

INDIAN MARITIME UNIVERSITY
(A Central University, Govt. of India)
May/June 2018 End Semester Examinations
DNS (Diploma in Nautical Science)
Semester II
Ship Operation (UD11T1204)

Date: 07.06.2018

Max.Marks: 70

Time: 2 Hrs

Pass Marks: 35

SECTION - A

Note: Answer any 4 of the 6 questions in this section. All questions carry 10 marks.

Use of non-programmable Scientific Calculator is permitted. Use of Hindship table is permitted.

- 1.** A ship of W 15000t, KM 9.0 m, KG 8.7 m is listed 10 deg. to port. She now loads 150t cargo 7 m above the keel and 4m to starboard of the Centre line. Find the final list. (10 marks)
- 2.** M.V.Hindship is floating in Salt water with a displacement of 9400 t. Calculate her Hydrostatic Draft, TPC, MCTC and KM .If her KG is 8m and total FSM is 1200 TM, calculate her GM (fluid). (10 marks)
- 3.** Explain the following & Sketch, where necessary:

 - a) Centre of buoyancy (3 marks)
 - b) Righting Lever (3 marks)
 - c) Capsizing Moment (4 marks)
- 4.** Describe the Bilge piping system of a Cargo ship with a simple sketch. (10 marks)
- 5.** Sketch and label midship section of a celluler container ship. (10 marks)
- 6.** Explain the following & Sketch, where necessary:

 - a) Stringers (2 marks)
 - b) Garboard strakes (2 marks)

- c) Bilge strakes (2 marks)
- d) Sheer strakes (2 marks)
- e) Beam Knee (2 marks)

SECTION - B

Attempt any THREE out of given four questions

- 7.** Under MARPOL 73/78, Write notes on following:
- a) PSSA (4 marks)
 - b) Cargo record book (4 marks)
 - c) Instantaneous rate of Discharge (2 marks)
- 8.** Explain working of following with sketches:
- a) Evaporator (5 marks)
 - b) Lub oil cooler (5 marks)
- 9.** Explain the meaning of INTERCO flags B,H,G,U and S .
(10 marks)
- 10.** State the importance of the following conventions in Merchant shipping.
- a) SOLAS
 - b) Load line
 - c) STCW
