



**TECHNICAL UNIVERSITY OF MOMBASA**

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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.**

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### 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**

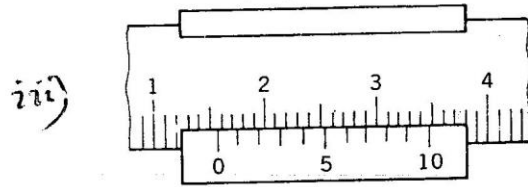
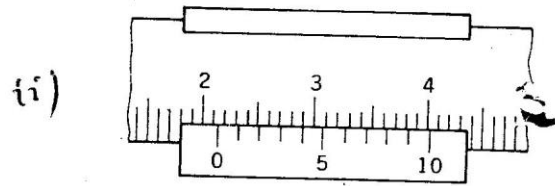
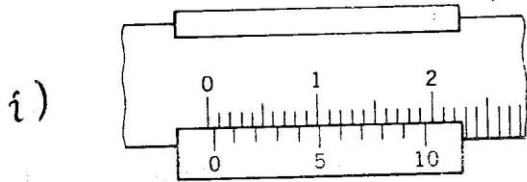


FIG 01: VERNIER CALIPER MEASUREMENTS.