THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATION COUNCIL

DIPLOMA IN TECHNICAL EDUCATION EXAMINATION

784 **BRICKWORK AND MASONRY**

Time: 3 Hour. **Wednesday, 19 May 2004 a.m**

Instructions

1. This paper consists of sections **six (6)** questions.
2. Answer question number **one (1)** and any other **four (4)** questions.
3. Question 1 carries **thirty-two (32)** marks and the rest carries **seventeen (17)** marks each.
4. Non-programmable calculators may be used.
5. Communication devices and any unauthorized materials are **not** allowed in the examination room
6. Write your **Examination Number** on every page of your answer booklet.

1. (a) Define the term "setting out" in masonry construction.

   (b) State three important tools used during setting out and describe their functions.

   (c) Explain how errors during setting out can affect the final structure.

2. A boundary wall in an open field collapsed six months after construction.

   (i) Identify four likely causes of the failure.

   (ii) Explain corrective measures that should have been applied during construction to avoid the collapse.

   (iii) Propose design modifications to improve wall stability in similar future projects.

3. (a) What is meant by the term "coping" in brickwork?

   (b) State three types of coping commonly used on walls.

   (c) Explain the importance of providing proper coping on boundary and parapet walls.

4. You are tasked with estimating the number of blocks required to build a 3 m high wall, 20 m long, using standard hollow blocks of size 400 mm x 200 mm x 200 mm.

   (i) Calculate the total number of blocks required, allowing 5% for breakage.

   (ii) Suggest two additional materials needed for this wall and their purposes.

   (iii) Describe briefly the steps involved in building this wall from foundation to completion.

5. (a) Differentiate between stretcher bond and header bond in terms of arrangement and application.

   (b) Which of the two bonds is more suitable for half-brick partition walls and why?

   (c) Illustrate with a simple sketch how a corner is bonded using stretcher bond.

6. (a) What is a pier in masonry?

   (b) Mention two reasons for providing piers in long walls.

   (c) Explain how piers contribute to the strength and stability of a structure.