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071305T4EOP

ELECTRICAL OPERATION (POWER OPTION) LEVEL 5

ENG/OS/PO/CR/04/5/A

Demonstrate Understanding of Electronics

March/April 2025

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

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PRACTICAL ASSESSMENT

TIME: 3 HOURS

INSTRUCTIONS TO CANDIDATE:

1. **DO NOT** write on this question paper.
2. Must adhere to Environmental, Health and Safety (EHS) regulations.
3. **DO NOT** power the circuit without assessor's permission.
4. A separate plain paper will be provided.

This paper consists of THREE (3) printed pages.

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

Figure 1 shows schematic diagram of a DC power supply

Carry out the following tasks:

(a) Identify resistors R_1 and R_L and the terminals of the transistor.

(b) Using the components and tools provided, fabricate the circuit in a strip board.

(c) Power the circuit, measure and record the voltages at the following test points:

(i) TP1;

(ii) TP2;

(iii) TP3;

(iv) TP4;

(v) TP5.

(d) Measure and record the current flowing through resistor R_1.

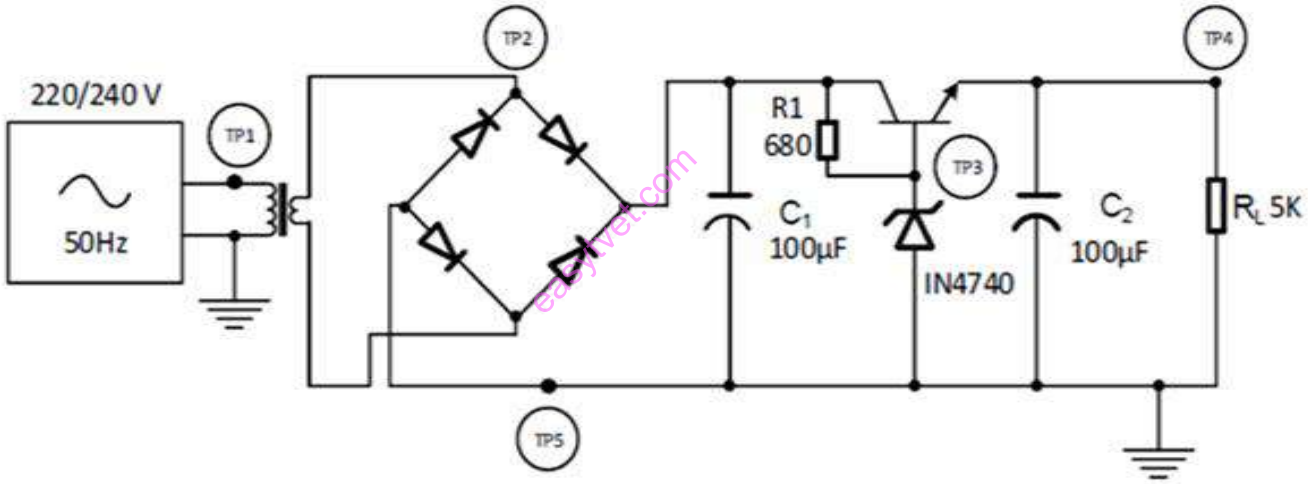


Figure 1: Circuit diagram of a DC power supply

You have been provided with the following resources for the practical tasks:

- Assorted resistors
- 4 rectifier diodes
- Transformer (240V/12V)
- Alternating current 240V source
- Zener diode
- Two 100 µF capacitors
- Transistors BC 547 or equivalent
- Digital Multimeter

- Jumper wires
- Strip board
- Solder wire
- Soldering iron/gun
- Electronic tool kit

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