



# TECHNICAL UNIVERSITY OF MOMBASA

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FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL & AUTOMOTIVE ENGINEERING

**UNIVERSITY EXAMINATION FOR:**

**DIPLOMA IN NAUTICAL SCIENCE**

**ANS 2203 : CARGO WORK & STOWAGE II**

**END OF SEMESTER EXAMINATION**

**SERIES: DECEMBER 2016**

**TIME: 2 HOURS**

**DATE:** Pick Date Dec 2016

## Instructions to Candidates

You should have the following for this examination

*-Answer Booklet, examination pass and student ID*

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

**Do not write on the question paper.**

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## **Question ONE**

- a) Explain in details the safety precautions the officer of the watch (O.O.W) should take into consideration when working cargo operations in order to avoid accident while in port or at sea **(14 marks)**
- b) What is meant by the following terms;
  - i. Net tonnage **(2 Marks)**
  - ii. Deadweight cargo **(2 marks)**
  - iii. Light displacement **(2 marks)**

## **Question TWO**

- a) Explain the cargo hold cleaning procedures in details **(10 Marks)**
- b) Describe a conventional swinging derrick and label the main parts **(10 Marks)**

### Question THREE

A vessel of 61 m long and a maximum beam of 13 m. She has a light draft of 1.5 m and a load draft of 4m even keel. Block coefficient of fineness is 0.6 at light draft 0.75 at the load draft.

She has on board the following loads;

1. Fresh water	80.3 tons
2. Provisions and personal effects	105.0 tons
3. Fuel bunkers	82.3 tons
4. General cargo	705.0 tons

How many tons of cargo can she load to make her go down to her load line mark? Assuming the vessel will float upright in salt water: density 1.025 **(20 Marks)**

### Question FOUR

- a) Explain in details the use dun age **(10 marks)**
- b) Outline any five methods of separating different types of cargo when carried in the same hold. **(10 Marks)**

### Question FIVE

A ship with a displacement of 7500 has KG 5 m and K.M 6.5m. She proceeds to load the following cargo at the port of Mombasa.

Fresh water – 450 tons, KG 5

Fuel bankers – 600 tons, KG 2 m, Beans in bags 500 tons KG 3 m

- a) Calculate the; (i) final KG, (ii) final GM (iii) shift of G **(14 marks)**
- b) Define the following terms;
  - i. Grain capacity **(2 Marks)**
  - ii. Final stowage **(2 Marks)**
  - iii. Cargo information **(2 Marks)**