TECHNICAL UNIVERSITY OF MOMBASA

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.

Question ONE

a) A ship with a displacement of 8000 tones, has a KG of 6 meters and KM 7.5 meters. She then loads the following cargo and bunkers 700 mt of fresh water KG 4.5 meters, 500 mt of bunkers KG 5.0 meters, steel coils, in the twin deck 800 mt KG 4.8

Find: **(12 Marks)**

i. The final KG

ii. The final GM

b) Explain the meaning of the following terms

i. Cargo boom **(2 Marks)**

ii. Topping lift wire and blocks **(2 Marks)**

iii. Snottier **(2 Marks)**

iv. Cargo winch **(2 Marks)**

Question TWO

a) With an aid of a sketch, describe a rigged derrick and label all the parts **(12 marks)**

b) Explain two types of sweats which may occur in a cargos hold, causes and the remedy for the same **(8 Marks)**

Question THREE

a) Describe a single pull fixed chain hatch cover and label the parts **(12 Marks)**
b) Outline four types of dunnage **(8 Marks)**

Question FOUR

a) List 6 types of slings and give examples of the cargo they are used to lift; provide sketches for the same **(12 Marks)**
b) A ship with a displacement of 500 tons has a KG of 5.0 meters, KM 7m has a weight of 100 tones which is to be shifted from the lower part of the hold to the tween deck through a distance of 4.2 meters **(8 Marks)**
   i. Calculate the shift of G (centre of gravity)
   ii. The final G.M (meta centre height)
   iii. The final K.G (distance from the keel to (k) the centre of the gravity (G)

Question FIVE

a) Explain the following terms as used in cargo work stowage
   iv. Displacement **(2 Marks)**
   v. Bale capacity **(2 Marks)**
   vi. Stowage factor **(2 Marks)**
   vii. Goose neck **(2 Marks)**
   viii. Cargo runner & blocks **(2 Marks)**
b) Discuss the advantages of natural ventilation system and draw a sketch to support the same (**10 Marks)**