



TECHNICAL UNIVERSITY OF MOMBASA

Faculty of Engineering and Technology
Department of Mechanical & Automotive Engineering
UNIVERSITY EXAMINATION FOR:
Diploma in Electrical & Electronics Engineering
EME 2132 : Workshop Technology & Practice
SPECIAL/ SUPPLEMENTARY 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 engineering workshop (6 marks)
- Define fire (1 mark)
- Name THREE key things that are needed to create fire (3 marks)
- Assume that you are a part of the fire extinguishing team in a building which is already in flames having caught fire, outline FIVE precautions you would take into account while trying to extinguish the fire (10 marks)

Question TWO

- Define the term "Forge-work" (1 mark)
- With aid of a neat sketch, describe the blacksmith's anvil (7 marks)
- Show by sketch the following forge work tools.

- i. Close mouth
 - ii. Open mouth
 - iii. Hollow bit (6 marks)
- d) Briefly explain the uses of the forging tools listed in question (c) above (6 marks)

Question THREE

- a) With the aid of a well labeled diagram, describe the construction of a drilling machine (12 marks)
- b) Given a set of taps M8*1.25, explain how you can produce a tapped hole (8 marks)

Question FOUR

- a) Explain the use of the following hand tools
 - i. Hand reamer
 - ii. Screw driver (2 marks)
- b) State THREE advantages of powered hand tools over manual hand tools (3 marks)
- c) With aid of a neat sketch, outline the process of cutting external threads by using a die of M8*1.25 given a work piece rod of 8mm diameter. (10 marks)
- d) Describe the die used for cutting of external threads (5 marks)

Question FIVE

- a) List THREE types of hand shears used in sheet metal work and explain each (6 marks)
- b) Explain the use of the following stakes
 - i. Round bottomed stake
 - ii. Tinman's anvil
 - iii. The half moon
 - iv. The bick iron (8 marks)
- c) With aid of a neat sketch, explain the following joints
 - i. Lap joint
 - ii. Modified joint (6 marks)