BE LAB TASK # 01

Part B.

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TOPIC: SAFETY MEASURE.

Task:

Calculations/Observations:

1, First Make a Human body Type Resistor's Circuit a Dry type And Then Measure the Resistance between the following Points of your Body:

- **Right Hand To Left Hand:**
- **R1= 3000 Ohm.**
- **Right Hand To Right Ankle:**
- **R2= 1 000 000 Ohm.**
- **Left Hand To Left Ankle:**
- **R3= 1 005 000 Ohm.**

2, First Make a Human body Type Resistor's Circuit a Wet type And Then Measure the Resistance between the following Points of your Body:

- **Right Hand To Left Hand:**
- **R1= 300 Ohm.**
- **Right Hand To Right Ankle:**
- **R2= 1200 Ohm.**
- **Left Hand To Left Ankle:**
- **R3= 1500 Ohm.**

3, Is the resistance is lower when areas are wet?

Ans. Yes.

4, If the entire Body was wet would the resistance be even lower?

Ans. Yes the resistance would have been even lower if the entire body was wet because Electricity/Current travels faster through water(which made the entire body wet).

5 , From the chart of Fig 1-1 you know that 0.1 ampere of current can be fatal.
Let's use a form of Ohm Law to determine how much voltage is necessary to force 0.1 of current through the resistance of your body. We'll use the
equation.

Voltage =current x resistance

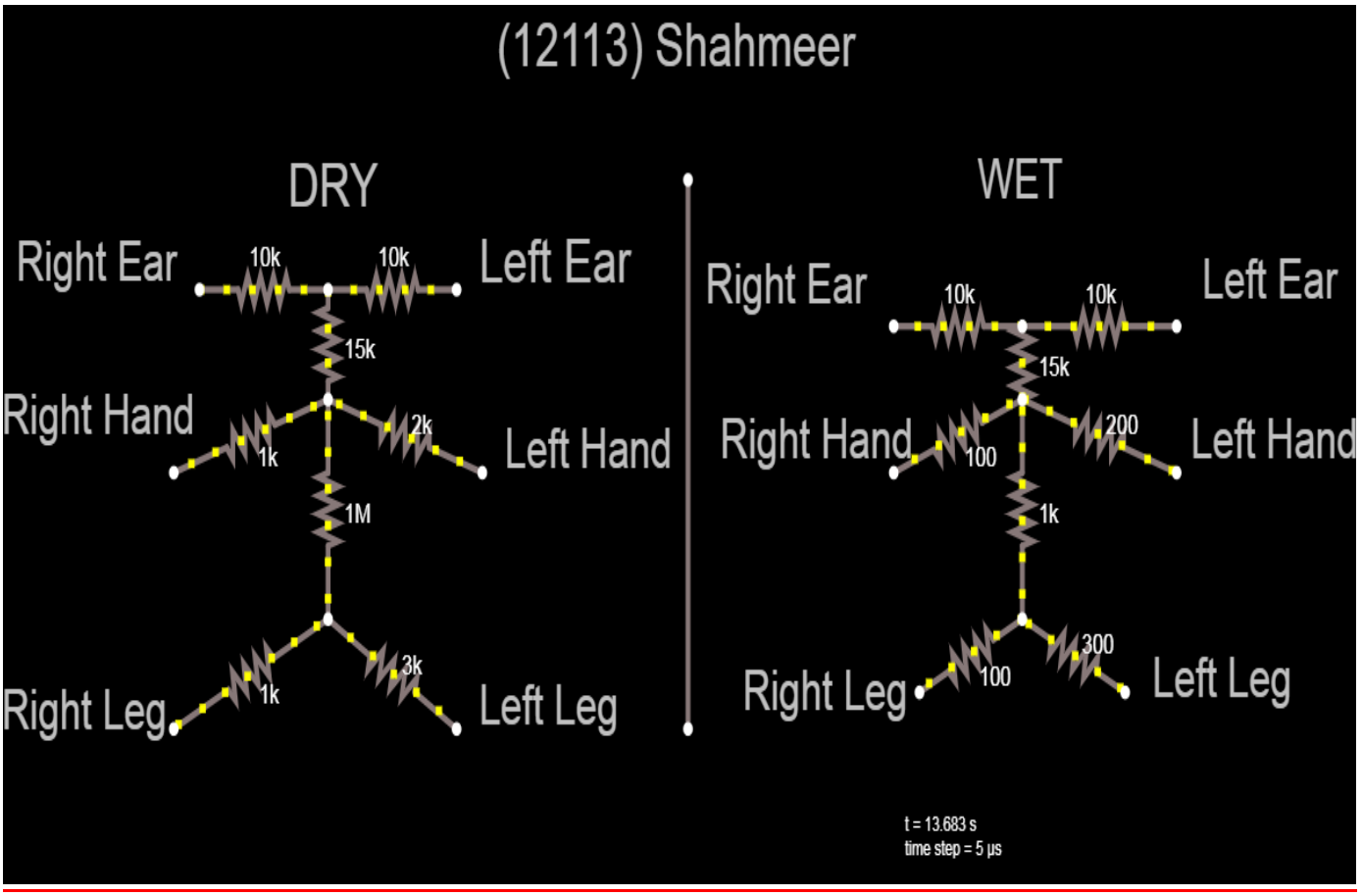
Since current is 0.1 ampere the formula becomes voltage=0.l x resistance.
Substitute the resistances measured when contact areas were dry into the formula to calculate the voltage necessary to force 0.1 ampere of current between the selected points of your body.

