

READ AND ANSWER N° 1

PART 1

You must make an exposé on the following subject:

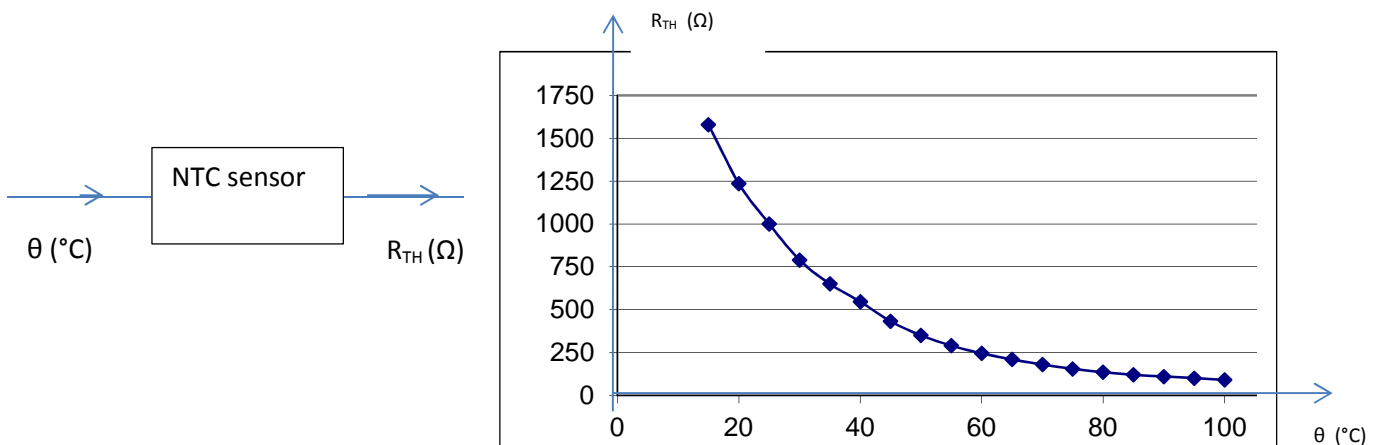
How sensors have changed our everyday life?

The following are guidelines for your exposé and you may use the 2 documents attached to this work.

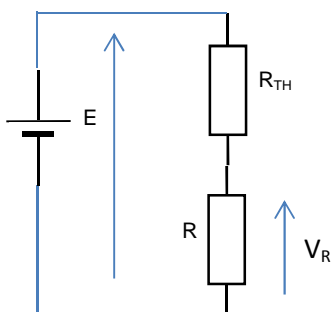
- ✓ Make an introduction about sensors.
- ✓ Name at least 3 sensors which can be very helpful for our everyday life. Explain briefly their functioning.
- ✓ Give at least 2 examples of future generation of sensors. Discuss about their advantages and disadvantages.
- ✓ Make a conclusion.

PART 2

We are going to consider a NTC sensor and its graph is given:



- a) Give the input and output quantity of the NTC sensor.
- b) The sensor is said to be a non-linear sensor. Why ?
- c) NTC means negative temperature coefficient. Analyse the graph to justify the term "NTC".
- d) The following circuit is given with $E = 10$ V and $R = 1$ kΩ.



- Explain why you can apply the voltage divider formula to calculate V_R at 20 °C and 60°C.
- Calculate V_R at these 2 temperatures.