Science Practice Exam
Chapters 5 and 14 ANSWERS

1.	A	6. A	11. C
2.	B	7. A	12. C
3.	D	8. D	13. A
4.	C	9. A	14. B
5.	B	10. B	15. B

16. V = 12 v R = 4 Ω I = ?

$I = \frac{V}{R}$

$I = \frac{12\ v}{4\ \Omega}$

I = 3 amps

The current intensity is 3 amps.

17. 

18. E = 900 kJ x 1000 = 900 000 J
t = 45 minutes x 60 = 2700 seconds
P = ?

$P = \frac{E}{t}$

$P = \frac{900\ 000\ J}{2700\ s}$

P = 333.33 watts

The electrical power of this appliance is 333.33 watts.

19. Conventional current flows from positive to negative.

20. P = 2000 W ÷ 1000 = 2 kW
t = 4 hours
E = ?

E = P·t
E = 2 kW · 4 h
E = 8 kW·h

The energy used is 8 kW·h

21. When a glass rod and silk are rubbed together, electrons travel from the glass rod to the silk. The glass has lost electrons giving it a positive charge and the silk has gained electrons (from the glass) leaving the silk with a negative charge.

22. I = 300 mA ÷ 1000 = 0.3 A
R = 100 Ω
V = ?

V = I·R
V = 0.3 A · 100 Ω
V = 30 volts

The voltage of the power supply is 30 volts.

23. P = 250 w
t = 30 mins x60= 1800 seconds.
E = ?

E = P·t
E = 250 w · 1800 s
E = 450 000 J

E = 450 000 J ÷ 1000
E = 450 kJ x 30 days = 13 500 kJ

13 500 kJ of energy will be consumed in one month.

24. R = 50 Ω
V = 120 V
P = ?

$I = \frac{V}{R}$ $I = \frac{120\ v}{50\ \Omega}$ I = 2.4 amps

P = V·I P = 120v · 2.4 A P = 288 watts

The power is 288 watts.

25. A) V = 220 v R = 30 Ω
T = 15 mins or 900 seconds or 0.25 hours

$I = \frac{V}{R}$ $I = \frac{220\ v}{30\ \Omega}$ ***I = 7.33 amps***

P = V·I P= 220 v · 7.33 A ***P = 1612.6 w***

E = P·t E = 1612.6 w x 900 s E = 1 451 340 J

The coffee maker used 1 451 340 J of energy.

b) E = P·t
E = 1.6126 kW · 0.25h
E = 0.40315 kW·h x $0.05 = 0.02
0.02x 365 days = 7.30

It would cost $7.30 to run the coffee maker for a year.