

071504T4WLD

WELDING LEVEL 4

ENG/OS/WEF/CR/01/4/A

Perform Manual Arc (Stick) Welding in All Positions with Various Metal Work Pieces

March/April 2025



**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION
COUNCIL (TVET CDACC)**

WRITTEN ASSESSMENT

INSTRUCTIONS TO CANDIDATE

1. This paper consists of **TWO** sections **A** and **B**.
2. Attempt **ALL** the questions in each section.
3. Marks for each question are indicated in the brackets.
4. You are provided with a separate answer booklet to answer the questions.
5. Do not write on the question paper.

This paper consists of FOUR (4) printed pages

**Candidate should check the question paper to ascertain that all pages
are printed as indicated and that no questions are missing**

SECTION A (10 MARKS)

Attempt all questions in this section. Each question carries one mark

1. The best method to prevent accident while conducting manual metal arc welding (MMAW) is to _____
 - A. Wear safety equipment while not on duty.
 - B. Follow safety precaution regarding job, machine and workplace.
 - C. Work according to one's own method in the best interests of job.
 - D. Work like a skilled worker
2. Identify the factor that you will consider in selecting arc welding electrode.
 - A. Type of electrode holder
 - B. Thickness of the material
 - C. welding person
 - D. The color of the material
3. In arc welding, high voltage produces _____
 - A. High heat energy
 - B. High quality weld
 - C. Low current
 - D. High current
4. Identify the arc welding hand tool that is used to clean the weld bead.
 - A. Flat file
 - B. G-Clamp
 - C. Helmet
 - D. Wire brush
5. Knowledge of welding positions is essential for an arc welder. The welding position '2G' means;
 - A. Flat fillet
 - B. Vertical groove
 - C. Overhead fillet
 - D. Horizontal groove

6. Select the purpose of the root gap that is established when joining two metals with manual arc welding.
 - A. Obtain fine finish
 - B. Deposit more metal
 - C. Obtain the required weld penetration
 - D. Obtain hardness of metals
7. Identify the main cause of electrode sticking on the workpiece while welding with arc welding machine.
 - A. Wrong polarity setting
 - B. Poor quality electrode
 - C. Too low welding current
 - D. Short arc length
8. Identify the cause of burn through workpiece during arc welding operation.
 - A. High welding current
 - B. Proper joint preparation
 - C. Good welding technique
 - D. Appropriate welding
9. Choose the list that consist only the 5s housekeeping principles.
 - A. Sort, shine & suspend
 - B. Standardize, set in order & clean
 - C. Shine, set in order & set
 - D. Sort, set in order & sustain
10. The following are hazards associated with arc welding equipment EXCEPT
 - A. Operating welding equipment on wet place
 - B. Operating welding equipment in poorly lighted area
 - C. Operating welding equipment while someone is standing nearby
 - D. Operating welding equipment in a confined space with improper ventilation

SECTION B: (40 MARKS)

Attempt ALL questions in this section.

11. Define fusion welding as used in MMAW. (2 Marks)
12. Electrode coating plays important role during welding process. List FOUR functions of electrode coating. (4 Marks)
13. Welding joints refer to the configurations in which two or more metal parts are joined together through the welding process. List THREE types of welded joints. (3 Marks)
14. Manual arc welding distortion is a concern in the fabrication industry. Identify TWO ways of reducing distortion during MMAW. (2 Marks)
15. Most fabrication industries prefer using manual arc welding over other joining methods. State THREE applications of manual metal arc welding. (3 Marks)
16. Manual metal arc welding has more advantages over other welding methods. Outline FOUR advantages of MMAW. (4 Marks)
17. Surface preparation must be conducted on materials before welding commences include single U edge preparation. Outline THREE other edge preparations done on a work piece
18. Undercut is a welding defect that concerns welders in the fabrication industry. State THREE causes of undercut during arc welding. (3 Marks)
19. Power selection source in MMAW process is a key element for quality weld to be achieved. Outline TWO factors that influences the selection of power source for MMAW. (2 Marks)
20. Good housekeeping practice is important in every MMAW working area. Outline FOUR benefits of good housekeeping practices. (4 Marks)
21. Sketch the welding symbol for fillet weld on both sides (2 marks)
22. As a technician you have been tasked to fabricate the college dining tables using MMAW process. Sketch FOUR welding positions that you are likely to use to fabricate good quality tables. (4 Marks)
23. With the aid of a sketch, describe direct current straight polarity (DCSP). (4 Marks)