

INDIAN MARITIME UNIVERSITY

(Central University, Government of India)

May/June 2016 End Semester Examinations

B.Tech. (Marine Engineering)

Sixth Semester – Marine Auxiliary Machines - II (UG11 T 1604/ T 2604)

Date : 16.06.2016

Max Marks: 100

Time: 3 Hrs

Pass Marks: 50

Part-A

(3 x 10 = 30 Marks)

Compulsory Question

1. a) What are the components of a simple vapor compression refrigeration system ?
- b) What is purging of air from the refrigeration system and normally from which component it is done ?
- c) What is 'Resonance' condition of a running shaft?
- d) What is a residual fuel?
- e) State the different types of bearings used for marine machineries.
- f) What is relative humidity? How is it calculated?
- g) How temperatures different takes place across the TEV.
- h) What are the parameters required to be checked for an ideal air conditioning system.
- i) What are the five problems attributed to vibration?
- j) What are the types of lubrication.

Part - B

(5 x 14 = 70 Marks)

Answer any FIVE of the following questions

2. i) Describe Air condition plant for accommodation on board a ship with a simple sketch indicating the various fittings.
ii) Discuss any three important design consideration for a) Battery room b) CO2 room ventilation. (8+6)
3. Discuss in detail the source of noise and noise suppression method adopted on board a ship. (14)
4. Explain the treatment of fuels for combustion in I.C engines with a simple line diagram. (14)
5. Sketch and describe a typical domestic refrigeration plant with control for automatic operation. State the specific temperatures maintained in different rooms. (10 + 4)
6. Give causes for the following troubles in an air conditioning plant:
 - a. Compressor short cycles
 - b. Discharge pressure too high
 - c. Suction pressure too high
 - d. Compressor fails to start(4+3+3+4)
7. a) Discuss in details five important properties of a good refrigerant and propose a refrigerant you would choose for your new vessel.
b) Discuss in details five important properties of good lubricating oil for trunk piston engines. How the lubricating oil quality my got deteriorated? (7 + 7)

8. What is critical speed of a running engine? Where does it occur? How the critical speed can lead to engine failure. What precaution needs to be taken if engine in on critical speed. (3+3+4+4)

9. What are the causes of vibrations and sequence of analysis carried out in detecting the same? (14)
