# UNIVERSITI KUALA LUMPUR
## Malaysian Institute of Marine Engineering Technology

## FINAL EXAMINATION
## MARCH 2025 SEMESTER SESSION

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| **SUBJECT CODE** | : | **LOB10803** |
| **SUBJECT TITLE** | : | **FUNDAMENTAL OF MARITIME OPERATIONS** |
| **PROGRAMME NAME** (FOR MPU: PROGRAMME LEVEL) | : | **BACHELOR IN MARITIME OPERATIONS (HONOURS)** |
| **TIME / DURATION** | : | **09.00 AM - 12.00 PM (3 HOURS)** |
| **DATE** | : | **1 JULY 2025** |

### INSTRUCTIONS TO CANDIDATES

1. Please read **CAREFULLY** the instructions given in the question paper.
2. This question paper has information printed on both sides of the paper.
3. This question paper consists of **TWO (2) section**; Section A and Section B.
4. Answer **ALL** questions in Section A, and **THREE (3)** questions **ONLY** in Section B.
5. Please write your answers on this answer booklet provided.
6. Answer **ALL** questions in English language **ONLY**.

**THERE ARE 6 PAGES OF QUESTIONS, EXCLUDING THIS PAGE.**

## SECTION A (TOTAL: 40 MARKS)

**INSTRUCTION: ANSWER ALL QUESTIONS.**
**Please use the answer booklet provided.**

### QUESTION 1

The maritime industry operates a wide range of vessels designed for different purposes, including transporting goods such as containers, liquid bulk, and general cargo. Understanding the types of ships, their design features, and how cargo is handled is essential to ensure operational efficiency and safety. Ship crew play a crucial role in managing cargo operations, maintaining stability, and complying with international regulations to prevent accidents and damage at sea. The following questions assess your understanding of these fundamental concepts.

(a) Identify **FOUR (4)** main types of commercial ships and briefly state their primary functions.

(8 marks)

(b) Assess **THREE (3)** consequences of cargo mismanagement on ship safety and operational efficiency. Provide supporting examples.

(6 marks)

(c) Examine **THREE (3)** differences between the design of RO-RO and a bulk carrier in handling cargo operations.

(6 marks)

**QUESTION 2**

In the maritime field, understanding basic marine terminologies is essential for efficient ship operations and communication at sea. These terms describe a ship's dimensions, weight capacity, and stability all of which influence navigation, cargo handling, and safety. Accurate knowledge of these elements ensures smoother coordination among crew members and supports compliance with international regulations.

(a) Explain the following marine terminologies. Provide examples to support your answer.

(8 marks)

i. Keel
ii. Gross Tonnage
iii. Length Overall (LOA)
iv. Displacement

(b) Explain **SIX (6)** common navigational terms used in bridge-to-bridge communication and navigational charts. Provide examples to support your answer.

(12 marks)

**SECTION B (TOTAL: 60 MARKS)**

**INSTRUCTION: ANSWER THREE (3) QUESTIONS ONLY.**

**Please use the answer booklet provided.**

**QUESTION 1**

The maritime industry facilitates global commerce by moving a vast range of cargo types across the world's oceans. Each cargo type requires special attention in handling, and different vessels are specifically designed to meet those requirements. Familiarity with cargo classifications and ship suitability enhances operational planning and minimizes risks in maritime logistics. The following questions evaluate your understanding of marine cargoes and loading operations.

(a) Identify **FOUR (4)** major types of marine cargo commonly transported by sea. Provide examples to support your answer.

(8 Marks)

(b) Explain **SIX (6)** important elements to be considered during cargo loading operations to promote safety and operational efficiencies.

(12 Marks)

**QUESTION 2**

Ship construction involves coordinated phases and the selection of proper materials to ensure seaworthiness, strength, and long-term performance. Professionals in the maritime sector must be aware of these stages and the specific roles each material plays. The questions below aim to test your knowledge of the shipbuilding process and materials used in vessel construction.

(a) Describe the **FOUR (4)** essential stages involved in modern shipbuilding projects.

(8 Marks)

(b) Explain **SIX (6)** commonly used materials in ship construction.

(12 Marks)

**QUESTION 3**

Cargo handling operations at ports and onboard vessels rely heavily on appropriate equipment and trained personnel. Effective use of Machinery Handling Equipment (MHE) reduces risks, increases speed, and ensures cargo safety. The following questions are designed to assess your understanding of common handling issues and essential safety practices during cargo operations.

(a) Describe **FOUR (4)** common problems encountered during the use of MHE in cargo handling.

(8 Marks)

(b) Demonstrate **SIX (6)** recommended safety practices that should be implemented to prevent accidents during cargo handling.

(12 Marks)

**QUESTION 4**

The safety of seafarers and shipboard operations depends heavily on proper emergency and fire-fighting systems. Maritime personnel are required to understand the functions and classifications of various equipment used to manage onboard hazards. The following questions aim to evaluate your familiarity with essential safety and fire-fighting tools used in the maritime environment.

(a) Describe **FOUR (4)** shipboard safety items used to ensure crew and vessel protection.

(8 Marks)

(b) Identify **SIX (6)** types of fire extinguishers commonly used on ships.

(12 Marks)

**END OF FINAL EXAMINATION QUESTION**