

061006T4ICT

COMPUTER SCIENCE LEVEL 6

ICT/OS/CS/CC/01/6/A

APPLY BASIC ELECTRONIC SKILLS

NOV/DEC 2023



**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION
COUNCIL (TVET CDACC)**

WRITTEN ASSESSMENT

TIME: 3 Hours

INSTRUCTIONS TO CANDIDATE

1. *The paper consists of **two** sections: **A** and **B***
2. *Answer **ALL** questions in Section **A** and any **Three** from section **B***
3. *Marks for each question are indicated in the brackets*
4. *A separate answer booklet will be provided*
5. *Do not write on the question paper*

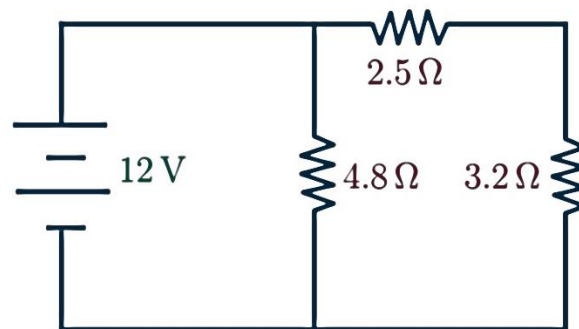
Candidates should answer the questions in English

This paper consists of four (5) printed pages.

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

SECTION A: (40 Marks)*(Answer all the questions in this section)*

1. State TWO types of transistors that are used in electronic equipment. (1 Mark)
2. Kiko is interested in assessing his comprehension of computer number systems. Convert the following binary equivalents into octal number and decimal number respectively:
 - a) Binary 1011.1011_2 to octal number (2 Marks)
 - b) Binary 0.0111_2 to decimal number (2 Marks)
3. Using the circuit depicted in Figure 1, determine the current passing through it when it is powered by a 12-volt source. (3 Marks)

*Figure 1*

4. Highlight TWO advantages of using Integrated Circuits (ICs) as the prevailing technology for manufacturing electronic devices. (2 Marks)
5. Explain the term *diode* as used in basic electronics. (2 Marks)
6. Distinguish between *inductance* and *conductance* as used in electronics. (2 Marks)
7. Describe the position of the chemical potential in an n-type semiconductor at room temperature. (2 Marks)
8. Explain the meaning of the following terms as used in semiconductors:
 - a) P–N junction (2 Marks)
 - b) Doping (2 Marks)