



TUESDAY 26th NOVEMBER 2019 - 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.
- Describe the characteristics (for example dimensions, tonnages, cargo gear, equipment) of **ONE** of the following types of vessels.
 - Capesize bulk carrier
 - MR tanker.
 - Modern Panamax container vessel.
 - Draw a side profile and cross sectional of the vessel.
 - Label the significant parts of the vessel.
 - 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. Answer **ALL** parts of the question.
- Explain the difference between fixed costs, operating or daily running costs and voyage costs. How would you place the following costs in the above categories?
 - Tug Charges
 - Supply of Paint for upcoming drydock
 - War Risk Insurance Premium
 - Additional War Risk Premium
 - Crew joining costs
 - Annual Class survey of ISM system
 - Fuel Testing service fees
 - Registration Costs
 - Cost of LSFO for use in ECA .
 - New Radar System for the vessel.
 - What additional cost items would also be included in the above categories?

PLEASE TURN OVER

3. One of your vessels has been fixed to carry out the following voyage. Using the factors below calculate:
- What cargo quantity can be loaded? Show your calculations to support your answer.
 - Where would you bunker? How much you would order? And your reasons for this.
 - What daily net profit would you earn for this voyage?

The vessel is currently completing discharge at Tampico (East Coast Mexico).
 Bunker ROB on completion 550 MT IFO 380 at US\$ 425 pmt, and 200 MT LS 0.1% Gasoil at US\$ 640 pmt. Intention is to place vessel on spot market on completion Osaka with same quantity of bunkers as on completion Tampico. Vessel must have 200 MT Fuel safety margin on board at all times. At load or discharge ports bunkering is concurrent with cargo operations. Currently expecting and allowing maximum of one day's delay for transit of Panama Canal.

SDWT 46,520 MT on 11.4 SW.
 Grain Cubic 59,755 m³, 5 HO/HA
 Constant including FW 650 MT
 Loaded speed / cons 13 KTS on 27 MT IFO 380/ LS Gasoil PD
 Ballast speed / cons 14 KTS on 27 MT IFO 380/ LS Gasoil PD
 Port consumption 4 MT IFO 380/ LS Gasoil PD
 Daily running cost USD \$ 8,900 / day

The Cargo: - 45,000 MT +/-10% MOLOO Bulk Soya Beans (SF 1.36). Lake Charles - Osaka.
 Max draft load and disport 11.6 M SW. Max draft Panama 11.7 SW
 14,000 SSHEX load/ 11,000 SSHINC disc.
 Freight US\$28 PMT Commission 5%.

Distances:

Tampico - US ECA = 450 NM
 US ECA - Lake Charles = 220 NM
 Lake Charles to US ECA = 220 NM
 USECA – Balboa Panama including Panama Canal transit= 1305 NM
 Balboa to Osaka = 7971 NM

Bunker Prices:

Tampico - US\$430 PMT IFO 380 No LS Heavy Gasoil
 Lake Charles - US\$390 PMT IFO 380. US\$600 LS Heavy Gasoil 0.1%
 Balboa - US\$385 PMT IFO 380. US\$595 LS Heavy Gasoil 0.1% (6 hours delay taking bunkers), (US\$3,500 barge cost).

Port Costs:

Load port US\$ 43,000
 Discharge port US\$ 58,000
 Panama Canal Transit Fee US\$ 81,000

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

Your VLCC is due to complete discharge at Yokohama, Japan in late November 2019 and will sail via Malacca Strait to Mina al Ahmadi, Kuwait where it is fixed to load 20-22 December 2019. You will need to take bunkers during the ballast passage. The subsequent loaded passage is via the Cape of Good Hope to the US Gulf for discharge. Your vessel uses conventional fuels and does not yet have a scrubber system.

- a) Explain the types of fuels you will need to have on board for this complete voyage to meet all the current SECA and ECA requirements, and the new regulations that will come into force during the loaded voyage.
- b) Using the world map provided, show the route your vessel will take indicating all the ports mentioned, including your chosen bunker ports and the main details of the voyage.
- c) Explain your reasons for your choice of the two bunker ports and why they have become major locations for bunkering.

5. 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 other circumstances might Class inspect the vessel?
- c) Give details of five certificates issued by Class including their validity, verification requirements and what they certify.

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

Your handymax vessel is due to load a cargo of grain from South America in January for discharge Northern Europe. Your last cargo was mixed timber and wood products. To ensure the safety of your vessel and the proper carriage of the cargo;

- a) What information must you find out about the vessel and what preparations would you take before loading?
- b) What precautions would you take during and at completion of loading?
- c) What actions would you take during the loaded voyage?
- d) What weather and climate conditions would you expect to encounter during the voyage. Use the world map provided to support your answer.

PLEASE TURN OVER

7. Your vessel is moored alongside a berth and is close to completing discharge of a cargo of steel coils.
A vessel approaching a berth to moor ahead of you with pilot on board and tugs in attendance loses control and makes contact with your vessel, penetrating a side ballast tank and causing other structural damage in No3 hold. A crewman and two stevedores suffer injuries while working in the hold.
- a) What immediate action should the crew take on board your vessel?
 - b) What should the management company do to assist the vessel and the crew?
 - c) What assistance is available at the port and in the local area?
 - d) What insurances does the vessel have to cover this incident?
8. The International Maritime Solid Bulk Cargoes Code (IMSBC) came into force in 2011. Your vessel has been fixed to load a solid bulk cargo of mineral concentrate which is listed as Group A under the code.
- a) What is a mineral concentrate and what specific hazard does a listing under this group signify?
 - b) What general information must be given to the vessel to enable the crew to prepare for this cargo?
 - c) What specific documentary information must be given by the suppliers/shippers to the vessel prior to loading?
 - d) What must the vessel agree before loading with the terminal, and what must be checked during the load to ensure that the requirements of the IMSBC code are met.