



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL & AUTOMOTIVE ENGINEERING

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN NAUTICAL SCIENCE

ANS 2209 : CARGO WORKS AND STOWAGE (PP2)

END OF SEMESTER EXAMINATION

SERIES: AUGUST 2017

TIME: 2 HOURS

DATE: Pick Date Sep 2017

Instructions to Candidates

You should have the following for this examination

-Answer Booklet, Scientific calculator, examination pass and student ID

This paper consists of **FIVE** questions. Attempt any **THREE** questions.

Do not write on the question paper.

Question 1

- State **TEN** items of information that are required in order to prepare a pre-stowage plan (**5marks**)
- Discuss the three plans onboard a cargo vessel that are particularly important to the chief officer when it comes to cargo work. (**15marks**)

Question 2

- Explain the aspect of ballast in cargo loading and discharging process (**5marks**)
- List the four factors underpinning the basic principles of cargo handling, stowing and carriage onboard a ship (**8marks**)
- Your vessel is about to commence loading of bulk grain. Outline the **IMO** criteria in relation to stability and stress with which as a master you would like the deck officer to be thoroughly familiar. (**7marks**)

Question 3

- a) Define the word Appendage **(2marks)**
- b) What is the effect of the density of water on the draft of a ship **(4marks)**
- c) Discuss the term “Tonnes per Centimeter Immersion” (TPC)**(4marks)**
- d) A ship anchors off a port in salt water with the upper edge of her tropical load line 3m above water. Her tropical draft is 7.562m; TPC is 22.54t, fresh water allowance (FWA) is 153mm. She is to discharge some cargo into lighters in order to enter a dock where the density of the water is 1.013t/sqm and the depth of the dock is 7.70m.
Find the minimum amount of cargo to discharge in order to cross the dock sill with a clearance of 20cm. Assume that the vessel remains on an even keel throughout.**(10marks)**

Question 4

- a) Discuss any **five ways** in which cargo can be damaged onboard a ship **(10marks)**
- b) In regard to marine order 28 and STCW Sec. A-VIII/2 as amended, outline the principles applying to watch keeping onboard a cargo vessel in port and underway.**(10marks)**

Question 5

- a) What do you understand by the term dangerous cargo **(3marks)**
- b) How are dangerous goods classified and marked **(3marks)**
- c) Carriage, stowage and discharge of dangerous cargo involve several risks associated with each different class of cargo. State any **four** of the general rules that should always apply before attending to the specific needs of each class. **(8marks)**
- d) In approximately 100 words, describe the **IMDG** code and the information that can be obtained from it. **(6marks)**.