

INDIAN MARITIME UNIVERSITY
(A Central University, Government of India)

May/June 2017 End Semester Examinations
B. Tech (Marine Engineering – Seventh Semester)

Advanced Marine Technology
UG11T 2704 /UG11T1804

Date: 19.06.2017
Time: 3 Hrs

Maximum Marks : 100
Pass Marks : 50

PART – A

10X3=30 Marks

(All questions are compulsory)

1. (a) With respect to gas carrier reliquefaction system, what is indirect cycle?
- (b) Expand the following abbreviations:
BLEVE, OCIMF, SIGTTO, NPSH, MSDS, ISGOTT
- (c) Define LFL and UFL.
- (d) With reference to chemical tankers, what is polymerisation?
- (e) Explain hydrate formation on gas carriers.
- (f) List various types of inert gas systems that are commonly used on chemical carrier ships.
- (g) Describe briefly 'Fully Pressurised Gas Carrier.'
- (h) What is Threshold limit value?
- (i) What is an IAPP certificate?
- (j) What is NO_x Technical file?

PART – B

5X14=70 Marks

(Answer any 5 of the following)

2. With reference to a gas carrier,
 - (a) Draw a labelled flow diagram of an inert gas generator. (7 Marks)
 - (b) Explain how inert gas of acceptable standard is produced by it. (7 Marks)

3. With reference to a gas carrier,
- (a) Sketch a labelled diagram of compressor and electric motor room for reliquefaction plant. (6 Marks)
 - (b) Why deepwell or submersible pumps are used for cargo discharge on gas carriers? (2 Marks)
 - (c) Explain the safety features of compressor and electric motor room for reliquefaction plant. (6 Marks)
4. With reference to an oil tanker,
- (a) Sketch a labelled diagram of a pressure-vacuum valve. (4 Marks)
 - (b) What is purpose of fitting pressure-vacuum valve? (2 Marks)
 - (c) What are the set pressures and their limitations for the pressure-vacuum valve? (3 Marks)
 - (d) Explain the working of a pressure-vacuum valve. (3 Marks)
 - (e) Write a brief description of important checks and maintenance to be done on of a pressure - vacuum valve. (2 Marks)
5. (a) Construct a block diagram, in flow chart form, to show the sequence of operations necessary for the starting of a main propulsion diesel engine on bridge control. (6 Marks)
- (b) List and explain the requirements to be fulfilled to operate machinery space of a vessel in unmanned condition? (8 Marks)
6. (a) Draw a schematic (block) diagram showing the concept of an intelligent engine. (5 Marks)
- (b) Explain in detail the condition monitoring system incorporated in an intelligent engine. (9 Marks)
7. (a) Explain additional safety measures for bulk carriers. (8 Marks)
- (b) Draw a labelled sketch of typical transverse cross-section in way of a cargo hold of a bulk carrier. (6 Marks)

8. (a) Explain about various problem areas of a Ro-Ro ship from safety and Stability point of view. (7 Marks)
- (b) Chemical tanker cargoes may be divided into four main groups. List them and explain briefly about each. (4 Marks)
- (c) Enumerate the general types of chemical carriers and explain briefly about each. (3 Marks)
