



WEDNESDAY 22<sup>nd</sup> NOVEMBER – MORNING

# 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 for example (dimensions, tonnages, cargo gear) of **ONE** of the following types of vessels.
    - i. A handymax bulk carrier.
    - ii. An aframax tanker.
    - iii. A panamax container vessel.
  - b) Draw a side profile and cross section of the vessel.
  - c) Clearly label the significant parts of the vessel.
  - d) Give details of **ONE** trade the vessel operates in, where and how it will load and discharge its cargo. Use the world map provided to support your answer.
2. Answer **ALL** parts of the question.
  - a) What information is needed about a vessel to prepare an operating budget? Explain in detail why each part of this information is important and how this may affect the budget.
  - b) Provide full details of the main cost items that will appear in a typical budget estimate for the daily operating cost.

**PLEASE TURN OVER**

3. Answer **ALL** parts of the question and show your working for each.  
Using the data provided below, calculate
- What quantity of cargo can be loaded?
  - Where would you take bunkers and what quantity would you stem. Give your reason for this.
  - Calculate the daily net profit for the voyage.

Your vessel will complete discharge at Amsterdam in The Netherlands and is fixed to load Sfax in Tunisia for discharge at Santos in Brazil.

Bunker ROB on completion of discharge at Amsterdam is expected to be 350MT IFO @ \$320pMT & 150MT LSGO @ \$460pMT

Vessel must have a total (FO + LSGO) of 150 MT Fuel on board at all times to cover safety margin. Intention is to place vessel on spot market at Santos after discharge with at least 400 MT FO on board and at least 100 MT LSGO.

All fuel used in SECA is LSGO

Vessel SDWT 36,593 MT on 10.7 M

Cubic Grain 46120 M3

Constant including FW 475 MT

Loaded speed 13 KTS on 23 MT FO or LSGO per day as appropriate

Ballast speed 14 KTS on 21 MT FO or LSGO per day as appropriate

Port consumption 4 MT FO or 4 MT LSGO per day as appropriate all purposes

Vessel Daily Running Cost \$8,400 per day

Cargo 35,000 MT Fertiliser 10% MOLOO (SF 1.15) Sfax-Santos

Max Draft at load port 10.7 M SW no draft restrictions at other ports.

12,000 MT SSHEX at Load / 9,500 MT SSHINC at Discharge.

Freight \$23 FIOST per Metric Tonne

Commission 5%.

Distances

Amsterdam-SECA Limit 420 NM

Amsterdam to Sfax 2395 NM

Sfax to Santos 5395 NM

Sfax-Gibraltar 1005 NM

All fuel used in SECA to be LSGO.

Bunker Prices

Amsterdam available during discharge current cargo

IFO @\$275pMT LSGO \$450pMT

Gibraltar on loaded passage no deviation. Delay 6 hours Barge cost \$2500

IFO @\$275pMT LSGO @\$450pMT

Santos available during discharge

IFO 380@\$315pMT LSGO @\$500pMT

Port charges

Sfax \$46,000

Santos \$53,000

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

You are the operator for a container shipping company charged with buying bunkers for a small fleet of vessels on a round the world service from Japan, Korea and China via the Middle East, Mediterranean, and Northern Europe to the USA. To meet all the sulphur emission requirements;

- a) Show the specific fuels that will be needed for the above areas, the emission requirements for each and what regulations are in place to enforce these. Use the world map provided to support your answer
- b) How will you ensure that your vessels will be supplied with good quality fuels at a competitive price and what measures would you expect to be in place in your company to do this?

5. Your vessel has suffered an explosion and serious fire in a cargo of fertiliser 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 CO<sub>2</sub>, shore firefighters have put large amounts of water into the cargo hold and this has been successful. Some further damage has been caused to heat sensitive 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.

6. A ship management company has commercial, technical and operational management of a fleet of bulk carriers.

Draw an organisational chart for the company showing the various departments that you would expect to find in the company. Fully explain their roles, responsibilities and key functions.

**PLEASE TURN OVER**

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

- a) Explain the role and the services offered by a classification society.
- b) To maintain its Class what generally is the requirement for Inspection by Class during the life of a vessel and what are these surveys called. Under what circumstances might Class be called to inspect the vessel at some other time? Why might a potential purchaser of a vessel wish to inspect the vessel's survey records?
- c) Give details of least **SIX** certificates issued by Class.

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

- a) Explain what certificates a vessel carries to show compliance with the International Safety Management (ISM) code; what are their validity, which bodies issue these certificates and what do these certificates signify? What other documentation should the vessel have to support these certificates?
- b) Explain the role and responsibilities of the DPA regarding the safe operation of each vessel and the proper implementation of the Safety Management System.