

Candidate's Name:

Ports and Maritime Organization
Seafarers' Examination and Certification Directorate
Exams Code: CMSSSC

Subject : Ship Stability and Construction

Date :

Rank : Chief Mate (GT≥3000)

Time Allowed : 3,0 Hrs

(Pass mark: 60)

Q.1) - A vessel 44m in length has the following half ordinates of water plane. **Calculate** the area of the water plane and distance of the Centre of Floatation from amidships. **(10M)**

Stations from Aft	0	1/4	1	2	3	4	5	5 1/4	6
1/4 ordinates(m)	0,2	2,2	4,0	4,8	4,8	4,4	3,2	2,0	0

Q.2) - A **box shaped vessel** 120m in length, 20m in breadth and with an even keel draft of 0,20m is floating in **SW**. There is an empty amidships bottom compartment 20m in length, extending the full breadth of the vessel with a watertight flat 1m above the keel.
Calculate the change in initial GM (**GMi**) if this compartment is bilged. **(10M)**

Q.3) - The **hydrostatic data** for a vessel floating at even keel draft of 8,06m in SW are as follow;
Displacement=10000t, LBP = 200m, LCF = 103m FOAP, LCB = 94m FOAP, TPC=22t/cm and MCTC=160 t.m.

Calculate the drafts forward and aft on entering FW. **(10M)**

Q.4) -With the aid of appropriate sketches explain the function and construction of **collision bulkhead**. **(14M)**

Q.5) - a) - With respect to **Load Line Rules**, explain what are type A and type B ships. **(1M)**

b) - State the main requirements for survivability of type B ships with reduced freeboard assigned. **(8M)**

Q.6) - Define following terms;

a) - Tensile strength.

b) - Ductility.

c) - Yield point

(4 marks each)