



TECHNICAL UNIVERSITY OF MOMBASA

SCHOOL OF BUSINESS

DEPARTMENT OF MANAGEMENT SCIENCE

UNIVERSITY EXAMINATION FOR:

BACHELOR OF MARITIME MANAGEMENT (COMMERCIAL)

BMM 4302 : MARITIME TECHNOLOGY II-MARINE ENGINEERING

SPECIAL SUPPLEMENTARY 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, examination pass and student ID

This paper consists of **FIVE** questions. Attempt question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

Question ONE

- a) Different variables play different roles in consideration for a machinery plant to be fitted in a vessel. Discuss briefly the effect Fuel oil prices on the selection of the main propulsion for MV Mtwapa, which is to ply the east coast of Africa in its trade.

(10 Marks)

- b) Explain the purposes of the following in the system:

- i. Strainer and suction filters
- ii. Pumps
- iii. Cooler
- iv. Temperature Control valve
- v. Temperature sensing device

(10 Marks)

Question TWO

- a) State the requirements of the regulations to the main and auxiliary steering gears with reference to the following:
- i) Rudder angle and the time of operation
 - ii) Electrical requirements
- (10 Marks)**
- b) State why each of the following are fitted on the steering systems
- i) Braking or blocking devices
 - ii) Shock/buffer relief valves
 - iii) Steering gear stops or cut outs
 - iv) Rudder stops
- (10 Marks)**

Question THREE

- a) Define the ISM Code **(2Marks)**
- b) Explain the importance of compliance of ships to the code **(8Marks)**
- c) Discuss the necessary operational certification for compliance with the code **(10Marks)**

Question FOUR

- a) Describe how a Kort Nozzle (Ducted Propeller) contributes towards improving the propulsive efficiency of a ship. **(10 Marks)**
- b) Discuss with aid of sketches six possible motions of a ship **(5 Marks)**
- c) Give the advantages and disadvantages of fitting a bilge keel to reduce rolling motion of a ship **(5 Marks)**

Question FIVE

State with reasons why each of the following mechanisms may occur on a ship's hull.

- a) Brittle fracture **(5 MARKS)**
- b) Creep **(10 MARKS)**
- c) Fatigue **(5 MARKS)**