

Candidate's Name:

Ports and Maritime Organization
Seafarers' Examination and Documents Directorate

Exams Code: CMSS - 942

Subject : Ship Stability & Construction

Date : 1394.03.24

Rank : Chief Mate (GT≥3000)

Time Allowed : 3.0 Hrs

(Pass mark: 60)

Q.1) - A vessel 120 m long with present drafts fwd= 5.00 m and aft= 6.00 m, the center of floatation amidships, is required to load to her summer load draft of 9.0 m. She has 3 empty holds with maximum capacity of 4000 tons each and ready for loading with following

Hold No.1 LCG 110 m forward of Aft Perpendicular (AP)

Hold No.3 LCG 60 m forward of AP

Hold No.5 LCG 10 m forward of AP

With refer to Deadweight Scale available, **find** how much cargo to be loaded in each hold to complete loading at summer load draft with 65 cm trim by astern. **Also** calculate final drafts. **(20M)**

Q.2) - A box shaped vessel with length=100m, breadth=12 m is floating on even keel draft of 5.2 m in sea water and her GM = 1.5 m. **Find** the new GM if an amidships empty compartment 10m in length and extending full breadth of the vessel is bilged. **(20M)**

Q.3) - With the aid of suitable sketches, explain the effect of free surface of liquid inside a double bottom tank on ship's stability. **(20M)**

Q.4) - With the aid of sketches, describe purpose and construction of **After Peak bulkhead**. **(14M)**

Q.5) - Describe the open/close mechanism of a watertight doors and where these doors are placed. **(14M)**

Q.6) - Describe how the safe condition of following items are examined/checked in dry docks

- a) - Shell Plating
- b) - Rudder
- c) - Anchors and chain cables

(12M)