THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL
CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

036/2

COMPUTER STUDIES 2
(For School Candidates Only)

TIME: 3 Hours

Instructions

1. This paper consists of three (3) questions.
2. Answer one (1) question only.
3. Mathematical tables, mathematical formulae and slide rules may be used.
4. Electronic calculators are not allowed in the examination room.
5. Show all steps in your working giving answers at each stage.
6. Cellular phones are not allowed in the examination room.
7. Write your Examination Number on every page of your answer booklet(s).

This paper consists of 2 printed pages.
1. The value of $x$ in quadratic equations can be obtained by using the general formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

We would like to write a program which when supplied with values of $a$, $b$ and $c$ will print the values of $x$.

(a) Draw a flow chart to represent the design of the program.

(b) Using BASIC language, write a program which will implement the drawn flow chart to solve the quadratic equation.

2. The following is the inventory data in Tshs:

<table>
<thead>
<tr>
<th>Part number</th>
<th>Description</th>
<th>Unit price</th>
<th>Quantity</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0742</td>
<td>Transistor</td>
<td>3,700</td>
<td>155</td>
<td>xx</td>
</tr>
<tr>
<td>3867</td>
<td>Hand truck</td>
<td>9,000</td>
<td>100</td>
<td>xx</td>
</tr>
<tr>
<td>4987</td>
<td>Chair</td>
<td>5,000</td>
<td>850</td>
<td>xx</td>
</tr>
<tr>
<td>5127</td>
<td>Hat rack</td>
<td>1,300</td>
<td>85</td>
<td>xx</td>
</tr>
</tbody>
</table>

Write a BASIC program that will read data and calculate the values (xx) and total value (xx). The program will display all part numbers, descriptions, unit price, quantity, value and the total value.

3. Write a BASIC program to handle 4 types of conversions. The program should have a menu for conversion choice and will allow the user to make choice among the alternatives and the program will compute the conversion. The conversions to be computed in the same program are

(a) kilometers to miles
(b) miles to kilometres
(c) Celsius to Fahrenheit
(d) Fahrenheit to Celsius

Hint: 1 kilometer equals to $\frac{5}{8}$ miles and 1 Fahrenheit equals to $\frac{9}{5}$ Celsius + 32