

There is more to practice on **ElectroMath in module 3**

**Transformers** Answers are below!

- 1) An X-former has an input of 400V and a ratio of 2:1. If the X-former is delta/star wound, what will the line voltage output be?  
a) 115V b) 346V c) 200V
- 2) A Transformer with 115V primary voltage and a ratio of 5:1 is supplying a landing light (load 24V 45 amps) is used, what is the current drawn?  
a) 9amps b) 4.5 amps c) 205 amps
- 3) A Transformer has 4500 secondary turns and 750 primary turns. Its turns ratio is  
a) 1/6 b) 6:1 c) 1:6
- 4) A 4:1 step down transformer draws 115 V and 1A. The output power will be  
a) 28.5 V at 16 A b) 28.5 V at 4 A c) 460 V at 0.25 A
- 5) In a transformer core loss is 200 W and copper loss is 220W at no load. What is the core loss at full load?  
a) 0 W b) 220 W c) 200 W
- 6) The secondary coil of a transformer has 1500 turns and  $10\Omega$  resistance. The primary coil has  $1k\Omega$  resistance. How many turns does the primary coil have?  
a) 15,000 b) 1,500,000 c) 150,000
- 7) Transformer copper loss on full load is 220 Watts. On half load the loss will be  
a) 110 Watts b) 440 Watts c) 55 Watts
- 8) A transformer with a 5:1 ratio has a 24V output. What is the input?  
a) 20 V DC b) 120 V AC c) 4.8 V AC
- 9) The copper loss on a single phase transformer is 25 Watts on full load. What will it be on half load?  
a) 6.25 Watts b) 12.5 Watts c) 5 Watts
- 10) An alternator delivers 500V RMS at 1 ampere. The power factor is 0.8. The true power is  
a) 100VA b) 400W c) 500W
- 11) What is the reflected impedance in the primary of the transformer circuit shown? DIAGRAM  
a)  $20\Omega$  b)  $50\Omega$  c)  $500\Omega$
- 12) A transformer has 500 turns on the primary and 100 turns on the secondary. The secondary supplies 20V and is connected to a  $10\Omega$  load. The primary current is  
a) 0.4 amps b) 2 amps c) 10 amps
- 13) A transformer has 1200 turns primary and 4800 turns secondary. What value of load resistance would be required to give a reflected impedance of 1000 ohms?  
a)  $1k\Omega$  b)  $4k\Omega$  c)  $16k\Omega$
- 14) A transformer to supply a 24V load with a 5:1 turns ratio will have what primary supply?  
a) 48 VAC b) 120 VAC c) 120 VDC
- 15) A transformer has 2000V, 500 turns on the primary and 50 turns on the secondary. What would be the line voltage if the transformer were Delta/Star connected?  
a) 450V b) 346V c) 200V

16) In a 4:1 step up transformer, what would give a reflected impedance of 1Kilohm?

- a) 4 k $\Omega$  b) 1 k $\Omega$  c) 16 k $\Omega$

17) The input is 115V and is applied across the 300 turn portion of the autotransformer shown. What is the output?

- a) 115V b) 460V c) 28V

18) A 10:1 step up power transformer has 120 V, and 3A flowing through the primary, and 0.285A flowing through the secondary what is the efficiency?

- a) 85% b) 90% c) 95%

19) To supply a 24volt output with a transformer with a 5:1 turns ratio, the input required is

- a) 4.8V b) 24V c) 120V

20) In a 4:1 step-up transformer, 120V is applied to the primary, and the load on the secondary is 1600  $\Omega$ . What is the current in the primary?

- a) 3A b) 0.075A c) 1.2A

21) A 12V transformer has a turns ratio (secondary to primary) of 12:1. The power absorbed in the primary is 120W. What is the current in the secondary?

- a) 0.8A b) 144A c) 120A

ANSWERS:

1b 2a 3b 4b 5b 6c 7c 8b 9a 10b 11c 12a 13c 14b 15b 16c 17b 18c 19c 20c 21a