

061005T4ICT

ICT TECHNICIAN LEVEL 5

IT/OS/ICT/CC/01/5

APPLY BASIC ELECTRONIC

March/April 2026



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

WRITTEN ASSESSMENT

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATE

1. This paper consists of TWO sections: A and B.
2. Answer ALL questions in section A and ANY THREE (3) questions in section B.
3. Marks for each question are indicated in the brackets.
4. Candidates are provided with a separate answer booklet
5. Do not write on the question paper.

This paper consists of THREE (3) printed pages

**Candidate 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 questions in this section

1. In electronics, electrical values are measures in physical quantities. Giving the SI unit for each describe the following quantities (4 Marks)
 - a) Current
 - b) Voltage.
2. Conductors and semiconductors behave differently with electricity. Explain how they are different in terms of electron movement. (4 Marks)
3. Computers use RAM and ROM memory in the daily operation. Explain these two terms. (4 Marks)
4. In digital systems, we use different number systems for data representation. Convert the decimal number 45 into: (4 Marks)
 - a) Binary
 - b) Octal
5. New trends are changing electronics. Describe TWO recent trends in modern electronics. (4 Marks)
6. An inductor is a part used in circuits. Explain TWO things an inductor does in an electronic circuit. (4 Marks)
7. An ICT technician acquired transistors to be used during a basic electronics lesson. Describe TWO types of transistors he could have acquired. (4 Marks)
8. Tools help us work safely with electronics. Write one use for each tool. (4 Marks)
 - a) Wire stripper,
 - b) Pliers,
 - c) Wire cutter,
 - d) Screw driver
9. Circuits can be analog or digital. Explain how analog circuits and digital circuits are different. (4 Marks)
10. Explain the differences between AC circuits and DC circuits. (4 Marks)

SECTION B (60 MARKS)

Answer THREE questions in this section

11.

- a) The ICT technician intends to use the P-N junction diodes. Describe the structure of this P-N junction diode. (6 Marks)
- b) Explain the following terms in relation to basic electronics. (8 Marks)
 - i) Forward biasing.
 - ii) Reverse biasing
 - iii) Power
 - iv) Energy
- c) Explain the following number systems (6 Marks)
 - i. Decimal,
 - ii. Binary,
 - iii. Hexadecimal.

12.

- a) Describe THREE types of electrical circuits (6 Marks)
- b) Draw a well labeled simple DC circuit consisting of a battery, resistor, a bulb and switch. (8 Marks)
- c) Perform BCD addition for $37_{10} + 49_{10}$. Show all steps. (6 Marks)

13.

- a) By giving one example for each, differentiate between optical and magnetic storage. (6 Marks)
- b) In this era of modern technology has come with electronic evolution not spared. Explain THREE challenges of emerging trends of modern electronics (6 Marks)
- c) Cache memory plays critical role in a computer system. Explain FOUR such roles. (8 Marks)

14.

- a) A student used diodes in electronic circuits in a computer system. Explain THREE practical applications of these diodes. (6 Marks)
- b) Perform the following Number conversions
 - (i) $91B_{16}$ to octal (4 marks)
 - (ii) 376_8 to hexadecimal (4 marks)
- c) During a basic electronics class, students were asked to assemble an electronic computing device. Explain THREE tools the student could use. (6 Marks)