

Indian Maritime University
(A Central University, Govt of India)
End Semester Examinations – June 2026
Programme Name: B Sc (NS)
Semester: IV
Subject Code: UG21T6404
Subject Name: Cargo Work II

Date: 11.06.2026

Max Marks: 70

Duration: 03 Hrs

Pass Marks: 35

General Instructions

- (i) All Sections (A, B & C) are to be attempted.

Section A

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

- 1) The empty space provided between two bulkheads to separate cargo tanks from the engine room or accommodation is _____
2. What is the purpose of "Hermetic Locks" on a tanker?
 - a. To lock the pump-room doors during transit.
 - b. To seal the manifold valves.
 - c. To secure the anchor chain.
 - d. To provide a gas-tight opening for gauging and sampling without releasing vapour.
3. VECS meaning _____ -
4. "Purging" in the context of tanker operations is replacing the _____ rich atmosphere in a tank with inert gas until the hydrocarbon content is below the critical level.
5. Nitrogen gas is used in chemical tanker as _____
 - a) Intergas b) Space filler c) Breathing assistant d) odour remover
6. The "CHRIS Code" stand for _____ -
7. Which hazard is unique to gas carriers when cargo comes into contact with conventional ship steel?

a. Polymerization b. Auto-ignition c. Brittle Fracture d. Sedimentation

8. A "Fully Pressurized" gas carrier typically carries cargo at ambient temperature and _____ pressure.

9. When the ship loads the oil cargo is a lesser temperature and goes to a warmer area for discharging, the cargo weight changes (True / False)

10. When the temperature of an oil cargo increases, what happens to its density?

- a. The density increases.
- b. The density decreases.
- c. The density remains exactly the same.
- d. The density depends on cargo sediments.

Section B

Five Questions of 02 Marks each:

11. State the Hazards associated with chemical cargoes.

12. List the factors on which the maximum permissible loading rate depends on an Oil Tanker.

13. State the purpose of the IBC code.

14. State the full form of the following acronyms.

a) BLEVE b) MARVS

15. List any 4 entries into the deck log book.

Section C

Five Questions of 10 Marks each.:

16. 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 0.18 M 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. (10 marks)

17. Describe the components of an Inert gas system.

18. Explain the various categories NLS cargoes.

19. Explain the three categories of independent tanks: type A, type B and type C as per IGC Code.

20. Describe the main operating principle and features of

a) Centrifugal pumps

b) Deep-well pumps

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