

451/3  
COMPUTER STUDIES  
Paper 3  
(Project)  
January 2024 to July 2024  
7 months



**THE KENYA NATIONAL EXAMINATIONS COUNCIL**  
**Kenya Certificate of Secondary Education**  
Computer Studies  
**Paper 3**  
**(Project)**  
7 months

**Instructions to candidates**

- (a) *Candidates are expected to use a Database Management System when developing their projects.*
- (b) *A soft copy of the system and documentation must be stored in a removable storage medium (CD-R/CD-RW/DVD-R/DVD-RW).*
- (c) *Candidate's name and index number should appear on the cover page of the documentation and on the storage medium.*
- (d) *Each candidate should hand in a hard copy and a soft copy of the project documentation.*
- (e) ***Candidates should answer the questions in English.***

**This paper consists of 3 printed pages.**

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

## UZIMA BOREHOLE DRILLING SYSTEM

Uzima Company is one of the leading borehole service providers in Kenya. They provide borehole drilling services to industrial, commercial and domestic clients.

The company offers either symmetric drilling, or core drilling, or geo-technical drilling. After the drilling, they install a water pump. Water pumps are of various types such as submersible electric pumps, solar pumps and hand pumps. The pumps are charged according to; the depth of the borehole, height of the tank above the ground and the type of the pump. They also install tanks and charge depending on the capacity of the tank in litres. The company also offers other services such as plumbing and pump maintenance. The plumbing services are charged according to the type of pipes, diameter of the pipes in inches, length of the pipes and the number of outlets.

Clients who are interested in these services are required to apply. The company then records their details which include: Name, address, telephone number and details of the intended borehole location among other details. Each client is required to pay survey fees and local authority fees as shown in Table 1.

**Table 1: Survey and local authority fees**

Client category	Survey fees	Local Authority fees
Industrial	20,000	50,000
Commercial	15,000	30,000
Domestic	7,000	10,000

Other services are charged based on the rates in Table 2, Table 3 and Table 4.

**Table 2: Drilling Services**

Type of drilling	Down payment fee
Symmetric drilling	130,000
Core drilling	225,000
Geo-Technical drilling	335,000

**Table 3: Pump Installation**

Type of pump	Cost
Submersible electric pump	90,000
Solar pump	65,000
Hand pump	30,000

**Table 4: Depth and Height in Metres**

<b>Depth and Height</b>	<b>Cost per Meter</b>
1 - 100	1,000
101 - 200	1,500
201 - 300	2,000
Over 300	2,500

Every client is charged 16% tax on the total cost of the service offered.

Develop a well-documented computerized database system that would:

- (a) Register and maintain a list of clients.
- (b) Register items and services provided by the company.
- (c) Computer each of the following:
  - (i) Total amount to be paid by each client.
  - (ii) Total amount charged on plumbing.
  - (iii) Tax paid by each client.
  - (iv) Total fees charged for survey and local authority.
  - (v) Total revenue generated by the company from each service from all clients.
- (d) Generate appropriate reports.