



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MEDICAL ENGINEERING

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN MEDICAL ENGINEERING

EHL 2103: REFRIGERATION AND AIR CONDITIONING

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2016

TIME: 2HOURS

DATE: 9 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) Tabulate to show FOUR differences between a refrigerator and an air conditioner
(8Marks)

(c) Chlorine and fluorine refrigerants are ozone layer depleters, describe SIX adverse effects to the ozone/environment due to these refrigerant elements

(12 Marks)

QUESTION TWO

- (a) The boiling and freezing points of pure water at STP is used to calibrate various temperature scales, list these two important temperature reference points for the FOUR temperature scales

(8 Marks)

- (b) Regulation of a refrigerant restricting device can result to THREE conditions in an evaporator: flooded, Starved and correctly set, sketch to show these 3 conditions in an evaporator

(12 Marks)

QUESTION THREE

- (a) Describe the uses/functions of the following:

- (i) any FOUR Refrigeration tools/instruments
- (ii) any THREE Refrigeration equipment/machines

(14Marks)

- (b) Use a sketch to describe the THREE positions of service valve

(6 Marks)

QUESTION FOUR

- (a) Describe the **3Rs** in refrigeration and air conditioning fields

(6Marks)

- (b) (i) Use block to describe a refrigerant recovery procedure

- (ii) Describe precautionary measure to be observed during this procedure in 4 b (i) above

(14 Marks)

QUESTION FIVE

(a) By use sketches describe the differences between an accumulator and liquid receiver in a refrigeration cycle

(8Marks)

(b) Describe SIX types of refrigeration and air conditioning systems/classifications

(12Marks)