

Electrician

Mock test

Knowing the Profession

Entrance EL 2020

Time

45 minutes

Maximum points

40 points

Aids

Calculator

Date

Name

Tasks	Maximum points	Your points
1 Electric circuit symbols/components	10	
2 Calculation of basic electric circuit.	10	
3 Calculation of electrical energy	5	
4 Basic knowledge of Electricity	15	
Total	40	




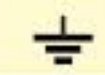
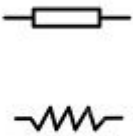

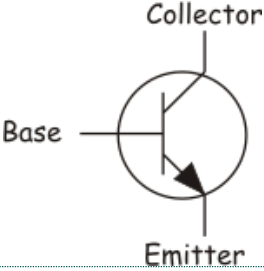
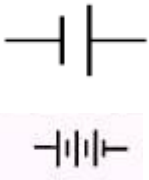

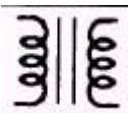
Date

Examiner(s)

Note: Using unauthorized aids or copying from other students will result in zero points for this test.

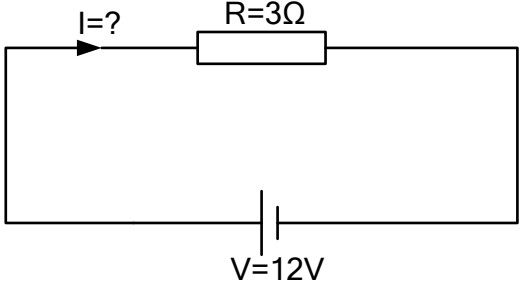
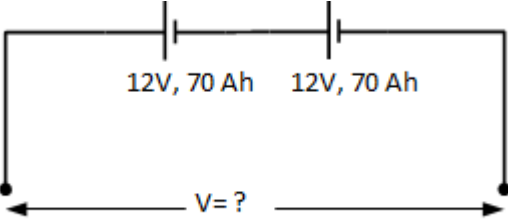
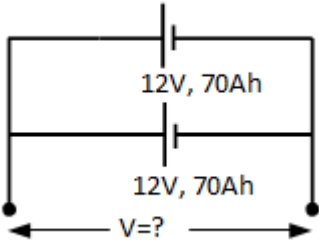
1 Name The Circuit Symbols/Components.

10 points

Symbols/Components	Solution
a) 	Ammeter
b) 	Voltmeter
c) 	Switch
d) 	Earthing / Grounding
e) 	Resistor
f) 	Capacitor
g) 	Transistor
h) 	Cell / Battery
i) 	Diode
j) 	Transformer

2 Calculation of basic electric circuit.

10 points

Task	Solution
<p>a)</p> 	<p>Ohm's Law</p> <p>$V=IR, I = V/R, I = 12 \text{ V} / 3\Omega, I = 4 \text{ A}$</p>
<p>b)</p> 	<p>KVL</p> <p>Voltage Series</p> <p>$V_T = V_1 + V_2$</p> <p>$= 12 \text{ V} + 12 \text{ V}$</p> <p>$= 24 \text{ V}$</p>
<p>c)</p> 	<p>KVL</p> <p>Voltage Parallel</p> <p>$V_T = V_1 = V_2 = 12 \text{ V}$</p>

3 Calculation of electrical energy

5 points

Task	Solution
<p>The following are the details of domestic electric supply for a month:</p> <p>(a) 20 fluorescent lamps of 20 watt each working for 5 hours per day</p> <p>(b) 1000 watt electric iron working for 3 hours per day</p> <p>What will be the electrical energy (kWh) in this month?</p>	<p>(a) kWh per day = $\frac{20 \times 20W}{1000} \times 5 \text{ hrs}$ = 2 kWh</p> <p>(b) kWh per day = $1000 W \times 3 \text{ hrs}$ = 3 kWh</p> <p>(a) + (b) kWh per day = 2 kWh + 3 kWh = 5 kWh</p> <p>(a) + (b) kWh per month = 5 kWh \times 30 days = 150 kWh</p>

4 Basic knowledge of Electricity

15 points

Task	Solution
a) What are the resources to produce Electricity ?	<p>The resources to produce Electricity are</p> <ol style="list-style-type: none"> 1. Fossil fuels (coal, gas, oil) 2. Hydroelectric power 3. Solar power 4. Wave or Tidal power 5. Wind power 6. Geothermal energy/Nuclear power 7. Biomass
b) Why do people use Generators and Motors ?	<p>People use Generators for electricity.</p> <p>People use Motors which draw electricity for fans, pumps and drives.</p>
c) What do you understand by the terms:	Conductors

<p>Conductors, Insulators and Semiconductors?</p> <p>Give three examples of Conductors, Insulators and Semiconductors.</p>	<p>Electrical materials which offer least resistance to the flow of electric current.</p> <p>Insulators</p> <p>Electrical materials which offer very high resistance to the flow of electric current.</p> <p>Semiconductors</p> <p>Electrical materials which lie between conductors and insulators.</p> <p>Three examples of Conductors</p> <p>Copper, Aluminium, Tin</p> <p>Three examples of Insulators</p> <p>Mica, Glass, Porcelain</p> <p>Three examples of Semiconductors</p> <p>Germanium, Silicon, Selenium</p>
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