MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

AUTOMOTIVE TECHNICIAN LEVEL 6 /MECHATRONICS TECHNICIAN LEVEL 6/ MECHANICAL PLANT &PRODUCTION TECHNICIAN LEVEL 6

PERFORM WORKSHOP PROCESSES AND PRACTICES / WORKSHOP TECHNOLOGY

CODE: ENG/OS/MC/CC/03/6/A

MARCH /APRIL 2024

INSTRUCTIONS TO THE CANDIDATE:

THIS PAPER CONSIST TWO SECTIONS. A& B, ATTEMPT ALL THE

QUESTIONS IN SECTION A. ANSWER ANY THREE QUESTIONS IN SECTION B.

TIME:3 HOURS.

Section A (40 MARKS)

Answer ALL questions in this section.

1. Highlight 5 factors to consider when selecting measuring tools for a particular task. (5 marks)
2. List examples of different types of technical drawings. (3marks)
3. Explain the factors that influence the selection of hand tools for specific tasks in a workshop environment. (5 marks)
4. Discuss the various uses of cutting fluids or lubricants in machining operations. (5 marks)
5. List 3 types of marking tools in the manufacturing process. (3marks)
6. State 5 types of welding joints (5 marks)
7. What are the key differences between hand drilling machines and bench drilling machines (3marks)
8. Discuss 4 components are included in the operation plan. (4 marks)
9. Given the following tools, explain their uses in the manufacturing process. (3 marks)
    I. Tap
    II. Die
    III. File

10. Explain the concept of pitch in relation to thread geometry. (1 mark)
11. What are the key steps involved in filing a workpiece. (3 Marks)

SECTION B (60 MARKS)

Answer any *three* questions in this section

12. (a) Discuss 5 surface finishing methods and their applications globally. (10marks)
    (b)Referring to question
    Explain the criteria for selecting the above surface finishing methods. (10marks)

13. (a) What is a lathe machine? (2 marks)
    (b) Discuss 6 operations of the lathe machine. (12 marks)
    (c) List 6 types of milling machines. (6 marks)

14. (a) Give examples of work holding devices and their application in the machining process. (10marks)
    (b)Explain the process of drilling using a hand drilling machine. (10 marks)

15.(a) Identify 5 common inspection tools used across different industries. (10 marks)
    (b). Discuss the criteria used to select inspection tools. (10 marks)