



TECHNICAL UNIVERSITY OF MOMBASA

FACULTY OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF MEDICAL ENGINEERING

UNIVERSITY EXAMINATION FOR:

DIPLOMA IN MEDICAL ENGINEERING

EHL 2102: WORKSHOP TECHNOLOGY & PRACTICE 1

END OF SEMESTER EXAMINATION

SERIES: DECEMBER 2016

TIME: 2 HOURS

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 question ONE (Compulsory) and any other TWO questions.

Do not write on the question paper.

Question ONE

- a) Describe corrosion as used in metals **10 Marks**
- b) Outline any **FIVE** metal surface protection methods **10 Marks**
- c) Differentiate between the following terms as used in steel:-
- i) Alloying
 - ii) Heat treatment **10 Marks**

Question TWO

- a) Explain any **FIVE** workshop Rules and Regulations **10 Marks**
- b) Describe the following metal joining methods:-
- i) Gas welding
 - ii) Arc welding
 - i) Soldering
 - ii) Riveting
 - iii) Brazing **10 Marks**

Question THREE

- a) Figure 1 shows **THREE** vernier calliper measurements, i), ii) and iii).
Write down the measurement in each case **6 Marks**
- b) Explain the **THREE** different measurements that can be taken using a vernier calliper **6 Marks**
- c) Describe the following measuring tools:-
- i) Vernier Caliper
 - ii) Micrometer screw gauge **8 Marks**

Question FOUR

- a) Given is the thread configuration "M 11 X 1.5".
Explain the meaning of this configuration **10 Marks**
- b) With the aid of a neat sketch, describe the following V-thread form terms:-
- i) Crest
 - ii) Root
 - iii) Pitch
 - iv) Nominal diameter
 - v) Root diameter **10 Marks**

Question FIVE

a) Explain the following engineering materials properties:-

i) Hardness

ii) Malleability

iii) Toughness

iv) Tensile stress

v) Elasticity

10 Marks

b) Describe the following metal joints giving **THREE** examples in each case:-

i) Temporary

ii) Permanent

10 Marks

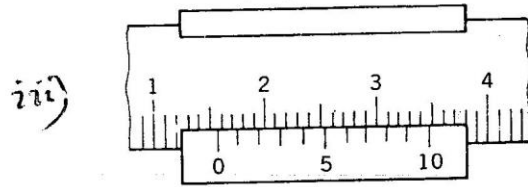
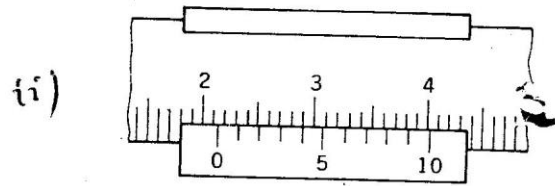
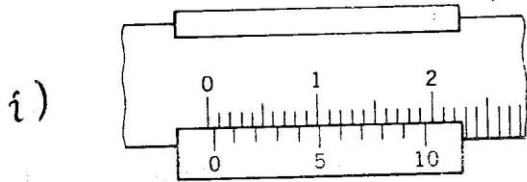


FIG. 1: VERNIER CALIPER MEASUREMENTS.