

**Indian Maritime University**  
**(A Central University, Govt of India)**  
**End Semester Examinations – December 2023**  
**Programme Name: DNS**  
**Semester: I**  
**Subject Code: UD11T5106**  
**Subject Name: Cargo Handling, Stowage and Seamanship I**

Date: 28.12.2023  
Duration: 03 Hours

Max Marks: 70  
Pass Marks: 35

**General Instructions**

- (i) All Sections (A, B & C) are to be attempted.
- (ii) Options, if any, are specified in respective section.
- (iii) Scientific Calculator is permitted.
- (iv) (Hind ship Hyd. Particulars, Weather coding booklet, Tide Tables, permitted as per the subject concerned)
- (v) (World Map, Tidal curve, Radar Plotting sheets, Charts, Illumination range curve chart will be supplied by the Examination Centre)

**Section A**

**Fill in the Blanks**

**(1\*10 = 10 Marks)**

1. Size of the containers carried on board vessel are \_\_\_\_\_
2. SWL is calculated by dividing Breaking stress with \_\_\_\_\_
3. \_\_\_\_\_ is the strongest rope amongst natural fiber rope.
4. When a ship goes from warm place to cold place then \_\_\_\_\_ is formed.
5. Broken stowage is \_\_\_\_\_.
6. The perforated box protecting the cargo hold bilge suction pipe opening is called a \_\_\_\_\_
7. \_\_\_\_\_ are used in the Passive cathodic protection method on ships.
8. The validity of Permit should not exceed \_\_\_\_\_ hrs.
9. Mandatory signs are identified by \_\_\_\_\_ colors.
10. The safety committee meetings should be held in \_\_\_\_\_ time

## Section B

### Short answer

(2 \* 5 = 10 Marks)

11. Define Cargo Work.
12. Define Measurement cargo.
13. List types of safety signs used on board ships.
14. List any 4 Personal Protective Equipment used on board ships.
15. Write short notes on types of Chemical tankers.

## Section C

### Answer five out of seven questions.

16. **(10 Marks)**  
The dimensions of a tween deck are 20m × 15m × 3m. Find the maximum Weight of general cargo that can be loaded in the compartment if Stowage Factor is 2.0 m<sup>3</sup> /t and broken stowage is 10%. Will the quantity of cargo be different if load density of the deck is 1.25 t/m<sup>2</sup>? Give reasons for your answer.
17. **(10 Marks)**  
A gyn tackle reeved to advantage is used to lift a load of 22 tonnes find the stress on the hauling part and also find the maximum size of 6 x 37 wire to be used in this tackle.
18. **(5x2=10 Marks)**
  - a) Explain the care and maintenance of Synthetic fibre rope
  - b) Explain with sketch Cargo sweat and ventilation requirement
19. **(5 x 2=10 Marks)**
  - a) Describe basics of Ballasting/De-ballasting?
  - b) What is a Fire Triangle? What are the basic methods of controlling Fire on a cargo compartment?
20. **(5 x 2=10 Marks)**
  - a) Explain safety precautions to be taken while operating power tools
  - b) Write a short note on Permit to work system.
21. Describe in details the principle of cargo stowage **(10 Marks)**
22. **(5 x 2=10 Marks)**
  - a) Explain with sketch Electro-chemical corrosion and explain Sacrificial Anode.
  - b) As per the COSWP, what is the role of "Safety officer" on board?

\*\*\*\*\*end of paper\*\*\*\*\*