THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATION COUNCIL

DIPLOMA IN TECHNICAL EDUCATION EXAMINATION

783 **BUILDING CONSTRUCTION**

Time: 3 Hour. **Year: 2020**

Instructions

1. This paper consists of sections **five (5)** questions.
2. Answer all questions.
3. Each question carries **twenty (20)** marks.
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) A residential building is planned in a coastal region. Suggest with two reasons the most suitable type of roof that should be used.

   (b) Draw a well labeled sketch of the suggested roof type in question 1(a).

   (c) Corrosion is a common roofing problem in coastal areas. Explain two methods that can be used to prevent corrosion in metal roofing materials.

2. (a) Explain the steps followed when setting out the corners of a rectangular building on site before excavation.

   (b) Sketch and label four courses of a Stretcher bond as used in walling.

   (c) Briefly explain three problems that may arise if proper site drainage is not provided during construction.

3. (a) Describe the process of casting a reinforced concrete column using formwork and vibrator.

   (b) Explain two reasons why plasticizers or superplasticizers are added to concrete mix.

   (c) Describe the manufacturing process of cement using the dry process.

4. (a) A team of engineers was sent to inspect a proposed construction site in Morogoro. Suggest six key observations they should include in their report.

   (b) Briefly explain how to construct a damp-proof course (DPC) in a wall during foundation construction.

   (c) State four safety precautions to be followed when handling and pouring concrete on site.

5. (a) Briefly explain the function and importance of expansion joints in modern concrete buildings.

   (b) Mention four architectural considerations to control excessive heat in residential buildings.

   (c) Distinguish between ground beams and ring beams in building construction.

   (d) Draw a cross section of a ring beam showing reinforcement and label its parts.