

**Indian Maritime University**  
(A Central University, Govt of India)  
End Semester Examinations – June 2023

Programme Name: DNS

Semester: I

Subject Code: UD11T5103

Subject Name: Ship Construction & Ship Stability I

Date: 23.06.2023

Duration: 03 Hrs

Max Marks: 70

Pass Marks: 35

**Section A**

**Answer All the questions**

Choose the correct answer as applicable.

(10 x 1 = 10 Marks)

Q. No.	Description	A	B	C	D
1.	Length of a ship, measured in a horizontal direction, from extreme forward end to extreme aft end of the ship, is known as:	Length on waterline	Length extreme	Length over all	Peak Length
2.	The length over which breadth of ship's hull remains constant is called:	Same section length	Length of Parallel Middle body	Length of Run	Length of Entrance
3.	The _____ bulkhead marks the after end of the Forepeak Tank.	Aft peak Bulkhead	Fore peak Bulkhead	Engine room bulkhead	Collision bulkhead
4.	The greatest breadth of the ship measured to the outside of the shell plating is known as:	Extreme breadth	Absolute breadth	Moulded breadth	Perpendicular breadth
5.	A Pipe used to measure the liquid level in a ship's tank is called:	Level Pipe	Measuring Pipe	Sounding Pipe	Tank domes
6.	Pressure is defined as:	Load per unit area	Load per unit volume	Volume per unit mass	Area per unit mass
7.	In how many locations can the draft marks be found on the shipside?	Two	Six	Four	Eight
8.	Coefficient of fineness of the water plane is.....	$C_B$	$C_w$	$C_F$	$C_P$
9.	DWA stands for:	Deep water allowance	Dock water application	Dock water allowance	Draft water allowance
10.	Reserve buoyancy of a vessel is expressed in	Cubic tonnes	Square meter	Percentage	meters

## Section B

### Answer all the questions

#### Short answers

**(5 x 2 marks= 10 Marks)**

11. Define Aft Perpendicular with suitable sketch.
12. Define Air draft and state its significance.
13. A ship is floating in FW at a draft of 6.8m. If her maximum FW draft is 7.0m, and her SW TPC is 40, find the DWT available.
14. Define Relative Density.
15. Sketch and label a Gooseneck vent.

## Section C

### Answer all the questions

16.

**(10 Marks)**

Sketch Profile view of a general cargo ship and label the following parts:  
Cargo holds, Tween Deck, Engine room, Steering gear room, Forecastle Deck, Hatch Coaming

17.

**(2 x 5 = 10 Marks)**

- a) Sketch elevation through Fore Peak tank of a ship and label the principal Parts
- b) Define following
  - 1) Deadweight available
  - 2) Present Displacement
  - 3) Light Displacement

18. A vessel floats in DW of RD 1.016 with her winter load line 100 mm below water on port side and 180 mm below water on starboard side. If her FWA is 200 mm, TPC 24 and summer draft is 9.6 m find DWT available. **(10 Marks)**

19.

**(2 x 5 = 10 Marks)**

- a) Define Block coefficient.  
A Double bottom Tank 20m x 10.5m x 1.0m has a Block coefficient of 0.82. Calculate how much fuel oil RD 0.95 it can hold?
- b) A rectangular tank is 20m x 20m x 12m. It is required to leave 3% of the volume of the oil loaded for expansion. Find the mass of oil and the ullage on loading.

20.

**(2 x 5 = 10 Marks)**

- a) A homogenous rectangular log 8m x 2m x 1m has RD 0.8. Find its draft in FW when floating with its largest face parallel to the water.
- b) With the aid of neat sketches, define Sheer and Flare.



Shishir Srivastava &lt;shishirs@tmi.tolani.edu&gt;

**Clarification - DNS - UD11T5103 - Q No 19 (b) - reg.**

1 message

**ESE IMU HQ** <imuese@imu.ac.in>  
Bcc: shishirs@tmi.tolani.edu

Fri, Jun 23, 2023 at 11:29 AM

Dear Sir,

Please refer to today's QP in this regard please note the following clarification for Q No 19 (b):

The Density is to be taken as 0.8.

Please convey the same to all the concerned cadets.

Thanks &amp; Regards,

Cmde KD Joshi (IN) (Retd)  
Controller of Examinations  
Indian Maritime University  
East Coast Road, Sholinganallur (PO),  
Semmencherry, Chennai - 600119  
Phone: 044 - 2453 9023



