



MURANG'A UNIVERSITY OF TECHNOLOGY

SCHOOL OF NGINEERING AND TECHNOLOGY

DEPARTMENT OF MECHANICAL ENGINEERING

TVET EXAMINATION

2023/2024 ACADEMIC YEAR

**SECOND YEAR TERM ONE SEMESTER EXAMINATION FOR DIPLOMA IN
MECHANICAL TECHNOLOGY (PRODUCTION) LEVEL 6**

ENG/OS/ME/CR/7/06/A – PERFORM WORKSHOP PROCESSES

DURATION: 3 HOURS

INSTRUCTIONS TO CANDIDATES:

1. Answer ALL the Questions
2. Mobile phones are not allowed in the examination room.
3. You are not allowed to write on this examination question paper.

SECTION A(40 MARKS)

- Q1. There are several types of files according to their cross sections, list **four** types of files (4 marks)
- Q2. With the aid of labelled sketch, illustrate the use of centres in holding work in a centre lathe. (4 marks)
- Q3. State the tools used in each of the following:
- a) Checking for squareness
 - b) Finishing drilled holes
 - c) Tightening a chuck
- Q4. Differentiate between gang drilling and multiple spindle drilling machine. (3 marks)
- Q5. Differentiate between a live centre and a dead centre (2 marks)
- Q6. Define the term forging (2 marks)
- Q7. List **three** classifications of fuels used in forging shop and give an example in each. (3 marks)
- Q8. Outline **five** essential characteristics of good fuel in a forging shop. (5 marks)
- Q9. Explain the uses of the following forging tools.
- i. Tongs
 - ii. Flatter
 - iii. Cold chisel
 - iv. Set hammer
 - v. Anvil
 - vi. Poker (6 marks)
- Q10. Explain the following forging operations
- i. Drawing out
 - ii. Fullering. (4 marks)
- Q11. State **four** safety precautions to be observed while working in a forging shop.(4 marks)

SECTION B (60 MARKS)

- Q12. With the aid of a labelled diagram, describe each of the following lathe operations.
- i) Chamfering
 - ii) Grooving
 - iii) Knurling
 - iv) Straight turning
 - v) Step turning (20 marks)
- Q13. a) Define the term brazing (2 marks)
- b) i. Highlight the procedure of brazing. (8 marks)
 - ii. Differentiate between active and inactive flux. (2 marks)

c) Differentiate between soft soldering and hard soldering. (4 marks)

d) State **four** precautions necessary for a good brazed joint. (4 marks)

Q14. a) With the aid of a sketch, describe the construction and operation of the sensitive drilling machine. (8 marks)

b) Describe the following drilling operations

i. Reaming

ii. Counter boring

iii. Counter sinking

iv. Spot facing.

(12 marks)