



NOVEMBER 2020 EXAMINATION SESSION  
TUESDAY 10<sup>TH</sup> NOVEMBER 2020 – 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 including dimensions, tonnages, cargo gear of **ONE** of the following types of vessels;
    - i. Capesize bulk carrier
    - ii. VLCC tanker
    - iii. Panamax container vessel
  - b) Draw a profile and cross section of the vessel.
  - c) Label the significant parts of the vessel.
  - d) Give details of **ONE** trade the vessel operates in, where it will load, carry and discharge its cargo. Use the world map provided to support your answer.
2. Answer **BOTH** parts of the question.

You have been asked by a potential investor about the costs of shipowing.

- a) Clearly explain the difference between fixed costs, operating or daily running costs and voyage costs. Why would you expect costs to be divided in this way?
- b) What different cost items would you expect to see in each of these three categories.

**PLEASE TURN OVER**

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

One of your vessels has been fixed to carry out the following voyage. Using the below data calculate;

- What quantity of cargo can be loaded? (Show your working)
- Where would you organise bunkers and what quantity would you stem, giving your reason for this.
- Calculate the daily net profit for the voyage. (Show your workings)

Vessel is currently completing discharge at Mombasa, East Africa and is fixed to load Durban, South Africa for discharge at Singapore.

Bunker ROB on completion Mombasa 640MT LSFO 0.5%S @ \$365 pMT and 90MT LSGasoil 0.1%S @ \$450pMT.

Vessel must have at least 150 MT LS Bunkers on board at all times to cover safety margin and will only use LSFO 0.5%S on voyage. Intention is to place vessel on spot market at Singapore after discharge with minimum 600 MT LSFO 0.5% and 90 MT LSGasoil 0.1%S on board.

SDWT 53,626 MT on 12.3 M

Cubic Grain 68,392 M3

Constant incl FW 520 MT

Loaded speed 13 KTS on 24 MT LSFO/GO per day as appropriate

Ballast speed 14 KTS on 24 MT FO or LSFO/GO per day as appropriate

Port consumption 4 MT LSFO/GO per day as appropriate all purposes

Vessel Daily Running Cost \$8,800 per day

Cargo 50,000 MT Soya bean 10% MOLOO (SF 1.41) Durban-Singapore

Max Draft at load port 12.4 M SW no draft restrictions at other ports.

16,000 MT SSHEX at Load/11,000 MT SSHINC at Discharge.

Freight \$17 FIOST per Metric Tonne

Commission 5%.

Distances

Mombasa-Durban 1719 NM

Durban-Singapore 4870 NM

Bunker Prices

Mombasa LSFO 0.5%S \$367 pMT

Durban LSFO 0.5%S \$355 pMT

Singapore LSFO 0.5%S \$347 pMT + \$1500 Barge cost.

Port charges

Durban \$53,000

Singapore \$61,000

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

Commercial vessels that are not equipped with scrubber systems and are trading on international voyages and must now carry two types of Low Sulphur conventional fuels unless they use LPG or similar systems.

- a) Give full details of these fuels and where each fuel will need to be used.
- b) Using the world map provided show the different ECA, SECA and other restricted areas and the limits of these.
- c) Vessels that cannot use LPG or alternative fuels are now being fitted with Scrubber systems. Give details of the main types of these and how they operate. What are the possible disadvantages of having an open loop scrubber system when entering certain ports?
- d) Briefly describe why certain ports such as Singapore, Gibraltar and Fujairah have become successful bunkering locations.

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

Your Panamax bulk carrier is fixed on charter to load a full cargo of sugar at Belem, on the North Coast of Brazil in early February for discharge at Hong Kong. The vessel could be routed via Cape of Good Hope, the Panama Canal, or the Suez Canal which are similar in distance. What factors would you take into account when deciding which route to take and what resources are available to help you in decision making?

Using the world map provided show the relevant routes, ports and bunkering locations.

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

- a) The ISPS code was not designed to protect ships from threats in ports; it was designed to protect ports from threats posed by ships. Discuss the validity of this statement.
- b) What benefit has the ISPS code been to shipping and what manpower requirements and documentation must be shown by a vessel and its management to show compliance with the code.

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

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

**PLEASE TURN OVER**

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

You have received a call from your managed vessel reporting that while alongside discharging grain, one of the ship's crane booms No 3 has collapsed into the cargo hold causing some structural damage to a hatch, the boom and some cargo and injured one of your crew and one of the stevedores.

- a) What immediate action would you expect to be taken on board the vessel to manage this situation?
- b) What immediate action needs to be taken by the Managers to ensure all necessary parties are made aware of this incident and to assist the vessel and its crew with this problem?
- c) What insurances will the vessel have in place to cover the damage and injuries and how would you expect these to be apportioned to the insurers.
- d) Under what circumstances might you consider declaring General Average in an incident?