

INDIAN MARITIME UNIVERSITY
(A Central University, Government of India)
END SEMESTER EXAMINATIONS- DECEMBER 2018
B.Sc. (Nautical Science)
SEMESTER-III
Cargo Handling and Stowage Paper- I (UG21T3305)

Date:05-01-2019

Maximum Marks: 70

Time: 3Hrs

Pass Marks: 35

Note: Question No. 1 is compulsory.

Answer any 6 questions from remaining 8 questions (each of 10 marks).
Non Programmable Scientific Calculator is permitted if required.

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- Q1. Define or write short notes on the following. (2 x 5 =10 marks)
- (a) Dunnage and its use
 - (b) Composition of a Deck Crane
 - (c) Frictional forces in a Block and Tackle. Give examples.
 - (d) Cargo gear certificate Register
 - (e) Cargo sheet.
- Q2. (a) Sketch a simple derrick and label the parts. Explain the functions of each part of the simple Derrick. (5 marks)
- (b) What are the main advantages of cranes as compared to Derricks. (5 marks)
- Q3. (a) Write short notes on the following
- i) Bale Capacity and Grain capacity
 - ii) Stowage factor and Broken Stowage. What is high density cargo as per IMO standards. (5 marks)
- (b) Given SIZE OF COMPT= 10X8X6m.
- SF of Cargo= $4M^3/T$:
 - Calculate weight of cargo that can be loaded.
 - The BS = 10% Then calculate weight of cargo that can be loaded. (5 marks)
- Q4. (a) Explain the rigging of a purchase to advantage and to disadvantage. (5 marks)
- (b) Two three fold purchase are used to lift a life boat weighing 7500 kg. Frictional loss is 1% of the load per sheave. Calculate the SWL of wire required to lift the boat. (5 marks)
- Q5. (a) What is the requirement to test hatch covers. (5 marks)
- (b) Explain the process of Hose testing and Ultrasonic testing. (2+3 marks)

- Q6. (a) Explain the use of Dunnage in loading Bulk cargo. (5 marks)
(b) Enumerate important points to be remembered before loading bulk cargo (5 marks)
- Q.7. (a) Write notes on Safe working load, Breaking stress , and Proof load. (2+2+1 marks)
(b) What is permissible load density. Explain with an example. (5 marks)
- Q8. (a) Enumerate the different types of Hatch covers commonly in use.(5 marks)
(b) In designing a Hatch cover give 5 important key parts (5 marks)
- Q.9. (a) Write down important factors for making cargo stowage plan (5 marks)
(b) Define (i) Load density (ii) Hazardous Cargo (2.5 x 2=5 marks)
