

INDIAN MARITIME UNIVERSITY
Time Bound Assignment September/October 2020
DNS Arrear Examinations
Ship Construction and Stability - I
UD11T4103

Date: 23/09/2020

Maximum Marks: 70

Time: 2 Hrs

Pass Marks: 35

Note : Part – A : Question No. 1 is compulsory. answer any 2 from remaining 3 questions, all carry 10 marks each.

Part – B Questions 5 & 6 are compulsory, answer any 2 out of remaining 3 questions, all carry 10 marks each.

Use of Non-Programmable Scientific calculator is permitted.

Part A – Ship Construction

1. Sketch and label profile view of General cargo ship show the following:
(5x2=10 Marks)
 - (a) Engine room
 - (b) Peak Tanks
 - (c) Double Bottom
 - (d) Hatchways
 - (e) Bridge

2. (i) Sketch and label an elevation of a Gas Carrier showing Containment systems, compressor rooms, & peak tanks. **(5 Marks)**
(ii) Define sheer force and bending moments. **(5 Marks)**

3. (i) Sketch and label an elevation of Double hull tanker showing bulkhead, pump room, engine room, bunker & peak tanks. **(5 Marks)**
(ii) Explain what is meant by Hogging & Sagging, and distinguish the difference Between them. **(5 Marks)**

4. Describe the loading conditions which give rise to Hogging and sagging stresses. **(10 Marks)**

Part B – Ship Stability

5 Write Definition with suitable sketch, where it is required.

(2x5=10 Marks)

- (i)Block Coefficient
- (ii)Reserve Buoyancy
- (iii)Fresh Water Allowance
- (iv)Relative Density
- (v)Deadweight

6 A vessel is floating in FW at a draft of 6.8 m. If her maximum FW draft is 7.0 m, and her SW TPC is 40, find the DWT available. **(10 Marks)**

7 A vessel of FWA 200 mm goes from water of RD 1.018 to water of RD 1.006. Find the change in draft and state whether it will rise or sink.

(10 Marks)

8 (a) A box-shaped vessel is 120 m long, 14 m wide and 12 m high. If her displacement is 13776 t, find her reserve buoyancy % in SW.

(5 Marks)

(b) Explain what is Dock water Allowance.

(5 Marks)

9 A cylindrical drum of radius 40 cms and height 2 m weighs 200 kg. Lead Pellets are put in it until it floats with it's axis vertical, at a draft of 1.4 m in SW. Find the mass of lead pellets in it, in kilograms. **(10 Marks)**