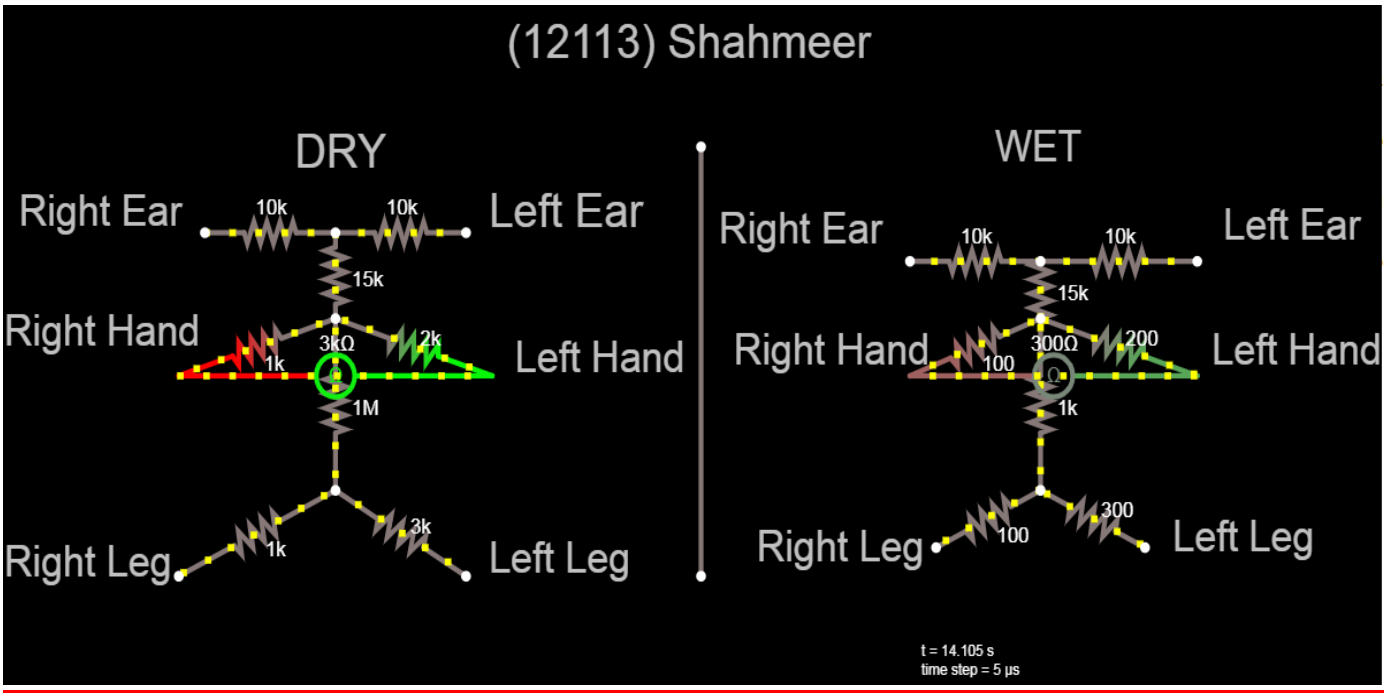
Right hand to left hand voltage = 0.1x R1= 300 volts
Right hand to right ankle voltage = 0.1x R2= 100000 volts
Left hand to left ankle voltage = 0.1x R3= 100500 volts

