INDIAN MARITIME UNIVERSITY

(A Central University, Government of India)

END SEMESTER EXAMINATIONS –JUNE 2019

B.Sc (Nautical Science)

Semester-III

SHIP STABILITY PAPER -I

(UG21T3302)

Date:10-07-2019 **Maximum Marks: 70**

Time: 3Hrs **Pass Marks: 35**

Q.No 1 is complusory. Answer any 6 out of the remaining 7 questions.

Use of non-programmable scientific calculator is permitted.

Q1. Explain in brief (5 x 2 marks)

a) Deadweight
b) FWA
c) Block coefficient
d) Metacentric height.
e) Free surface effect.

Q2)A cylindrical drum of 1.2m diameter and 2m height floats with it axis vertical in water of RD 1.016 at a draft of 1.4m. Find the maximum mass of lead shots that can be put in it with sinking it. (10 MARKS)

Q3) A double bottom tank 20m x 10.5m x 1.0m has a block coefficient of 0.82. Calculate how much fuel oil of RD 0.9, it can hold. (10 MARKS)

Q4) 500 tonnes of cargo is to be discharged from the lower hold (KG 3m) of a vessel whose displacement and KG before discharging were 11500 tonnes and 6.3m respectively. Find the final KG.

(10 MARKS)

Q5) Explain the different states of equilibrium of ship. (10 MARKS)

Q6) A vessel has a deep tank on starboard side 12m long ,9m wide Which is partly full of coconut oil of RD 0.72.If W=12000T,KM=9M and KG=8.5M,find the GM fluid. (10 marks)

Q7) A ship of 10000t displacement has a GM of 0.4m.calculate the moment of statical stability when she is heeled by 5^0 . (10 marks)

Q8) M.V Hindship is in condition no.2.find the shift of her COG if 100 tonnes of cargo is shifted transversely over a distance of 10m.Also find the resulting list. (10 marks)

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