**Name:……………………………………...............ADM No:………......Class:……....**

**449/2**

**DRAWING AND DESIGN**

**PAPER 2**

**APRIL 2023**

$2½ hours$

**MECS CLUSTER JOINT EVALUATION**

**FORM FOUR END OF TERM ONE EXAMINATION 2023**

**DRAWING AND DESIGN**

**INSTRUCTIONS TO CANDIDATES**

1. Write your name, index number and class in the spaces provided above.
2. The paper contains **2 PRINTED** pages make sure all **PAGES ARE PRINTED** and **NONE IS MISSING**
3. Answer **ALL** the questions
4. All the answers and working must be written on the question paper in the spaces provided below each question or in A3 paper provided.
5. **Label** every drawing drawn on A3 paper provided

**DESIGN PROBLEM (40 marks)**

During rainy seasons, most people are expected to clear mud from their shoes before they get into any office or household. Design a device that can be used to clear mud from shoes considering the following:

1. It should be operated by hands
2. It should deposit mud in a container.
3. The scrapper should be made of brush
4. It should spray water to soften the mud.

**Requirements**

1. Make sketches of two possible solutions for your design (6 marks)
2. Select one of the designs in (a) above and make a refined labelled pictorial sketch

 (14 marks)

1. Make detailed sketches for the mechanisms to allow for each of the considerations above

 (15 marks)

1. List three materials used and state one reason for the choice of each. (3 marks)
2. State two methods of joining the parts and state where each is used (2 marks)