

# Indian Maritime University

( A Central University, Govt of India)

May-June 2018 End Semester Examinations

## B. Tech (Marine Engineering)

Semester-VII/VIII

### Advanced Marine Technology (UG11T2704/ UG11T1804)

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Date: 17.06.2018

Max Marks:100 Marks

Time: 3 Hrs

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Pass Marks:50 Marks

#### PART A

Marks: 10 X 3 = 30

(All Questions are compulsory)

1)

- a. What are essentials of a Bridge Control system.
- b. Expand following abbreviations a) MARVS b) SIGTTO c) BLEVE
- c. What is 3G type Liquefied Gas Carrier, as per IGC code?
- d. Why Glycol used in LPG re-liquefaction system?
- e. Classify types of Chemical carriers.
- f. Differentiate between PV breaker and PV valve.
- g. What cargoes are normally carried in a bulk carrier and what are the hazards.
- h. Explain NOx Technical file.
- i. Briefly discuss condition monitoring system.
- j. What is Ullage reference to tankers?

#### PART B

Marks: 5 X 14 = 70

(Answer any 5 of following 7 questions)

- 2 (a) What are the requirements for UMS operation of a modern Merchant vessel? (8 marks)
- (b) What are the modern developments in a Marine diesel engine?(6 marks)
- 3 (a) Sketch and describe cross section of LNG cargo tank and label all important elements. (10 Marks)

- (b) List different types of cargos carried on Gas carriers (4 Marks)
- 4 (a) Sketch and describe re-liquefaction arrangement on fully refrigerated LPG carrier. (10 Marks)  
(b) List all alarms and safety devices on above system (4 marks)
- 5 (a) Differentiate between Oil tankers and Chemical tankers. (4 marks)  
(b) Explain with sketch various types of pumps used in Chemical tankers. (10 Marks)
- 6 (a) Describe "free flow cargo handling system" for crude oil tanker (7 Marks)  
(b) Discuss safety and stability considerations of bulk carriers (7 Marks)
- 7 (a) What are latest means of exhaust emission control of modern ships (10 Marks)  
(b) Discuss advantages and disadvantages of common rail system (4 Marks)
- 8 Sketch and explain the Inert Gas System as fitted in an Oil Tanker. What all safety devices are associated with such a system and elaborate their functions. (14 Marks)