

# A Quiz About ECE (Electrical & Computer Engineering)

- 1. What electrical component stores energy in an electric field?
- Resistor
  - Capacitor
  - Inductor
  - Diode
- 2. Which of the following battery types is not rechargeable?
- Nickel-cadmium
  - Carbon-zinc
  - Lead-acid
  - Lithium-ion
- 3. How is the cathode lead of a semiconductor diode usually identified?
- With the word cathode
  - With a stripe
  - With the letter C
  - All of the above
- 4. What type of electrical component stores energy in a magnetic field?
- Resistor
  - Capacitor
  - Inductor
  - Diode
- 5. If the numbers 104 are on a ceramic capacitor what is its value?
- 0.1  $\mu\text{F}$
  - 1000 pF
  - 1 nF
  - 10  $\mu\text{F}$
- 6. What is the electrical term for the electromotive force (EMF) that causes electron flow?
- Voltage
  - Ampere-hour
  - Capacitance
  - Inductance



7. Which of the following is used together with an inductor to make a tuned circuit?

- a. Resistor
- b. Zener Diode
- c. Potentiometer
- d. Capacitor

8. If a resistor has the color blue, grey, orange (in that order) what is its value?

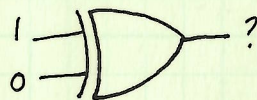
- a.  $690\ \Omega$
- b.  $68K\ \Omega$
- c.  $5.7K\ \Omega$
- d.  $570K\ \Omega$

9. What type of electrical component consists of two or more conductive surfaces separated by an insulator?

- a. Resistor
- b. Potentiometer
- c. Oscillator
- d. Capacitor

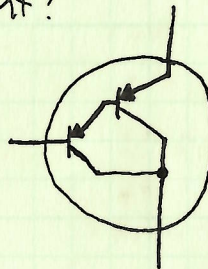
10. What is the output of this XOR gate?

- a. 1
- b. 0
- c. 2
- d. -1



11. What does this symbol represent?

- a. Darlington Transistor
- b. MOSFET
- c. 2N2222 Transistor
- d. Diode ++



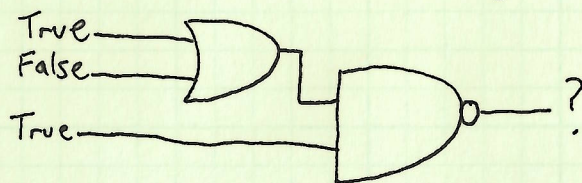
12. Who invented AC?


- a. Michael Faraday
- b. William Shockley
- c. Nikola Tesla
- d. Alessandro Volta



## True or False

— 13. What is the output of this logic gate?



— 14. 15mA of current would be flowing through a  $330\ \Omega$  resistor with a 5 volt source. 

— 15. The first battery was dated back to 250 BCE and was suspected to be used to electroplate statues.

— 16. High Voltage won't kill you, only high current.

— 17. The first LED produced was a blue LED.

— 18. PWM is identical to an Analog Signal.

— 19. 1 Amp is equivalent to 1 C/s

— 20. The Voltage required across a LED is always 2.2v (regardless of color)

"Regret is unnecessary. Think before you act." - William Shockley

"I think the varied backgrounds in the beginning were a plus. It took a while for people to understand what they were trying to do and get started, but it did provide for a lot of new ideas" - Jack Kilby

"One must be sane to think clearly, but one can think deeply and be quite insane."  
- Nikola Tesla

## Fact

The human body, when dry, acts like a 100K Ohm resistor. When wet or broken the body's resistance drops to 1000 Ohms.



# Extra Credit (1 point each)

1. Transformer

2. Supercapacitor

3. Carl Gauss

4. Intel 4004

5. Knife Switch

6. Michael Faraday

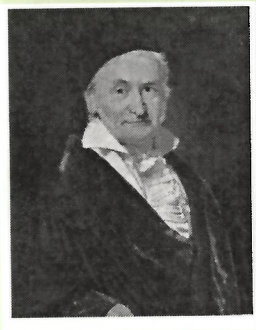
7. Multi-Turn Trimpot

8. 555 Timer

9. John Bardeen

10. Variable Capacitor

A.



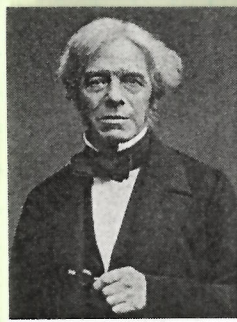
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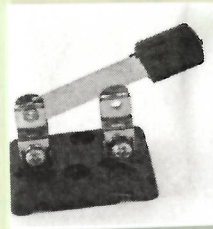
G.



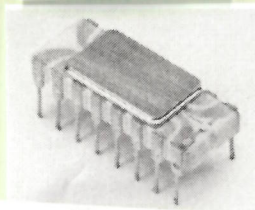
H.



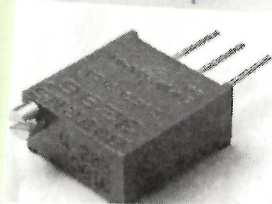
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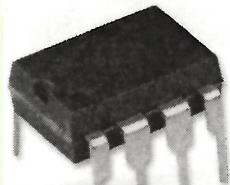
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E.



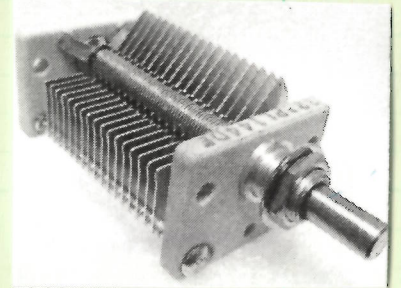
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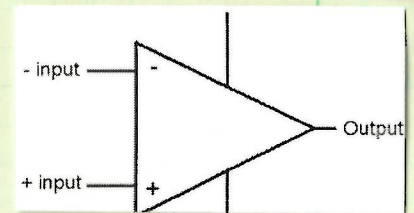
I.



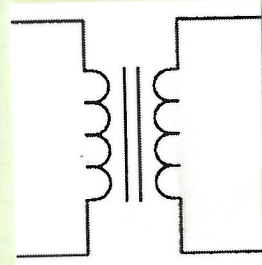
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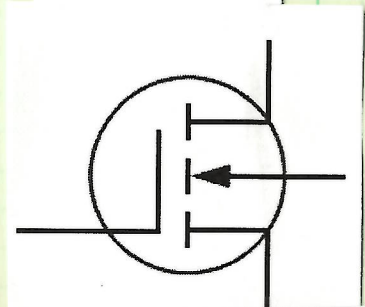
K.



L.



M.



N.

