



**DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA**  
**MINISTRY OF PORTS AND SHIPPING**  
**MERCHANT SHIPPING SECRETARIAT**

**CERTIFICATE OF COMPETENCY EXAMINATION**

**GRADE: CHIEF MATE/MASTER ON SHIPS OF 500 GT OR MORE**

**SUBJECT: SHIPBOARD OPERATION**

**DATE : 29<sup>th</sup> June 2018, 0900 hrs to 1200 hrs.**

Time allowed **THREE** hours

Total Marks 180

Answer **ALL** questions

Pass Marks 60%

Formulae and intermediate steps taken in reaching your answer should be clearly shown.

You may draw sketches where ever consider prudent.

Q 1 a) Write a short notes on Extended Dry Docking. (8 marks)

b) Explain the circumstances in which an International Load Line Certificate would be canceled by the administration. (8 marks)

c) Explain the Documentation and records that must be maintained on the ship in terms of

i) Records of Freeboard (07 marks)

ii) Information relating to the stability and loading of the ship. (07 marks)

**Q 2**

a) List down 5 critical operations you would carry out onboard a ship. (05 Marks)

b.) What is the purpose of carrying out a Risk assessment? (05 Marks)

c.) Based on the findings of high risk in a Risk Assessment for entering in to a dangerous enclosed or confined space , suggest appropriate control measures to be put in place prior making the entry. (10 Marks)

d.) Explain the advantages of the “Permit to Work” system. (10 Marks)

**Q3 a)** With regard to tanker operations, explain following

1) Segregated Ballast

2) Ignition point

3) ISGOTT

4) Cavitations

**(5 Marks for each)**

b) In maintaining a gas free environment inside the tanks, how does the principle of inert gas system has benefited you in achieving this task? **(10 marks)**

**Q 04)**

(a )With regard to the certificate of fitness,

i) What vessels are issued with this certificate? **(04 marks)**

ii) For what purpose this certificate is issued? **(04 marks)**

iii) Who issues this certificate? **(04 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 are the documents prepared as regulatory requirements before departure of a vessel loaded with solid bulk cargo? **(08 marks)**

**Q 05)** With reference to grain regulation explain,

a) What is 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)**

**Q 06)** a) briefly explain the purpose and objectives of establishing the following conventions and by whom they were introduced.

i) UNCLOSS III (05 Marks)

ii) Maritime Labour Convention (MLC 2006) (10 Marks)

b) Due to operational environment, materials which used to build merchant vessels are subjected to corrosion deterioration. Various effective measures being taken to minimize corrosion process on merchant vessels. Explain in detail these corrosion control methods used onboard a ship.

(15 marks)