Assignment 4
The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2019-02-27, 23:59 IST.

1) The complex plane plot of an impedance spectrum is given below.

At first, what is the circuit that one should employ to model this spectrum?
At first, which of the following circuits should one employ to model this spectrum?

No, the answer is incorrect.
Score: 0

Accepted Answers:

2) The complex plane plot of an impedance spectrum is given below.

At first, which of the following circuits should one employ to model this spectrum?
3) Consider the following circuit given in (i). Given that $R_3 = 1000\,\Omega$, $C_3 = 100\,\mu F$, $R_4 = 250\,\Omega$, find the value of element in the equivalent circuits given in

Value of $R_5 = \underline{\text{_________}}\,\Omega$

No, the answer is incorrect.

Score: 0

Accepted Answers:
4) Based on the data given in question 3 answer this.

Value of $R_6 = \quad \Omega$

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Numeric) 200

5) Based on the data given in question 3 answer this.

Value of $C_6 = \quad \mu F$

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Numeric) 0.0025
(Type: Numeric) 2500

6) Consider the following circuit given in (i). Given that $R_3 = 1000 \Omega$, $C_3 = 100 \mu F$, $R_4 = 250 \Omega$, find the value of element in the equivalent circuits given in

Value of $R_7 = \quad \Omega$

No, the answer is incorrect.
Score: 0
7) Based on the data given in question 6 answer this

Value of $R_8 = \underline{_______} \, \mu F$

Hint

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Numeric) -50

8) Based on the data given in the question 6 answer this

Value of $L_8 = \underline{_______} \, \text{H}$

Hint

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Numeric) -6.25

9) Consider the impedance spectrum given below

Hint

Electrochemical Impedance Spectroscopy - - Uni... https://onlinecourses-archive.nptel.ac.in/noc19_...
The circuit (ii) can be used to model the spectrum in (i) provided the value of

- $R_3$ is negative
- $C_3$ is negative
- both of the above
- none of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
both of the above

10 Consider the impedance spectrum given below
The circuit (ii) can be used to model the spectrum in (i), provided the value of $R_2$ is negative either $(R_3, C_3)$ or $(R_4, C_4)$ are negative both of the above none of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
both of the above

Consider the following impedance spectra. In each case, what are the charge transfer and polarization resistances? (Approximate values are sufficient)
Consider the following circuits used to represent an electrochemical system. The resistor on the left represents solution resistance and the capacitor on the top represents double layer capacitor. In each circuit, determine the charge transfer resistance and polarization resistance.

\[ R_t = \underline{\phantom{00000}} \Omega \]

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 25,35

\[ R_p = \underline{\phantom{00000}} \Omega \]

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 75,85
Based on the data given in question 13, answer the following:

14) \( \text{Rt} = \) ________ \( \Omega \)

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 333,334

0.5 points

15) \( \text{Rp} = \) ________ \( \Omega \)

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Numeric) 1000

0.5 points
Based on the data given in question 15, answer this

Rt = ________ Ω

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Numeric) 25

0.5 points

Rp = ________ Ω

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Numeric) 60

0.5 points