

INDIAN MARITIME UNIVERSITY

(A Central University, Govt. Of India)

B.Sc. (Nautical Science) Semester-III
December 2017 End Semester Examination.

Cargo Handling and Stowage – Paper I Subject Code: UG 21 T3305

Time: 3 hrs.
Date: 13.12.2017

Max. Marks: 70
Pass Marks: 35

Note: Answer any seven questions. All questions carry equal marks.

Part – A (10 x 2 = 20 Marks)

(All Questions are compulsory)

1. a) What do you understand by Ship's sweat and Cargo Sweat? (5 marks)
b) How is cargo ventilation carried out on board ships to prevent sweat formation? (5 marks)
2. Define the following: (2x5 marks)
a) Proof load b) Safe working load c) Broken Stowage d) Load density e) Stowage factor.

Part – B

(Answer any 5 of the following)

3. a) Explain briefly different types of tackles and their power gained. (5 marks)
b) With the help of a diagram, explain briefly what are the stresses experienced by a derrick and the blocks. (5 marks).
4. A Vessel of 6000 tonnes DWT has on board 400 tonnes of fuel, 300 tonnes of water and 150 tonnes of stores. The vessel has four holds of the following capacities:
Hold 1: 2400 cu.m
Hold 2: 3000 cu.m
Hold 3: 3100 cu.m
Hold 4: 2500 cu.m
The following commodities are to be loaded: Bagged Melon Seeds @SF of 2.32 and Rice in bags @ SF of 1.46.
Calculate the quantities that should be loaded to full capacity.

(10 marks)

5. a) What is liquefaction and FMP and what is the relation between TML and FMP? (5 marks)
b) State the classification of bulk cargoes as per IMSBC Code and give examples of each. (5 marks).
6. Write in detail about the Chain register. (10 marks)
7. In a Union purchase how does the angle between runners matter during cargo operations and what is the critical angle beyond which the load increases exponentially? (10 marks)
8. a) With the help of a simple diagram explain Bale Capacity and Grain Capacity. (5 marks)
b) Describe the various slings used in cargo work on board General Cargo Ships. (5 marks)
9. What are the duties of a watch keeping officer during cargo operations? (10 marks)