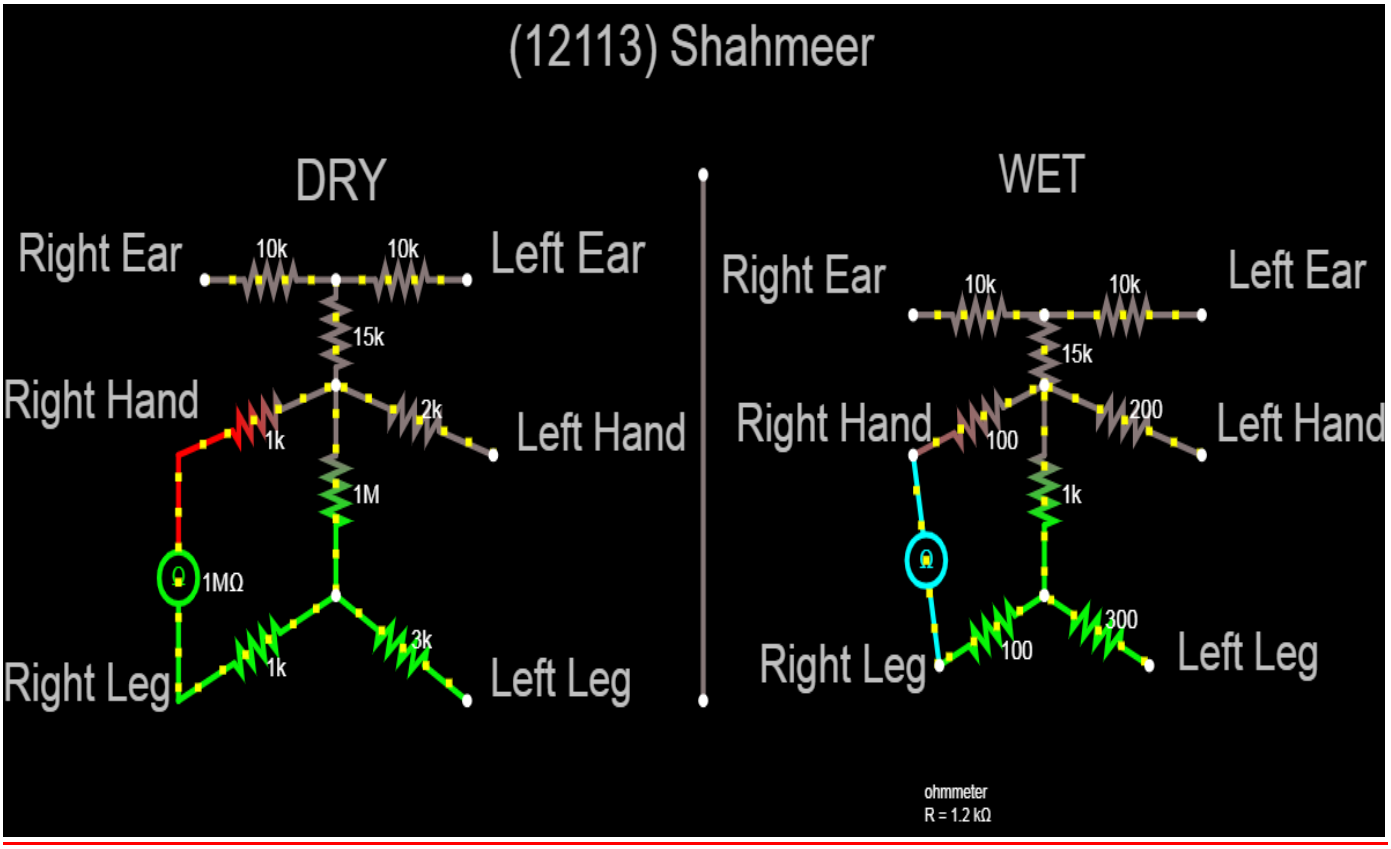
Now substitute the resistance measured with wet contact areas.

