



MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

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UNIVERSITY EXAMINATIONS 2023/2024

FIRST YEAR, SECOND SEMESTER, EXAMINATION FOR DIPLOMA IN MECHATRONIC TECHNICIAN LEVEL 6, MECHANICAL PLANT & MECHANICAL PRODUCTION TECHNICIAN LEVEL 6 AND AUTOMOTIVE TECHNICIAN LEVEL 6

ENG/OS/MC/CC/03/6/A: PERFORM WORKSHOP PROCESSES AND PRACTICE/ WORKSHOP TECHNOLOGY PRINCIPLES

DATE: APRIL 2024

TIME: 3 HOURS

INSTRUCTIONS: Answer Question ONE and any other Three questions.

QUESTION ONE (40 MARKS)

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. (3 Marks)
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. (3 Marks)
6. State 5 types of welding joints (5 Marks)
7. What are the key differences between hand drilling machines and bench drilling machines (3 Marks)
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



MUST is ISO 9001:2015 and



ISO/IEC 27001:2013 CERTIFIED

- 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)

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

