Appendix B

WRITTEN TEST

BASIC ELECTRICAL MODULE

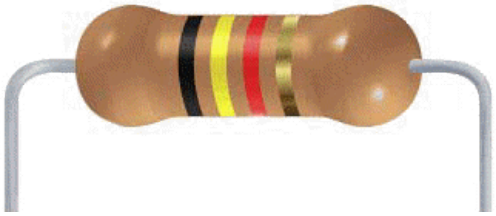
FIRST NAME: _____

LAST NAMES: _____

SIGNATURE: _____

1. Please, mark the correct answer with an x.

1.- Which value does the resistor in the figure have?



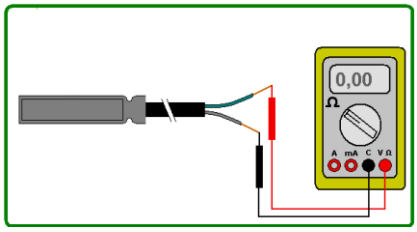
a) 2100 ohms; tolerance 5%.
b) 500 ohms; tolerance 5%.
c) 1400 ohms; tolerance 10%.
d) 400 ohms; tolerance 5%.

2.- Which function does a sensor serve?

a) Converts a electrical signal into another different one.
b) Converts any signal into an electrical signal.
c) Converts any signal into another one which is different by nature.

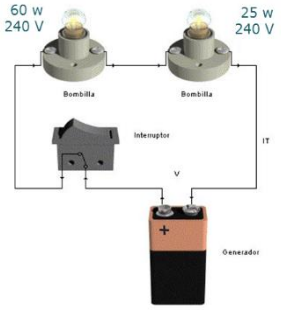
3.- In the maintenance workshop a PTC 1000 probe is being checked; the figure shows what can be observed on the multi-meter. In which situation is the probe?

a) It is in a short circuit.
b) It is in an open circuit.
c) It is measuring 0 ºC.



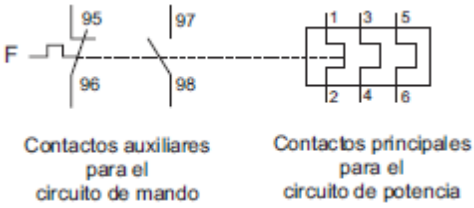
4.- In a workshop the circuit shown in the figure has been set up. Which bulb lights up brighter?

a) The 60 W bulb.
b) The 40 W bulb.
c) The two light up with the same intensity.



5.- Which element of the installation is represented by the following symbol?

a) The contactor coil and its two contacts open and closed.
b) The thermal relay.
c) Thermal magnetic circuit breaker.



6.- There is to be an electric power plant installed to my village which will deliver a performance of 100 kW. Which would be the line that produces the least losses?

a) 220 V
b) 380 V
c) 220kV

7.- An electric water kettle of 2,2 kW works at 220 V. Which current does it consume?

a) 10 A.
b) 5 A
c) 0,1 A.

8.- Identify the element which can be seen in the figure.

a) Power contactor.
b) Auxiliary contactor.
c) Thermal relay.

9.- With which units do you measure power?

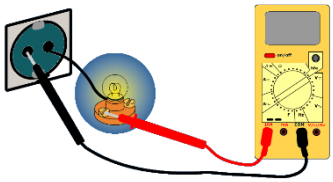
a) Watts.
b) Amperes
c) Volts.

10.- The following symbol represents:

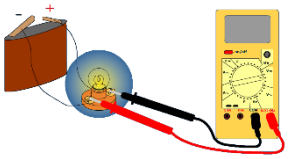
a) The diode.
b) The arrow which indicates the flow direction of the current.
c) It does not refer to any electric symbol.

11.- For measuring voltage: Which of the followings setups is correct?

a)



b)



c) Neither of these answers is correct. The voltage is measured by the clamp meter.

12. I have to change a contactor, the engine consumes 10 A and the control unit works at 24 V as a norm. Which characteristics must this contactor have?

a) Power 220 V 24 A. Control unit 220 V.
b) Power 220 V 10 A Control unit 220 V.

c) Power 220 V, 15 A Control unit 24 V.

13.- The following symbol corresponds to:

a) Single-phase alternating current.
b) Direct current.
c) Three phase alternating current.

14.- If the selector of the multimeter is set on audible signal, each time it sounds means that:

a) There is continuity between the two points being measured
b) There is no continuity between the two points being measured.
c) The multimeter is damaged.

15. The power contacts of a three phase contactor are identified by:

a) 1-3-5 at the lead-in 2-4-6 at the lead-out.
b) 13-14
c) There is no norm in this respect.

