

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

End Semester Examinations – December 2023

Programme Name: BSc (NS)

Semester: V

Subject Code: UG21T5504

Subject Name: SPECIALIZED CARGO HANDLING & STOWAGE

Date: 11.12.2023

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. What is the purpose of container shoes on a ship?
 - A) To improve container stability during transit
 - B) To measure the weight of containers
 - C) To prevent rust on container surfaces
 - D) To track the container's location
2. During loading, what action should be taken if some refrigerated cargo is found to be damaged or thawed?
 - A) Reject the entire cargo
 - B) Load it separately from the undamaged cargo
 - C) Ignore it as long as it's less than 10% of the total cargo
 - D) Continue loading as usual
3. What does "Reid vapor pressure" refer to in the context of oil cargoes?
 - A) The pressure inside cargo tanks
 - B) The pressure at which oil becomes flammable
 - C) The pressure exerted by oil vapors at a specific temperature
 - D) The pressure in the pumproom
4. Guidelines for the Prevention of pollution by Noxious Liquid Substance is stated in which of the below mentioned Annexes of MARPOL.
 - A) Annex II
 - B) Annex III
 - C) Annex I
 - D) Annex V
5. Which type of chemical tanker is designed for carrying the most hazardous cargoes?
 - A) Type 1

- B) Type 2
 - C) Type 3
 - D) Type X
6. What is the purpose of the IGC Code in the context of gas tankers?
- A) To regulate the temperature of cargo tanks.
 - B) To specify the design requirements for gas containment systems.
 - C) To control the use of deepwell pumps.
 - D) To provide guidelines for tank cleaning procedures.
7. Why is maintaining proper ventilation important on Ro-Ro ships?
- A) To reduce fuel consumption
 - B) To keep the crew comfortable
 - C) To prevent vehicle exhaust buildup
 - D) To improve cargo stowage
8. What does "DP" stand for in the context of Offshore Supply Vessels?
- A) Dynamic Positioning
 - B) Deepwater Port
 - C) Drilling Platform
 - D) Diving Procedure
9. What equipment will you use to measure the percentage by volume of hydrocarbon gas in cargo tanks on an oil tanker?
- A) Oxygen analyser
 - B) Explosimeter
 - C) Tankscope
 - D) Gascope
10. On which type of ships we find Oil Record Book Part 1?
- A) On Oil tanker
 - B) On Container Ships
 - C) On Bulk Carrier
 - D) All of the above

Section B

Five Questions of 02 Marks each

- 11. State the contents of CSC plate.
- 12. Define RVP & TVP.
- 13. Define Upper Flammability Limit.
- 14. What is MARVS?
- 15. List any four types of tanks in Gas Tankers.

Section C

Seven Questions of 10 Marks each of which any 05 questions to be answered.

- 16. (a) Explain Bay plan of container vessel. (5 Marks)
- (b) Explain the factors affecting container stow (Any five) (5 Marks)

17. With respect to reefer ships explain the following:
(a) Care, monitoring and records of cargo during passage- (5 Marks)
(b) Purpose of temperature recording. (5 Marks)
18. (a) Draw and label the flammability diagram. (5 marks)
(b) Provide detailed explanation of flammability diagram. (5 Marks)
19. What is crude oil washing? (3 Marks) Write down the hazards and benefits of crude oil washing? (7 marks)
20. A tank Measuring 21m x 16m x 16m has an ullage Port extending 0.8m above the top of the tank. It is to be loaded with crude oil at 24°C. 2% of the tank volume is to be left for expansion when maximum temperature expected during the voyage is 40 dog Celsius. (Density of oil = 0.820 @ 15 deg Celsius in vacuum. Given; VCF (40) - 0.9785; VCF (24) - 0.9923.
Find the:(a) Mass of oil loaded (b) Ullage at load Port. (10 Marks)
21. a) Sketch and label type A prismatic tank in a fully refrigerated gas carrier.
b) Explain the hazards of Gas Cargo (any five). (2x5=10 Marks)
- 22.(a) What are the measures taken to maintain watertight integrity of ro-ro cargo spaces? Write any five. (5 Marks)
(b) What precautions we should take while loading / discharging a heavy lift? Write any five. (5 Marks)

