

Indian Maritime University
(A Central University, Govt of India)
End Semester Examinations – Sept 2025
Programme Name: DNS
Semester: 2
Subject Code: UD11T6205
Subject Name: CARGO WORK II

Date: 13.09.2025

Max Marks: 70

Duration: 03 Hrs

Pass Marks: 35

General Instructions

- (i) All Sections (A, B & C) are to be attempted.
- (ii) Options, if any, are specified in respective section.

Section A

Ten MCQs/Fill in the Blanks of 01 Mark each – Choose the correct answer as applicable.

1. The Ullage Temperature Interface (UTI) device is used to measure:
 - A) Static electricity in cargo tanks
 - B) Cargo levels, temperature, and interface
 - C) Oxygen levels in the tank
 - D) Ballast water composition
2. Purging of tanks means increasing its O₂ level above -----.
3. LNG Carriers maintain cargo temperatures at _____ C.
4. What is the purpose of a Pressure-Vacuum (PV) valve on a tanker?
 - A) To prevent overflow during loading
 - B) To control temperature inside the cargo tank
 - C) To regulate pressure changes inside the tank
 - D) To allow continuous cargo flow
5. UTI gauge gives an intermittent alarm on detection of ----- interface.

6. Which type of tank coating is most suitable for aggressive chemical cargoes?

- A) Epoxy
- B) Zinc silicate
- C) Bitumen-based coatings
- D) Stainless steel

7. Which of the following is not a major hazard associated with gas cargoes?

- A) Spontaneous combustion
- B) Brittle fracture
- C) Vapor pressure build-up
- D) Higher load density

8. BLEVE is an acronym for _____.

9. A loading rate of _____ is generally considered safe for loading oil cargo into inerted tanks.

10. Why should cargo tank temperatures be monitored during a cargo watch?

- A) To detect cargo expansion or contraction
- B) To prevent crew members from entering the tanks
- C) To determine the ship's position
- D) To ensure proper ballast operations

Section B

Five Questions of 02 Marks each

- 11. What safety precautions should be taken during cargo operations?
- 12. Classify LNG carriers based on the Pressurisation & Temperature system?
- 13. What is the function of a nitrogen generator on a chemical tanker?
- 14. Explain what is ISGOTT?
- 15. What are cofferdams and their importance on oil tankers?

Section C

Answer any five Questions of 10 Marks each.

- 16. Describe the procedures and safety measures involved in taking over a cargo watch on an oil tanker.
- 17. Describe Inerting a cargo Tank by the displacement method?
- 18. Discuss the hazards of tank cleaning operations on chemical tankers and the safety precautions to be followed.

19. Explain with diagram function of Scrubbing Tower in the Inert Gas System used on Tankers?

20. Compare and contrast the working principles of centrifugal pumps and deep-well pumps used on oil tankers.

21. Draw and Explain Flammability diagram

Define Hazardous cargo, Flash point and Vapour Pressure.

22. a) Explain the Hull Sensor Monitoring System (HSMS) and requirements?
b) Explain the Tankscope Gas Detector used on tankers?

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