



**TUESDAY 22<sup>ND</sup> NOVEMBER 2016 – AFTERNOON**

## **SHIP OPERATIONS & MANAGEMENT**

**Time allowed – three hours**

**Answer any FIVE questions – all questions carry equal marks**

**Please read the questions carefully before answering**

- I. Answer **ALL** parts of the question.
  - a) Describe the characteristics including dimensions, tonnages, cargo gear of **ONE** of the following types of vessels:
    - i. Handysize bulk carrier.
    - ii. Suezmax tanker.
    - iii. New 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 **ALL** parts of the question.

Your company operates a number of vessels that trade from ports in Europe, the USA, and the Far East including China, Japan and Korea.

  - a) What specific fuels must be on board your vessels to satisfy the various regulations that apply to sulphur content in these areas?
  - b) Using the map provided show where is it necessary for your vessels to change the fuel they are using to meet the regulations.
  - c) Using the map provided show three locations, one in each area, where bunkers are readily available and explain briefly why these ports have been successful as bunker suppliers.
  - d) What other systems or technologies might your vessels use to meet emission regulation? Briefly explain how these systems work.

**PLEASE TURN OVER**

3. Answer **ALL** parts of the question.  
 Using the voyage information below calculate:
- What quantity of cargo can be loaded? (Show your workings)
  - What quantity of bunkers would you stem at Durban? (Give your reason for this)
  - Calculate the daily net profit for the voyage. (Show your workings)

Your vessel *South Wind* will complete discharge at Luanda, Angola and is fixed to load Durban, South Africa for discharge at New Mangalore in India.

Bunker ROB on completion Luanda 400 MT at \$280 PMT

Vessel must have a minimum of 5 days fuel on board at all times to cover safety margin.  
 Intention is to place vessel on spot market at New Mangalore after discharge with 300 MT FO on board.

*South Wind*

SDWT 52,888 MT on 12.5 M

Cubic Grain 66,794 M3

Constant incl FW 540 MT

Loaded speed 13 KTS on 26 MT FO per day

Ballast speed 13 KTS on 24 MT FO per day

Port consumption 4 MT FO per day all purposes

Vessel Daily Running Cost \$9,200 per day

Cargo 50,000 MT grain 10% MOLOO (SF 1.36) Durban-New Mangalore

Max Draft at load port 12.5 M SW no draft restrictions at other ports.

19,000 MT SSHEX at Load/11,000 MT SSHINC at Discharge.

Freight \$14 FIOST per Metric Tonne

Commission 5%.

Distances

Luanda - Durban 2395 NM

Durban - New Mangalore 3650 NM

Bunker Prices

Durban HSFO \$270 pmt concurrent with loading

Port charges

Durban \$65,000

New Mangalore \$37,000

4. Answer **BOTH** parts of the question.
- What information is needed about a vessel in order for you to prepare an operating budget for a vessel?
  - You have been asked to prepare such a budget for a client with a fleet of five Capesize bulkers. Describe in detail the typical costs included in a budget estimate of the daily operating costs.
5. Your Aframax tanker will be loading at Lake Maracaibo in Venezuela in May for discharge at Singapore. The vessel can be routed via the Cape of Good Hope, via the Suez Canal or via the Panama Canal all of which are of similar overall distance. What factors will you take into account when deciding which route to take and what sources of information do you have to help you make that decision? Use the world map provided to support your answer, showing the possible routes and key features from your answer.
6. Define and explain **FIVE** of the following abbreviations:
- IMDG Code
  - IIEC
  - IOPP Certificate
  - SOLAS Convention
  - IACS
  - ISSC
  - CTL
  - AWRP
7. Answer **ALL** parts of the question.
- Your Handymax vessel is due to load a cargo of grain in Argentina in January for discharge in Hamburg in Germany. Your last cargo was mixed timber and wood products. To ensure the safety of your vessel and the proper carriage of the cargo:
- What information must you find out and what preparations would you take before loading?
  - What precautions would you take during and at completion of loading?
  - What checks would you make on the cargo during the loaded voyage?
  - What weather and climate conditions would you expect to encounter during the voyage?

Use the world map provided to support your answer

8. Qualified, Certificated and Medically fit (QCM) seafarers are vital for the safety of the vessel. How can a company ensure that it employs and retains QCM seafarers as required by the ISM code? What are the consequences of failing to do this?