

Indian Maritime University
(A Central University, Govt. of India)
End Semester Examinations – June 2026
Programme Name: DNS
Semester: II
Subject Code: UG11T6205
Subject Name: CARGO WORK II

Date: 05.06.2026

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.
- (iii) Non-programmable scientific calculator is permitted

Section A

Ten MCQs of 01 Mark each – Choose the correct answer as applicable.
10 X 1 = 10 Marks

1. What is the primary purpose of a "Cofferdam" on a tanker?
 - A) To store extra ballast water.
 - B) To act as a void space separating cargo tanks from non-hazardous zones like the engine room.
 - C) To collect oil leaks from the cargo pumps.
 - D) To increase the ship's buoyancy during heavy weather.

2. Where are "Master Valves" usually located?
 - A) At the very end of the stripping line.
 - B) Where the main cargo lines enter or leave the pump room or tank section.
 - C) Inside the sea chest only.
 - D) On the bridge for emergency use.

3. The primary safety device preventing cargo vapours from returning to the machinery space is the:

- A) P/V Valve
- B) Scrubber
- C) Deck Seal
- D) Mast Riser

4. The P/V Breaker is filled with:

- A) Oil
- B) Hydraulic fluid
- C) Liquid nitrogen
- D) Seawater or Antifreeze/Water mix

5. Which document lists the specific chemicals a vessel is allowed to carry?

- A) Certificate of Fitness (CoF)
- B) Bill of Lading
- C) Safety Management Certificate
- D) Cargo Record Book

6. Why is Nitrogen preferred over Boiler Flue Gas for chemical tankers?

- A) It is cheaper to produce.
- B) It is cleaner and does not contaminate sensitive chemical cargoes.
- C) It is heavier than air.
- D) It smells better.

7. 'OS' categories of cargo pertain to

- a. Chemical tankers
- b. Crude oil tankers
- c. Gas tankers
- d. All of the above

8. Segregated ballast means

- a. Ballast which is carried in cargo tanks
- b. Ballast which is totally separated from the cargo and fuel system
- c. Ballast which is treated with chemicals
- d. Ballast which is left untreated

9. With increase in the temperature of the cargo, following changes are expected in the cargo

- a. Volume will increase
- b. Volume will decrease
- c. Weight will increase
- d. Weight will decrease

10. Reciprocating pump is used for discharging large quantities of oil in bulk
- True / False

Section B

Five Questions of 02 Marks each

05 X 2 = 10 Marks

11. Define Static Electricity
12. Define Loadicator
13. List any 4 types of tank coatings in Chemical Tankers.
14. Explain 'High Level' and 'Overfill Alarm' on crude oil tankers.
15. List the portable gas detecting instruments found onboard an oil tanker?

Section C

Five Questions of 10 Marks each.

05 X 10 = 50 Marks

16. a. List the SOLAS mandatory alarms in the inert gas system (5 marks)

- b. A tank with constant surface area and 9 m deep has a volume of 8100 cu m. Oil of RD 0.88 at 20° C is to be loaded at 16° C. It is required to ensure that a minimum ullage of 0.18m is maintained during the voyage. If the maximum temperature during the voyage is 40° C and the correction factor for R D is 0.0005 per °C. Find the final ullage at load port (5 marks)

17. Enumerate Crude Oil Washing, its hazards, benefits and safety precautions (10 Marks)

18. Explain the purpose of IBC Code, various categories (X, Y, Z) of cargoes and the IMO ship types 1,2,3 for the carriage of chemical cargoes.

(10 Marks)

19. Describe taking over the cargo watch on oil Tanker ship and lists the information which the officer being relieved should pass to the relieving officer.

(10 Marks)

20. Explain the term "independent tank" and describe the three categories: type A, type B and type C (pressure vessels) as per IGC Code.

(10 Marks)

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