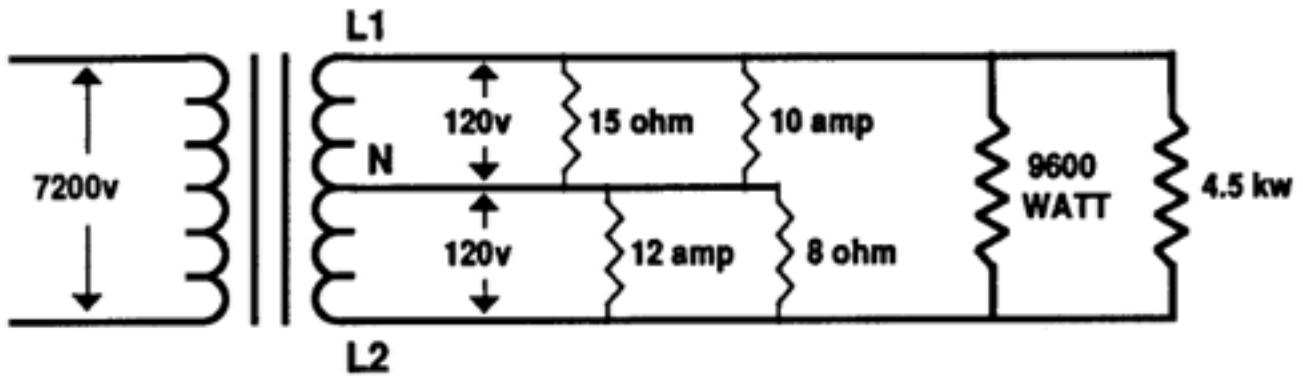


## Transformer Problems

- The transformer is based on the principle that energy may be effectively transferred (by induction) from one set of coils to another (by a varying magnetic flux) provided both sets of coils \_\_\_\_\_.
  - are not on a common magnetic circuit
  - have the same number of turns
  - are on a common magnetic circuit
  - do not have the same number of turns
- When a step-up transformer is used, it increases the \_\_\_\_\_.
  - voltage
  - power
  - current
  - frequency
- Compared to the secondary of a loaded step-down transformer, the primary has \_\_\_\_\_.
  - higher voltage and lower current
  - lower voltage and higher current
  - lower voltage and current
  - higher voltage and current
- The turns ratio of a transformer with a primary of 120 volts and a secondary of 24 volts is ?
  - 120:1
  - 12:1
  - 6:1
  - 5:1
- A transformer has a primary of 120 volts, a secondary of 15 volts. A 150 watt buzzer is connected to the secondary. The resistance of the buzzer is \_\_\_\_\_ ohms.
  - 1.5
  - 10
  - 15
  - 150
- If the input to a 5-to-1 step-down transformer is 100 amps at 2,200 volts the output will be \_\_\_\_\_.
  - 100 amps at 500 volts
  - 500 amps at 440 volts
  - 20 amps at 11,000 volts
  - 500 amps at 2,200 volts
- When the input to a 1-to-6 step-up transformer is 12 amps at 120 volts, the output is approximately \_\_\_\_\_.
  - 72 amps at 20 volts
  - 2 amps at 20 volts
  - 2 amps at 720 volts
  - 72 amps at 720 volts
- The primary volt-amps of a 40 amp, 230 volt, single phase transformer is \_\_\_\_\_ volt-amps.
  - 8,800
  - 9,200
  - 9,600
  - 10,200

9. The secondary watts of a single-phase transformer with a primary of 40 amps, 230 volts, and a efficiency of 85% is \_\_\_\_\_.
- (a) 7,480 (c) 8,160  
(b) 7,820 (d) 10,823
10. The efficiency of a transformer with an output of 400 watts, an input of 440 volt-amps is \_\_\_\_\_.
- (a) 1.1 (c) .91  
(b) .99 (d) .86
11. For a transformer with an efficiency of 60%, for every 100 watts output, there would be \_\_\_\_\_ watts input.
- (a) 166.6 (c) 60  
(b) 100 (d) 40
12. For a transformer at 90% efficiency, for every 100 vA input, there would be \_\_\_\_\_ watts output ?
- (a) 110 (c) 99  
(b) 100 (d) 90
13. What is the primary current of a 3.75 kVA, 120 volt transformer ?
- (a) 28.35 (c) 33.31  
(b) 31.25 (d) 34.45
14. What is the secondary current of a transformer with four 100 watt light bulbs at 12 volts ?
- (a) 33.3 (c) 28.3  
(b) 31.3 (d) 24.0
15. What is the output wattage of a transformer if the secondary current is 12 amps at 120 volts ?
- (a) 444 (c) 1,440  
(b) 1,040 (d) 1,800

## Single-Phase Transformer Problem



16. What is the turns ratio of this transformer ?
  - (a) 60:1
  - (b) 4:1
  - (c) 30:1
  - (d) 1:2
  
17. With all loads on, what is the current flowing in L1 ?
  - (a) 75.6 amps
  - (b) 16.2 amps
  - (c) 76.75 amps
  - (d) 150 amps
  
18. With all loads on, what is the current flowing in L2 ?
  - (a) 85.75 amps
  - (b) 87.55 amps
  - (c) 162.5 amps
  - (d) 150 amps
  
19. With all loads on, what is the current flowing in the neutral ?
  - (a) 162.5 amps
  - (b) 85.75 amps
  - (c) 76.75 amps
  - (d) 9 amps
  
20. With would be the maximum current the neutral conductor would carry ?
  - (a) 9 amps
  - (b) 162.5 amps
  - (c) 85.75 amps
  - (d) 27 amps
  
21. What is the kVa load on this transformer with all loads on ?
  - (a) 19,500
  - (b) 10,290
  - (c) 9,210
  - (d) 19.5

22. What is the current flowing in the secondary with all loads on ?

(a) 19,500

(c) 9,210

(b) 10,290

(d) 19.5

23. What is the primary current with all loads on ?

(a) 2.71 amps

(c) 162.5 amps

(b) 81.25 amps

(d) 27 amps