

Indian Maritime University
(A Central University, Govt of India)
Supplementary Examinations – March/April 2024
Programme Name: B Sc (NS)
Semester: III
Subject Code: UG21T5305
Subject Name: Cargo Handling & Stowage – Paper I

Date: 30.03.2024

Max Marks: 70

Duration: 03 Hrs

Pass Marks: 35

General Instructions

- (i) All Sections (A, B & C) are to be attempted.
- (ii) Section A & B compulsory, Section-C answer any 5 out of 7 Question
- (iii) Scientific Calculator is permitted.

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
 - b) The grain capacity of the cargo hold
 - c) The load density of the cargo holds 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

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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

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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. 10marks
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. State the contents of Cargo Securing Manual. What is the purpose of CSM.
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?


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