



TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering and Technology
Department of Mechanical & Automotive Engineering
UNIVERSITY EXAMINATION FOR:
Certificate in Electrical & Electronics Engineering
EME 1132 : Workshop Technology & Practice
END OF SEMESTER EXAMINATION
SERIES: AUGUST 2019
TIME: 2 HOURS
DATE: Pick Date Aug 2019

Instruction to Candidates:

You should have the following for this examination

- *Student I.D. Card & Examination Pass*
- *Answer booklet*
- *Non-Programmable scientific calculator*

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

Maximum marks for each part of a question are as shown.

Do not write on the question paper.

Question ONE

- Name **SIX** rules and regulations to be observed in an engineering workshop (6 marks)
- Given a heavy weight load to carry while in your workplace, outline **FOUR** rules you would consider before attempting to lift. (4 marks)
- Name **THREE** key things that are needed to create fire (3 marks)
- State any **THREE** classes of fire and suggest suitable fire extinguishers (6 marks)
- Define fire (1 mark)

Question TWO

- With aid of a well labeled sketch, describe the blacksmith's anvil (8marks)
- Outline the use of the following forging tools (3 marks)
 - Shovel tool

- ii. Poker tool
- iii. The rake tool
- c) Sketch and outline the application of the following tools
 - i. Closed mouth (3 marks)
 - ii. Open mouth (3 marks)
 - iii. Hollow bit (3 marks)

Question THREE

- a) Name THREE types of drilling machines (3 marks)
- b) With the aid of a neat diagram of a drilling machine and explain the function of THREE major parts (7 marks)
- c) With the aid of a neat sketch, describe the THREE taps found in 1 set of taps (4 marks)
- d) With the aid of neat sketches, outline the process of cutting external threads by using a die of M8*1.25 given a work piece rod of 8 mm diameter. (6 marks)

Question FOUR

- a) Define soldering (1 mark)
- b) With an aid of a neat sketch, describe the straight bit and the hatchet type soldering bits used in soldering (8 marks)
- c) What do you understand by the term “Flux” in reference to soft joints produced in soldering process (2 marks)
- d) Differentiate between passive flux and active flux (4 marks)
- e) Briefly explain how Zinc chloride flux can be prepared in a science laboratory (5 marks)

Question FIVE

- a) Explain briefly the meaning of the term “forge-work” (1 mark)
- b) With aid of a neat sketch, explain the uses of the following forging tools
 - i. Open mouth (2 marks)
 - ii. Closed mouth (2 marks)
 - iii. Hollow bit (2 marks)
 - iv. Vee bit (2 marks)
 - v. Universal bit (2 marks)
- c) With aid of neat sketches, describe the uses of the following forge fire tools
 - i. Shovel tool (3 marks)
 - ii. Poker tool (3 marks)
 - iii. The rake tool (3 marks)