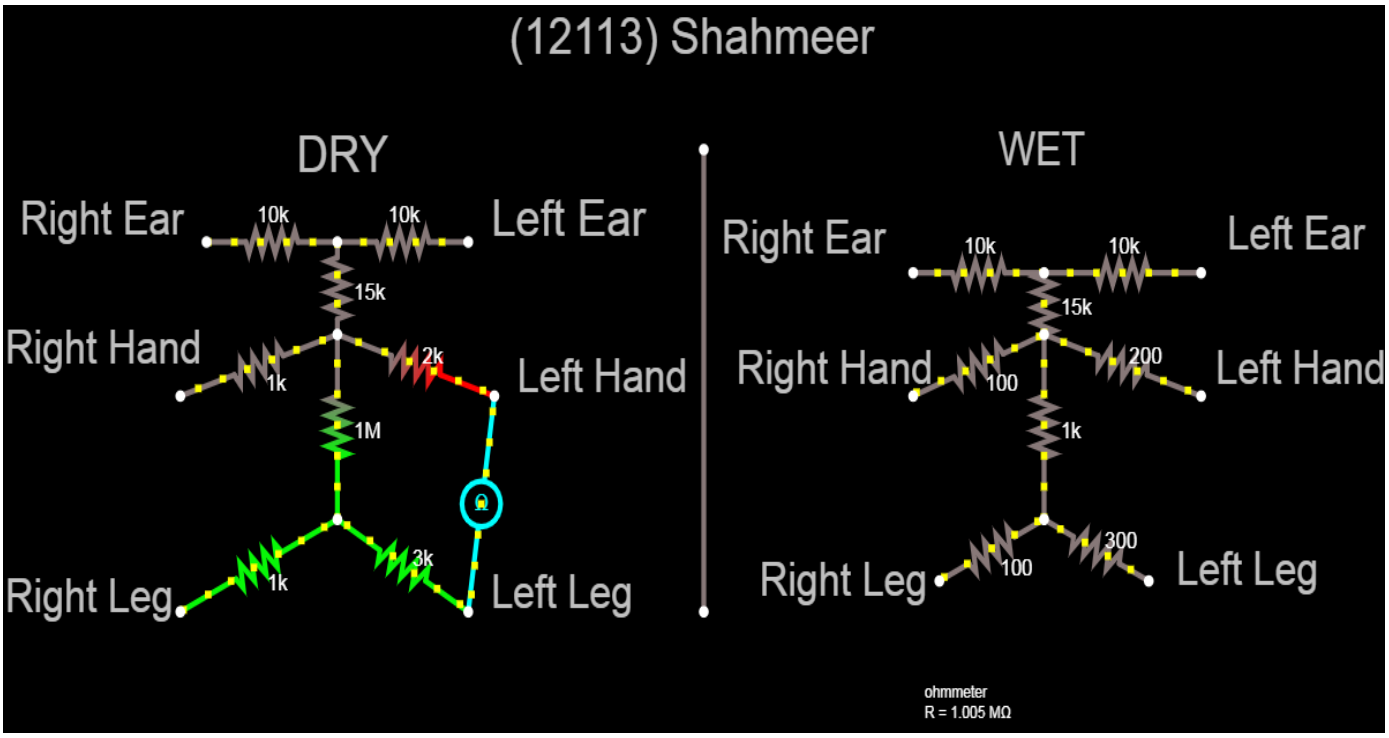
Right hand to left hand voltage = 0.1x R4= 30 volts
Right hand to right ankle voltage = 0.1 x R5= 120 volts
Left hand to left ankle voltage = 0.1 x R6= 150 volts

