

Indian Maritime University
(A Central University, Govt of India)

Mar/Apr/26 SE

Programme Name: DNS

Semester: I

Subject Code: UD11T6105

Subject Name: Cargo Work - I

Date: 17.03.2026

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.**

Section A

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

1. Openings or drains on the deck of the ship that allows water to drain off the deck and prevent accumulation

- A. Spars
- B. Scuppers
- C. Limbers
- D. Bilges

2. What is the primary purpose of lashing and securing cargo during transport?

- A) To prevent theft
- B) To prevent contamination
- C) To ensure stability and safety
- D) To reduce weight of cargo

3. A Watch/Luff Tackle has _____ number of sheaves.

- A) 3
- B) 4
- C) 5
- D) 6

4. SWL is calculated by dividing breaking stress with _____

- A) Breaking strength
- B) Proof Load
- C) Factor of Safety
- D) All of the above

5. Which of the following factor does sweat formation depend upon?

- A) Humidity
- B) Dew point
- C) Cargo temperature
- D) All of the above

6. Phenomenon in which solid bulk cargoes are abruptly transformed from a solid dry state to an almost fluid state:

- A. Liquidation
- B. Condensation
- C. Compression
- D. Liquefaction

7. A bulk cargo with a low angle of repose poses the risk of:

- a) A stable pile that remains in place regardless of ship movement
- b) The cargo becoming compact and reducing in volume
- c) Shifting during transport, potentially causing vessel instability
- d) The cargo forming a rigid structure that can't be unloaded easily

8. Stowage factor is the volume occupied by unit mass of cargo, expressed in _____

9. The effort applied to move a load is 15 units and the mechanical advantage is observed to be 3. Find the load.

- A) 5 units
- B) 3 units
- C) 15 units
- D) 45 units

10. MFAG stands for _____

Section B

Five Questions of 02 Marks each

11. State any two reasons for using dunnage

12. What is the main purpose of maintaining chain register on board ships?

13. What is Broken stowage?

14. What is the importance of checking bilge suction?
15. A weight of 10 tonnes is lifted by Gyn tackle, roved to disadvantage. Find the stress on the hauling part if the friction on each sheave is 10%.

Section C

Five Questions of 10 Marks each. All are compulsory.

- 16.A Explain the importance of cleaning holds before loading. (5 marks)
16.B How to clean holds after the discharge of a general cargo? (5 marks)
17.A What are the types of hatch covers onboard the vessel and tests to check for the water tightness of Hatch Cover? (5 marks)
17.B List any 5 precautions to be taken whilst operating hatch covers? (5 marks)
18. List the hazards associated with Loading and Unloading Coal Cargo and the Safety Precautions you will take as a cargo officer? (10 marks)
19.A
Inspections and checks to be done before loading dangerous goods? (5 marks)
19.B List the classes of cargo as per IMDG code? (5 marks)
20. A cargo hold 20m × 15m × 12m, having bale capacity of 3550 m³ and load density 5t/m² is to be filled so as to maximize the freight. (10 marks)

The cargo available is

Steel billets SF 0.5m³ /t
Cotton bales SF 2.8m³ /t

How much of each cargo will you load?

