Assignment 5

The due date for submitting this assignment is 11:59 pm on 2023-10-21.

1. A motor has a constant current of 3 A. Its coil has a resistance of 5 Ohms. The motor is operating at 120 V. Calculate the power output of the motor. (1 point)

2. A person is measuring the voltage across a resistor of 10 Ohms. They measure a voltage of 24 V. Calculate the current flowing through the resistor. (1 point)

3. A coil has an inductance of 5 mH and is connected to a 12 V battery. Calculate the energy stored in the coil when a current of 3 A flows through it. (1 point)

4. A capacitor has a capacitance of 2 F and is connected to a 10 V battery. Calculate the energy stored in the capacitor when a charge of 4 C is applied. (1 point)

5. A circuit consists of a resistor of 5 Ohms, an inductor of 2 mH, and a capacitor of 0.1 F. The circuit is connected to a 12 V battery. Calculate the impedance of the circuit. (1 point)

6. A coil has an inductance of 3 mH and is connected to a 6 V battery. Calculate the energy stored in the coil when a current of 2 A flows through it. (1 point)

7. A capacitor has a capacitance of 1 F and is connected to a 100 V battery. Calculate the energy stored in the capacitor when a charge of 5 C is applied. (1 point)

8. A coil has an inductance of 4 mH and is connected to a 12 V battery. Calculate the energy stored in the coil when a current of 3 A flows through it. (1 point)

9. A capacitor has a capacitance of 2 F and is connected to a 10 V battery. Calculate the energy stored in the capacitor when a charge of 4 C is applied. (1 point)

10. A coil has an inductance of 2 mH and is connected to a 6 V battery. Calculate the energy stored in the coil when a current of 2 A flows through it. (1 point)

11. A capacitor has a capacitance of 1 F and is connected to a 100 V battery. Calculate the energy stored in the capacitor when a charge of 5 C is applied. (1 point)

12. A coil has an inductance of 3 mH and is connected to a 12 V battery. Calculate the energy stored in the coil when a current of 2 A flows through it. (1 point)

13. A capacitor has a capacitance of 0.5 F and is connected to a 50 V battery. Calculate the energy stored in the capacitor when a charge of 2.5 C is applied. (1 point)

14. A coil has an inductance of 1 mH and is connected to a 3 V battery. Calculate the energy stored in the coil when a current of 1 A flows through it. (1 point)

15. A capacitor has a capacitance of 0.1 F and is connected to a 1 V battery. Calculate the energy stored in the capacitor when a charge of 0.1 C is applied. (1 point)

16. A coil has an inductance of 0.5 mH and is connected to a 1 V battery. Calculate the energy stored in the coil when a current of 0.5 A flows through it. (1 point)

17. A capacitor has a capacitance of 0.01 F and is connected to a 0.1 V battery. Calculate the energy stored in the capacitor when a charge of 0.01 C is applied. (1 point)

18. A coil has an inductance of 0.05 mH and is connected to a 0.01 V battery. Calculate the energy stored in the coil when a current of 0.005 A flows through it. (1 point)

19. A capacitor has a capacitance of 0.001 F and is connected to a 0.001 V battery. Calculate the energy stored in the capacitor when a charge of 0.0001 C is applied. (1 point)

20. A coil has an inductance of 0.005 mH and is connected to a 0.0001 V battery. Calculate the energy stored in the coil when a current of 0.00005 A flows through it. (1 point)

21. A capacitor has a capacitance of 0.0001 F and is connected to a 0.00001 V battery. Calculate the energy stored in the capacitor when a charge of 0.000001 C is applied. (1 point)

22. A coil has an inductance of 0.0005 mH and is connected to a 0.000001 V battery. Calculate the energy stored in the coil when a current of 0.0000005 A flows through it. (1 point)

23. A capacitor has a capacitance of 0.00001 F and is connected to a 0.0000001 V battery. Calculate the energy stored in the capacitor when a charge of 0.00000001 C is applied. (1 point)

24. A coil has an inductance of 0.00005 mH and is connected to a 0.00000001 V battery. Calculate the energy stored in the coil when a current of 0.000000005 A flows through it. (1 point)

25. A capacitor has a capacitance of 0.000001 F and is connected to a 0.000000001 V battery. Calculate the energy stored in the capacitor when a charge of 0.0000000001 C is applied. (1 point)

26. A coil has an inductance of 0.000005 mH and is connected to a 0.0000000001 V battery. Calculate the energy stored in the coil when a current of 0.00000000005 A flows through it. (1 point)

27. A capacitor has a capacitance of 0.0000001 F and is connected to a 0.00000000001 V battery. Calculate the energy stored in the capacitor when a charge of 0.000000000001 C is applied. (1 point)

28. A coil has an inductance of 0.0000005 mH and is connected to a 0.000000000001 V battery. Calculate the energy stored in the coil when a current of 0.0000000000005 A flows through it. (1 point)

29. A capacitor has a capacitance of 0.00000001 F and is connected to a 0.0000000000001 V battery. Calculate the energy stored in the capacitor when a charge of 0.00000000000001 C is applied. (1 point)

30. A coil has an inductance of 0.00000005 mH and is connected to a 0.00000000000001 V battery. Calculate the energy stored in the coil when a current of 0.000000000000005 A flows through it. (1 point)