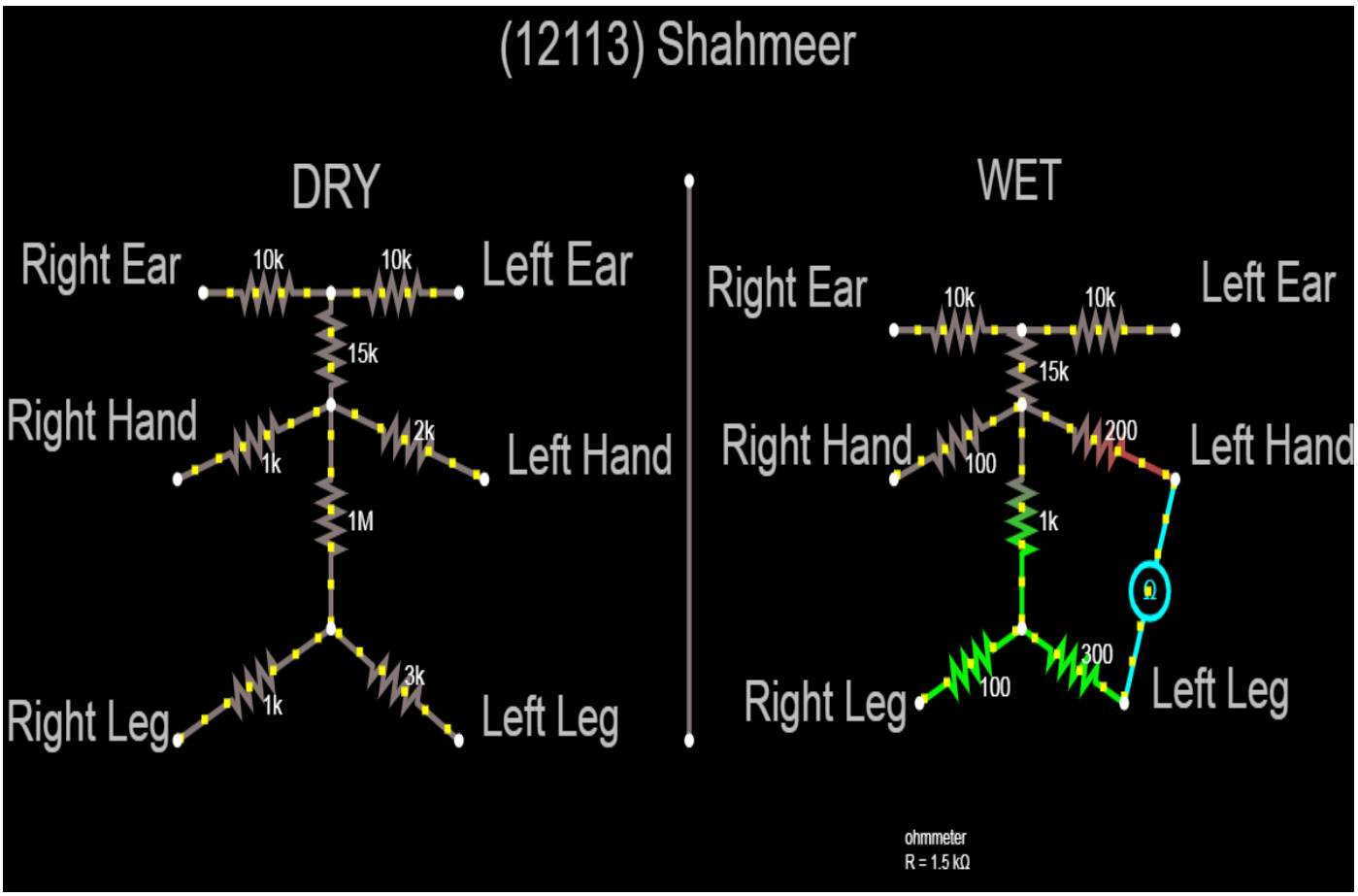
Screen shots:




(12113) Shahmeer
DRY
Right Ear
10k
10k
Left Ear
15k
Right Hand
3kΩ
1k
2k
Left Hand
1M
3k
Right Leg
1k
Left Leg
WET
Right Ear
10k
10k
Left Ear
15k
Right Hand
300Ω
100
200
Left Hand
1k
300
Right Leg
100
Left Leg
t = 14.105 s
time step = 5 µs


(12113) Shahmeer
DRY
Right Ear
10k
10k
Left Ear
15k
Right Hand
1k
2k
Left Hand
1M
1MΩ
3k
Right Leg
1k
Left Leg
WET
Right Ear
10k
10k
Left Ear
15k
Right Hand
100
200
Left Hand
1k
300
Right Leg
100
Left Leg
ohmmeter
R = 1.2 kΩ


(12113) Shahmeer
DRY
Right Ear
10k
10k
Left Ear
15k
Right Hand
1k
2k
Left Hand
1M
Ω
3k
1k
Right Leg
Left Leg
WET
Right Ear
10k
10k
Left Ear
15k
Right Hand
100
200
Left Hand
1k
100
300
Right Leg
Left Leg
ohmmeter
R = 1.005 MΩ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DRY
Right Ear
10k
10k
Left Ear
15k
Right Hand
1k
2k
Left Hand
1M
3k
1k
Right Leg
Left Leg
WET
Right Ear
10k
10k
Left Ear
15k
Right Hand
100
200
Left Hand
1k
Ω
100
300
Right Leg
Left Leg
ohmmeter
R = 1.5 kΩ

LINK:

https://tinyurl.com/y5zbz754