

Indian Maritime University
(A Central University, Govt of India)

End Semester Examinations – December 2022

Programme Name: B Sc (NS)

Semester: III

Subject Code: UG21T5305

Subject Name: Cargo Handling & Stowage – Paper I

Date: 16.12.2022

Max Marks: 70

Duration: 03 Hrs

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) (Norrie's Table, Nautical Almanac, Hindship 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

Ten MCQs – Choose the correct answer.

1. While discharging cargo by grabs in bulk carrier, any damages done to the ship by stevedores _____
 - a) The Captain must inform the owners by e-mail about the damages
 - b) It is the duty of the ship staff to repair it as soon as they notice it
 - c) Third-party damage report to be made and signed by the stevedore's foreman within 24 hours of the occurrence
 - d) You can do nothing about it.
2. When loading steel coils in the cargo holds of a bulk carrier, the most important factor to consider is :-
 - a) The bale capacity of the cargo hold

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- b) The grain capacity of the cargo hold
 - c) The load density of the cargo hold tank top
 - d) The broken stowage factor of the steel cargo
3. A purchase is said to be used to advantage:-
- a) When the load moves in the opposite direction of the effort
 - b) By counting the number of moving and fixed blocks in the purchase
 - c) When the load moves in the same direction of the effort
 - d) By counting the number of sheaves in the purchase
4. During loading of a bulk carrier, the mooring lines will become _____. Select the best option.
A)Taut B)No change C)Slack D)None of the above.
5. How would you ventilate your cargo holds when sailing from cold climate to hot climate?
- a) No ventilation should be done
 - b) Ventilate excessively
 - c) Ventilate only during night time
 - d) Ventilate only during day time
6. The crane cut off limit switch can be bypassed in some cases in order
- a) To speed up the cargo operation to satisfy the charterers
 - b) To discharge the cargo from the sides where the crane does not reach in normal operation
 - c) For lifting the hatch pontoon when the pontoon is fallen off the track
 - d) When parking the crane and testing it to its proof load
7. How much space would 300 tonnes of tea with stowage factor of 3.0 take up, if it had a broken stowage of 10%
- a) 330 cubic metres
 - b) 990 cubic metres
 - c) 90 cubic metres
 - d) 3330 cubic metres
8. What are the most important checks you would carry out when checking a hatch cover for watertight integrity?
- a) Check gasket condition
 - b) Look upwards from inside the cargo hold for signs of daylight
 - c) Carry out hose-test and check for leaks
 - d) All of the above
9. When working in cargo hold during cargo operation, what must you ensure?
- a) That any radio equipment (like walkie) is switched off

- b) That you keep under the coaming as much as possible
- c) That you assist the stevedores as much as possible
- d) That you stand in the centre of the hold to direct the hatchman/crane driver

10. Points which are not considered while preparing a cargo plan?

- a) Port rotation
- b) The cargo plan needs to be made as per scale
- c) Stability of the vessel
- d) Dimension/capacities of cargo space, stowage factor/dimensions of cargo

Section B

Five Questions of 02 Marks each. SHORT ANSWER TYPE QUESTIONS

- 11. What is grain capacity?
- 12. What are the two most common leak detection test of hatch covers?
- 13. What is a snatch block?
- 14. When do you say that a purchase is used to advantage and when do you say that a purchase is used to disadvantage?
- 15. What is the purpose of compression bars on the hatch coaming?

Section C

Answer five out of seven questions. (10 Marks Each)

16. A Cargo Hold 22x15x12 of bale capacity 3900m³ and load density 5/tm² is to be filled so as to maximize the freight earning. The cargo available is

	SF	Freight
Steel billets	0.70	\$70/-per ton
Cotton bales	2.80	\$50/-per m ³

How much of each cargo will you load and what is the Freight earned?

- 17. Explain what all visual inspections to be carried out on ships cargo gear before handing it over to the stevedores?
- 18. What are the different types of segregations you observe while loading dangerous cargo in package form?
- 19. Briefly describe how are ship sweat and cargo sweat are caused? How do you ventilate them in order to prevent cargo damage?
- 20. In the following problems unless mentioned otherwise, use a value of

10% of the load, per sheave for friction and a factor of safety of 6 for ropes and wire.

Using a three fold purchase rigged to disadvantage, to lift a weight of 9.6 tonnes, find:

- i) the tension in the hauling part
- ii) The efficiency of the system
- iii) The minimum size of manila rope that can safely be used in the purchase.

21. List the main jobs you would carry out prior loading in a dry cargo ship?
22. What are the care and maintenance of fibre and synthetic ropes on board?