16.- Which value does a resistance have if it consumes 10 A and the voltage is 220V?

a) 2,2 Ω
b) 22 Ω
c) 0,045

17.- Two lamps in parallel, of the same power, light up identically.

a) True.
b) False.

18.- The component in the figure is:

a) A relay
b) A contactor.
c) A time relay.

19.- In order to measure resistance the electricity supply is disconnected.

a) True.
b) False.

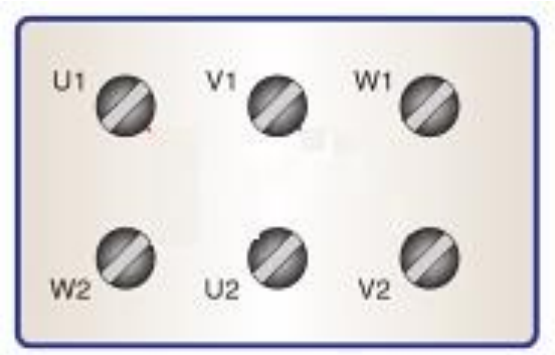
20.- The clamp meter allows the electric current of two conductors to be measured at the same time.

a) True.
b) False.

2.- Indicate on this multimeter where the function selector must be set in order to measure a resistance with the value 100kΩ .

3.- Indicate on this multimeter where the function selector must be set if we want to measure the voltage of our house (230 V).

4.- An enginge of 230/400 V is to be installed in a workshop where the voltage is 400V. Draw how the terminal box would need to be connected in order to make the named engine work.



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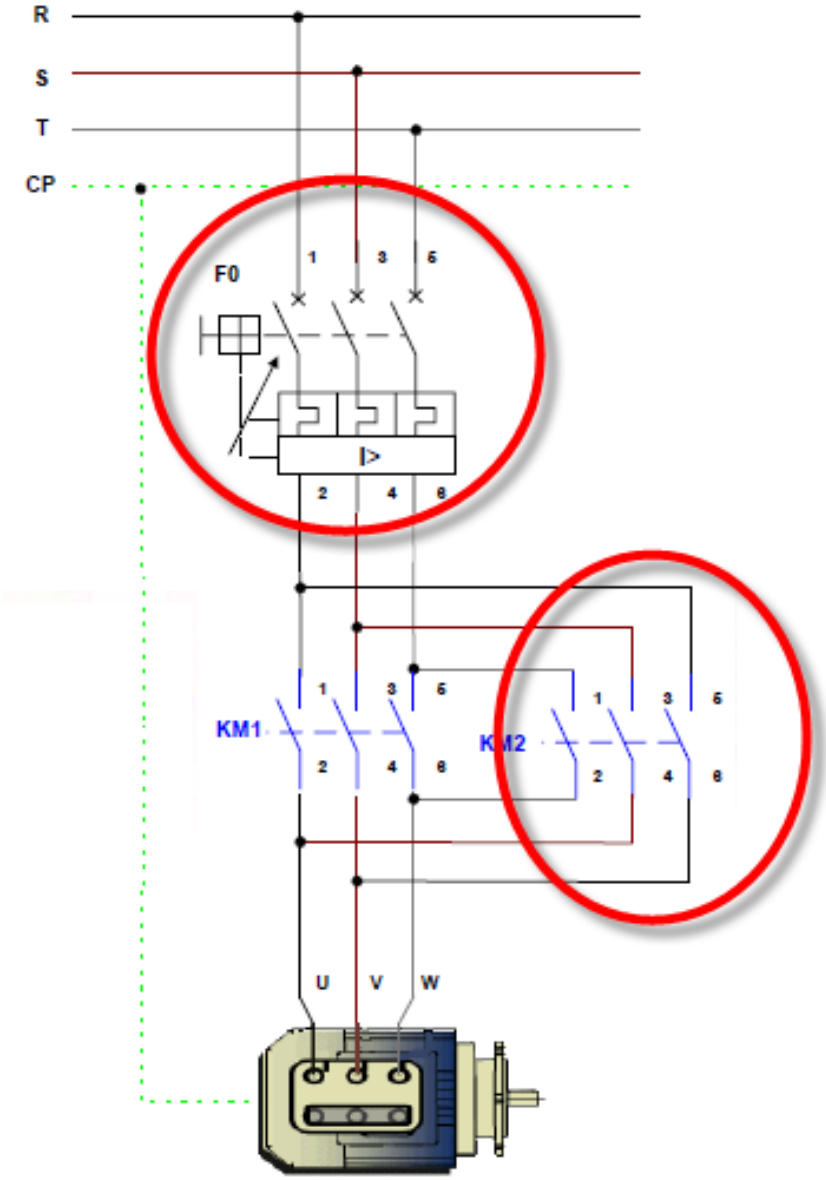
5.- Identify the elements which can be found in the circle