What is wet bulb temperature?

(08 Marks) iv) What is dry bulb temperature?

Explain marine air conditioning systems with appropriate sketches. (12 Marks) (08 Marks)

Explain the ventilation system of engine room.

Explain the treatment of fuels for combustion in Marin I.C Engine. (12 Marks) 7

Explain resident fuels and emulsified fuels with its merits and Demerits. (08 Marks) b.

(10 Marks) Explain the types of lubricants used in marine fuild. 8 a.

Write the chemical properties of lubricant oil.

(10 Marks)

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# Sixth Semester B.E. Degree Examination, June/July 2017 Marine Auxiliary Machinery – II

Time: 3 hrs. Max. Marks: 100

Note: Answer any FIVE full questions, selecting atleast TWO questions from each part.

### PART - A

1	a.	Explain the principle and components of basic refrigeration system with neat ske	etch.
	b.	Write the properties of refrigerant and effects on environment.	(12 Marks) (08 Marks)
2	a. b.	Draw and explain thermostatic expansion valve. Explain high pressure cut off with neat sketch.	(10 Marks) (10 Marks)
3	a. b.	Explain indication, remedy for air in the system and moisture in the system. Explain the charging procedure of refrigeration system with neat sketch.	(10 Marks) (10 Marks)
4	a. b.	Draw the layout of brine distribution system.  Explain the factors affecting the total load on a cargo refrigerating plant.	(10 Marks) (10 Marks)
		PART – B	
5	a. b. c.	Explain the necessity of air conditioning on board ships.  Draw and explain ventilation arrangement of CO <sub>2</sub> room.  Draw and explain ventilation arrangement of battery room.	(06 Marks) (07 Marks) (07 Marks)
6	a. b. c.	Explain detuners with examples. Explain dampers with examples. Explain barred zone range.	(06 Marks) (06 Marks) (08 Marks)
7	a. b.	Draw the fuel oil treatment system diagram from bunker tank to fuel injector. Explain any 10 fuel oil properties.	(10 Marks) (10 Marks)
8	a. b.	Explain the types of lubrications. Explain any 8 terminology used in lubrication system.	(12 Marks) (08 Marks)

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**USN** Sixth Semester B.E. Degree Examination, Dec.2017/Jan.201 Marine Auxiliary Machinery - II Max Marks:100 compositive draw diagonal cross lines on the remaining blank pages. Time: 3 hrs. Note: Answer any EIVE full questions, selecting atleast TWO questions from each part. PART - A With a neat labeled sketch, explain Marine Vapour Compression System. (10 Marks) (06 Marks) List the different properties of an ideal refrigerant. 1 a. Write the chemical formula and chemical name for following refrigerant: (04 Marks) c. ii) R717. i)  $R_{22}$ With a neat sketch of Thermostatic expansion valve, Explain its working. (10 Marks) (08 Marks) Explain the various safety devices on the refrigeration system. 2 (02 Marks) b. What are the safties on a compressor? (08 Marks) Explain the process of pressure testing on a retrigeration plant. Explain the two different process of lube oil charging to a refrigeration compressor. 3 (08 Marks) Any revealing of identification, appeal to evaluated units of experience (04 Marks) Name two refrigerant leak detection devices. (10 Marks) Explain the method of Air circulation inside cargo hold. (10 Marks) Explain the operation of starting and stopping of a reefer plant. 4 <u>PART – B</u> (10 Marks) Explain with the neat sketch, the Marine Air Conditioning Unit. (06 Marks) With a neat sketch, explain ventilation of CO2 room. 5 COMME AME AMANCO (04 Marks) Define Comfort zone. What are the criteria for a Comfort zone? Explain the different types of Air conditioning system, with near labeled sketches. (12 Marks) a. With reference to psychrometry chart: ii) Wet bulb temperature. (0 b. Define Relative humidity (08 Marks) iv) Dew point temperature. iii) Dry bulb temperature (08 Marks) With a near time diagram, explain the process of treatment of fuel for marine I.C engine. 7 a. Amportant Aces (10 Marks) List and explain the properties of an Ideal Lubricant oil for marine use. (05 Marks) Name the different types of Lubricants with their uses. 8 (05 Marks) c. Explain the process of Hydrodynamic Lubrication with example.

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## 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)
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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)

Sketch the thermostatic expansion valve as fitted in refrigerant system labeling the component parts.

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)

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 physchometry 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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