Assignment 1

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

1. For the circuit shown below find the average power absorbed by the 10Ω resistor.

\[ \text{Power} = \frac{1}{2} \times 12 \times 8 = 48 \text{ W} \]

2. The power in the circuit shown is incorrect. Reformatted

No, the answer is incorrect.

3. For the network shown in the figure assume that the port impedance is \( Z_{in} = \frac{1}{3} \times \text{Rohm} \). Find the average power consumed by the network when \( R = 33\Omega \), \( C = 0.5\text{mF} \), and \( V = 71\text{ mV} \).

\[ \text{Power} = \frac{1}{2} \times (22\text{ V})^2 \times 33\Omega = 2328 \text{ W} \]

4. Find the average power absorbed by a 2Ω resistor, when the voltage waveform shown in the below figure is applied across it.

\[ \text{Power} = \frac{1}{2} \times (22\text{ V})^2 \times 2\Omega = 105.88 \text{ W} \]

5. For the circuit shown below, find the input power factor.

\[ \text{Input power factor} = \cos(\theta) = \frac{100}{100} = 1 \]

6. Find \( Z_{in} \) in the circuit shown below.

\[ Z_{in} = \frac{1}{100\Omega + 1\Omega} = 10\Omega \]

7. For the circuit shown in the figure determine the value of \( V_x \). If \( E = 123\text{ V} \).

\[ V_x = 246\text{ V} \]