



INSTITUTE OF  
CHARTERED  
SHIPBROKERS

MAY 2023 EXAMINATION SESSION  
MONDAY 15<sup>th</sup> MAY 2023– AFTERNOON

## SHIP OPERATIONS AND MANAGEMENT

Time allowed – three hours

Answer any FIVE questions – all questions carry equal marks

Please read the questions carefully before answering

1. Answer **ALL** parts of the question.

- a) Describe the characteristics of **ONE** of the following types of vessels including dimensions, tonnages, cargo gear and equipment.
  - i. Handymax Bulk Carrier.
  - ii. MR tanker.
  - iii. Large container feeder vessel.
- b) Draw a side profile and cross sectional of the vessel (not a plan view).
- c) Label the significant parts of the vessel.
- d) Give details of **ONE** trade the vessel operates in, where and how it will load, carry and discharge its cargo.

Use the world map provided to support your answer.

2. You are preparing an operating budget for a recently acquired vessel by an owner with a mixed fleet of vessels under your company's management.

- a) Detail the main information you will need about the vessel and why each of these are important.
- b) Give details of the typical costs included in a budget estimate of the daily operating costs.
- c) Explain how you would monitor all these costs during the management of the vessel and what circumstances might arise that could make significant variations to the figures.

**PLEASE TURN OVER**

3. Answer **ALL** parts of the question and show your workings for each.

Using only the data below and avoiding excessive rounding up, calculate:

- What quantity of cargo can be loaded? (Show your workings)
- At which port/ports would you bunker and what quantity would you take, giving your reasons for this.
- Calculate the daily net profit for the voyage. (Show your workings)

Your vessel will complete discharge at Rio de Janeiro and is fixed to load at Montevideo, Uruguay for discharge at Singapore.

Bunker ROB on completion Rio de Janeiro  
700MT LSFO 0.5%S @\$710 pMT  
50MT LSGO 0.1%S @ \$980 pMT

**Only LSFO 0.5%S** to be used on board on this voyage. Vessel to always have five days safety margin of appropriate fuel on board at all times

Intention is to place vessel on spot market at Singapore after discharge with minimum 700 MT LSFO 0.5%S on board and 50 MT LSGO 0.1%S.

SDWT 78,446 MT on 14 M  
Cubic Grain 89,623 M3  
Constant including FW 650 MT  
Loaded speed 13 KTS on 36 MT VLSFO 0.5%S  
Ballast speed 14 KTS on 36 MT VLSFO 0.5%S  
Port consumption 3 MT VLSFO 0.5%S  
Vessel Daily Running Cost \$9,000 per day

60,000 MT Bulk Woodpellets 10% MOLOO (SF 1.48) Montevideo-Singapore. No draft restrictions on voyage.  
18,000 MT SSHEX at Load/15,000 MT SSHINC at Discharge.  
Freight \$27 FIOST per Metric Tonne. Commission 5%.

Distances  
Rio de Janeiro-Montevideo 1045 NM  
Montevideo-Singapore 9173 NM

Bunker Prices  
Rio de Janeiro: VLSFO 0.5%S \$700 pMT,  
Montevideo VLSFO 0.5%S \$725 pMT,  
Singapore VLSFO 0.5%S \$620 pMT, LSGO 0.1%S \$1,020pMT after discharge  
Port charges  
MONTEVIDEO \$66,000  
SINGAPORE. \$70,000

4. Answer **ALL** parts of the question.

- a) Explain the role of a classification society in shipping. What services do they offer?
- b) What surveys are required by Class during the life of a vessel? Under what circumstances might Class be called to inspect the vessel at some other time?
- c) Give details of five certificates that may be issued by Class including their validity, verification requirements and what they certify.

5. Answer **BOTH** parts of the question.

In the last ten years the IMO has overseen the introduction of two major International Maritime codes and conventions, and these continue to be updated. These are the IMSBC and the IBWMC.

- a) What is the subject of the IMSBC? Give details of what categories of hazards it covers, and what associated documentation must be on board the vessel to meet these. Why are these important?
- b) What particular maritime problem is addressed by the IBWMC? What equipment, certificates and manual will need to be on vessels to meet this problem and the legislation's requirements?

6. Your vessel is fixed to load a cargo of

- a) Crude Oil or a Clean Petroleum Product
- b) Iron Ore or Bauxite

**Choose one cargo from a) and one cargo from b)** and draw a major trade route from load to discharge for each cargo. This should include the type and size of vessel used, preparation of the cargo holds or tank on the Ballast passage, precautions at Load Port, a route plan and likely weather for the voyage, the possible hazards of the carriage, and the discharge.

Use the world map provided to clearly show the load and discharge ports and identify the routes taken on the passage.

**PLEASE TURN OVER**

7. Your vessel has suffered an explosion and serious fire in a cargo of Coal in No 3 Hold while in port discharging. There has been major damage to the hold and associated hatch cover and ballast tanks. Following an unsuccessful attempt to fight the fire with hoses and CO2, shore firefighters have flooded the hold with water and this has been successful. Some further damage has been caused to cargo in adjacent holds by the heat and boundary water cooling. There has also been some damage to the berth and several crewmen and shore personnel have suffered minor burns and smoke inhalation.

Discuss in detail the different insurances the vessel will have in place to cover this event.

8. The company you work for currently manages a fleet of 40 vessels, a mixture of tankers and bulk carriers for which you have commercial, technical and operational management.

Identify the various departments that would be in the company and explain the key functions and responsibilities of each department. Draw an organisational chart for the company and identify the key roles within it.