



DIRECTORATE OF MERCHANT SHIPPING
GOVERNMENT OF SRI LANKA
CERTIFICATE OF COMPETENCY EXAMINATION

GRADE : CHIEF MATE ON SHIPS OF 500 GT OR MORE (UNLIMITED)
SUBJECT : SHIP BOARD OPERATIONS
DATE : 30th September 2020

Time allowed THREE hours	Total marks : 180
ANSWER ALL QUESTIONS	Pass marks : 60%

Formulae and all intermediate steps taken in reaching your answer should be clearly shown. You may draw sketches wherever required. Electronic devices capable of storing and retrieving are **not** allowed.

- 1) Answer following questions in relation to Reefer cargoes:
 - a) Reefer cargo manifest is one of the key documents required for reefer cargoes. Briefly describe what is Reefer Cargo Manifest and information contained in it.

(10 marks)
 - b) On reefer vessel's slight changes in temperature of cargo compartments could lead to heavy cargo damage claims. Briefly explain the basic sensors and transducers in place, on reefer plant to monitor proper function and fault identification of a reefer system.

(10 marks)
 - c) In order to carry refrigerated cargo, shipper's cargo related information are very important. List what are the main information required from the shipper relation to refrigerated cargoes.

(10 marks)

- 2) Answer the following questions in relation to Timber deck cargoes:
 - a) There are many concerns relating to the height of timber deck cargoes. Explain under what situations you will restrict the height of timber deck cargoes.

(10 marks)
 - b) A vessel loaded with timber deck cargo from Baltic to US experienced a considerable list during the voyage. When the vessel departed the loading port vessel left with an upright condition and experienced severe weather during the voyage. Explain in detail your investigation procedure and the actions taken according to your evidences identified.

(20 marks)

- 3) Answer following questions in relation to cargo operations:
- a) On merchant vessel's it is very common practice to use Stowage plan and Loading and unloading plan during loading and unloading of cargo. Discuss why it is necessary to use both plans during loading and unloading of cargo including basic contents of both the documents.
(15 marks)
 - b) Drawing a proper and effective stowage plan is a unique talent and a task. During the process of drawing a stowage plan ship's officers are required to gather various information to develop an effective stowage plan. List what are the important information you should consider when preparing an effective stowage plan.
(15 marks)
- 4) a) As per the requirements of IACS a vessel should have a planned maintenance system. Describe what a planned maintenance system is.
(05 marks)
- b) Describe the minimum requirements that a planned maintenance system should contain
(12 marks)
 - c) There are various computer based PMS modules available for ships. List down such systems available.
(08 marks)
 - d) What are the advantages and disadvantages of having a PMS system on board a merchant vessel.
(05 marks)
- 5) Few years ago, some grain vessels were lost at sea and inquiries indicated it was due to dangerous list associated with bulk grain shift. Subsequently, Grain code was introduced and made it mandatory to follow its provisions.
- If you are chief officer;
- a) state the minimum criterion to comply for a vessel to set out to sea with a consignment of grain.
(10 marks)
 - b) how the heeling arm due to grain shift is derived and what are the parameters for the vessel to remain seaworthy?
(10 marks)
 - c) what action you could take to improve the situation if the vessel is found not complying with the requirements?
(10 marks)

- 6) When carrying Solid bulk cargoes IMSBC and BLU code has been made mandatory.
Answer the following questions with regards to IMSBC and BLU codes;
- a) Write short notes on the BLU code and the IMSBC code.
(10 marks)
 - b) To prevent excessive stresses during loading, unloading and stowage of solid bulk cargoes what information shall be provided to the vessel?
(10 marks)
 - c) What exchange of information and agreement should take place between the Master and the terminal before and during loading operation?
(05 marks)
 - d) What are the documents prepared as regulatory requirements before departure of a vessel loaded with solid bulk cargoes?
(05 marks)