

سازمان بنادر و دریانوردی

اداره امتحانات و اسناد دریانوردان

Exam Code :mmss - ۹۴۲

تاریخ: ۱۳۹۴/۳/۲۷

نام آزمون: تعادل و ساختمان کشتی

زمان: ۳ ساعت

درجه: فرمانده کمتر از ۳۰۰۰ - سفرهای نزدیک به ساحل

(Pass mark : ۶۰)

Q.۱) - A vessel with FWA=۱۹۰mm proceeds from water of RD = ۱.۰۱۶ to a water of RD = ۱.۰۰۵. **Find** the changed in draft and state whether she will be bodily rise or sink (۱۵M)

Q.۲) - A Ship ۸۰m long is floating at draft ۳.۹۰m FWD and ۴.۷۰m AFT. The centre of flotation is ۱.۱۰m aft of amid ships. Ship's TPC = ۹ t.c, MCTC=۱۱۰ t.c
Find the new drafts **if** a total weight of ۳۹۰ tones is loaded in a position ۱۰m forward of amidships. (۲۰M)

Q.۳) - A Ship of ۲۹۹۰ t. displacement KG=۵.۶۰m, KM=۶.۲۰m floating in salt water, has a double bottom tank ۱۵ x ۸ x ۱ which is divided at the center line and is partially filled with bunker of relative density ۰.۷۵. **Find** the virtual loss of GM due to the free surface of the bunker and the final GM? (۱۵M)

Q.۴) - With regards to high tensile steel welding on ships:

a) - Name at least ۸ types of welding faults

b) - Name at least ۵ methods of welding tests

(۱۵M)

Q.۵) - Name at least ۳ main materials of paints used on ships and explain purpose of each.

(۱۵M)

Q.6) - Name all types of survey a ship and mention the validity of each surveys/certificates.

(۲.۵)