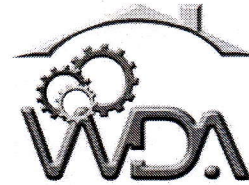


**CEL & ETL :  
General Electronics**

**T048**

**Friday, 01/11/2013  
1:30 - 4:30 PM**

**WORKFORCE DEVELOPMENT AUTHORITY**



**P.O.BOX 2707 Kigali, Rwanda Tel: (+250) 255113365**

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**ADVANCED LEVEL NATIONAL EXAMINATIONS, 2013,  
TECHNICAL AND PROFESSIONAL TRADES**

**EXAM TITLE : General Electronics**

**OPTIONS:**

- Computer Electronics (CEL)
- Electronics and Telecommunication (ETL)

**DURATION: 3hours**

**INSTRUCTIONS:**

The paper contains **three (3)** sections :

**Section I:** Sixteen (16) questions, all **Compulsory;** **55marks**

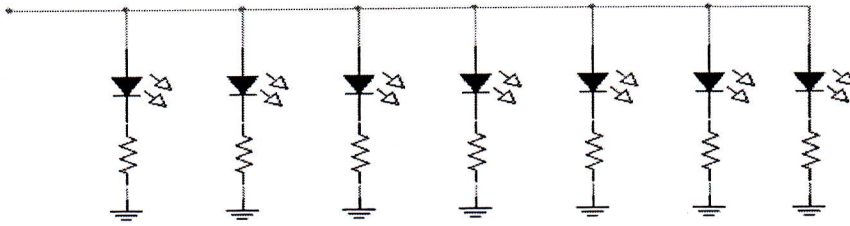
**Section II:** Five (5) questions, **Choose any three (3);** **45marks**

**Section III:** Three (3) question, **choose any ONE (1)** **15marks**







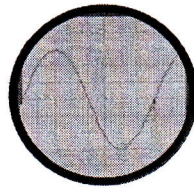


20. a) Identify the measurement unit of the following variables and indicate the symbol for the variable and for the corresponding unit. **9marks**

- i) Pulse                      ii) Admittance                      iii) Phase

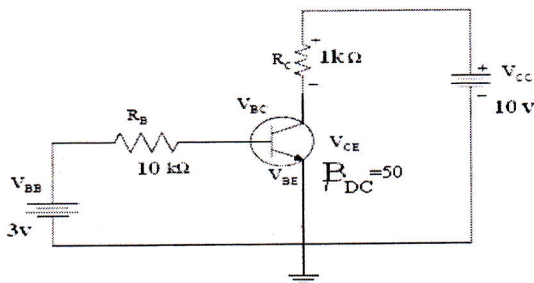
b) Why a good voltmeter must have a high value of internal resistance? **1mark**

21. The following signal is shown on an oscilloscope screen. If the device is adjusted such that the time base is 5 ms/div and vertical sensibility is 2 V/div. Determine Amplitude of the signal, period and frequency. **10marks**



**Section III : Choose and Answer any one (1) question      15marks**

22. Determine whether or not the transistor in figure bellow is in saturation. Assume  $V_{CE}(\text{sat}) = 0.2$ . **15marks**



23. a. What is cut-in voltage in semiconductor? **3marks**  
 b. Distinguish between forward active, saturation, cut-off and reverse active operation of a transistor. **12marks**

24. The output of the circuit b) is connected to the input of the circuit a). If on the inputs of b) is applied a sequence of these numbers (from down to up): A=0000; B= 0001; C=0011; D=0010; E= 0110; determine the outputs of each circuit and make a conclusion. **15marks**

