

**INDIAN MARITIME UNIVERSITY**  
(A Central University, Government of India)  
**End Semester Examinations- June-July 2019**  
**Semester – VII**  
**B.Tech (Marine Engineering)**  
**Advanced Marine Technology (UG11T2704/T1804)**

---

Date: 17-07-2019

Maximum Marks: 100

Time: 3 Hrs

Pass Marks: 50

---

**Part – A**

**(10 X 3 = 30 Marks)**

**Answer ALL Questions**

1. (a) Define – i) DMA (Dead Man Alarm) for Engine Room  
ii) Engineers Call
- (b) Why Glycol is used in LPG re-liquefaction system?
- (c) What are the safety devices used in LNG vessel boiler Boil-off gas pipe line system?
- (d) What are the safety devices fitted in LPG carrier electric motor room on deck?
- (e) Classify types of Chemical carriers.
- (f) What are the safety arrangements provided for cargo operation of Chemical carrier?
- (g) Differentiate between PV breaker and PV valve.
- (h) What is COW?
- (i) How NO<sub>x</sub> is produced? and How NO<sub>x</sub> can be controlled?
- (j) What is IAPP Certificate?

**Part– B**

**(5X14 =70 Marks)**

**Answer any FIVE questions from the following**

2. a) What are the requirements for UMS operation of a Modern Merchant Vessel? (7)
- b) Explain clearly on LPG tank gas freeing operation with a neat sketch. (7)
3. Draw and explain how LNG boil-off gas is used for a boiler for LNG Vessel main propulsion? (14)

4. a) Discuss fixed cargo piping arrangements in pressurized cargo tank type LPG tankers. (7)  
b) Draw a midship section of Car carrier and label the parts. (7)
5. a) Describe briefly on Inert Gas system of Crude Oil carrier with neat diagram. (10)  
b) What is the purpose of "Scrubber" and "Deck Water Seal" in IG System? (4)
6. a) Differentiate between Oil tanker and Chemical tanker. (4)  
b) Explain with neat sketches on various types of pumps used in Chemical Carrier. (10)
7. a) Discuss Safety and Stability considerations of Bulk Carrier. (7)  
b) What are the latest means of Emission Control of modern ships?  
(7)
8. Write short notes on following (14)
  - a) Common Rail System
  - b) Condition Monitoring
  - c) Intelligent Engines
  - d) EGR