THE UNITED REPUBLIC OF TANZANIA

NATIONAL EXAMINATION COUNCIL

DIPLOMA IN TECHNICAL EDUCATION EXAMINATION

783 **BUILDING CONSTRUCTION**

Time: 3 Hour. **ANSWERS** **Year: 2012**

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) Define the term "construction safety" and give two reasons why it is important on site.

Construction safety refers to the **measures and procedures put in place** to protect workers, equipment, and property from accidents and hazards during construction activities.

One reason it is important is that it helps to **prevent injuries and fatalities**. Construction sites involve heavy machinery, working at heights, and hazardous materials, so strict safety protocols protect lives.

Another reason is that it ensures **smooth project execution**, minimizing delays and legal issues that may result from accidents, insurance claims, or government penalties.

(b) One common cause of accidents is **poor housekeeping**, such as scattered tools, debris, or slippery surfaces that cause trips and falls.

Another is **lack of personal protective equipment (PPE)**, where workers operate machinery or handle materials without helmets, gloves, or boots.

Faulty or unguarded machinery also leads to injuries when equipment malfunctions or is used without proper training.

Working at heights without fall protection can result in serious injuries or death due to falls from scaffolding, ladders, or roofs.

(c) Regular **safety training and awareness programs** help ensure workers understand risks and follow procedures to avoid accidents.

Providing and enforcing the use of PPE such as hard hats, safety boots, gloves, and harnesses is essential to minimize exposure to hazards.

Ensuring **site cleanliness and proper storage** of materials reduces the chance of slips, trips, and obstruction-related accidents.

2. (a) Explain the purpose of a schedule of materials in construction planning.

A schedule of materials is a **detailed list of all construction materials** required for a project, including quantities, specifications, and delivery timelines.

Its purpose is to **ensure timely procurement** and availability of materials to avoid delays, over-ordering, or stock shortages during construction.

(b) It includes the **type of material**, such as cement, steel, or timber, required for each stage of the project.

The **quantity needed** for each material is stated, based on drawings and calculations, to guide procurement.

It specifies the **quality or grade of each material**, ensuring compliance with structural and aesthetic standards.

It also outlines the **delivery schedule**, coordinating supply timelines with the construction program to avoid downtime or storage issues.

(c) Without a material schedule, the project may face **frequent stoppages** due to late or insufficient delivery of materials.

It may result in **cost overruns**, as materials bought in a hurry may be more expensive or wrongly specified.

A lack of planning may cause **storage problems** or wastage due to materials deteriorating before use or being misplaced.

3. (a) Define the term "contractor" and explain the role of a main contractor in a building project.

A contractor is an **individual or firm responsible for executing construction work** as per an agreement with the client or project owner.

The main contractor's role includes **organizing labor, materials, equipment**, and sub-contractors to ensure that the project is completed within scope, budget, and timeline.

(b)A **general contractor** manages the entire construction process and coordinates other specialists.

A **sub-contractor** focuses on specific tasks like electrical installation, plumbing, or roofing under the supervision of the main contractor.

A **specialist contractor** deals with complex systems like elevators or fire protection, often hired for their expertise in those specific areas.

(c) The contractor's **experience and past performance** on similar projects should be evaluated to ensure capability.

The **availability of resources** such as skilled labor, equipment, and financial capacity is critical for meeting deadlines.

Reputation and compliance with safety and legal standards must also be considered to avoid future project risks and disputes.

4. (a) State three reasons why temporary structures such as site offices and stores are important during construction.

Temporary structures serve as **control centers** where engineers and supervisors manage drawings, documents, and communication.

They provide **safe storage for tools and materials**, protecting them from theft, weather, and damage.

These structures also offer **resting and shelter areas** for workers, ensuring comfort and improving productivity.

(b) A **site office** is a temporary building used by the project manager and technical team for coordination, meetings, and documentation.

A **materials store** is a secure structure used for storing cement, nails, tools, and equipment under proper conditions.

Labor rest sheds or shelters offer workers protection from sun and rain during breaks or in case of bad weather.

(c) Poor planning of temporary facilities can lead to **disorganization and confusion**, reducing efficiency and slowing down operations.

Lack of secure storage increases the risk of **theft, material damage, and wastage**, affecting project costs and timelines.

Inadequate welfare facilities may result in **worker dissatisfaction and low morale**, leading to absenteeism and low productivity.

5. (a) What is a construction progress report? Give two reasons why it is necessary in project management.

A construction progress report is a **document that records and communicates the status** of work done on a construction site over a specific period.

It is necessary because it helps **track the project timeline**, showing whether work is progressing as scheduled or facing delays.

It also assists in **decision-making and accountability**, providing evidence of activities completed, challenges encountered, and resources used.

(b) A good progress report includes a **summary of work completed** during the reporting period.

It records **work in progress and scheduled tasks**, showing the timeline for upcoming activities.

It highlights **issues or delays** affecting progress, such as weather, labor shortages, or material supply problems.

It contains **site photos, labor numbers, material usage**, and safety observations, providing a comprehensive site overview.

(c) Poor reporting can cause **miscommunication between the contractor and client**, leading to disagreements or mistrust.

Inaccurate reports may result in **delayed payments**, as clients or financiers may hesitate to release funds without reliable progress data.

Lack of proper reporting can lead to **schedule overruns**, as problems may go unnoticed until they cause serious setbacks.