History of Electrical Engineering

Electrical Engineering · Answer Key · 20 Questions

1. In 1820, which scientist first demonstrated the physical relationship between electricity and magnetism by deflecting a compass needle with a current-carrying wire?

A) Hans Christian Ørsted
B) Michael Faraday
C) André-Marie Ampère
D) James Clerk Maxwell

2. What was the primary method of communication used for the first transatlantic telegraph cable successfully completed in 1866?

A) Morse code via copper wire
B) Wireless radio telegraphy
C) Pneumatic tube signaling
D) Optical semaphore

3. Who is credited with the invention of the induction motor and the development of the polyphase alternating current (AC) system?

A) Nikola Tesla
B) Thomas Edison
C) George Westinghouse
D) Charles Steinmetz

4. The first practical incandescent light bulb, which used a carbonized bamboo filament, was patented by Thomas Edison in which year?

A) 1879
B) 1881
C) 1883
D) 1885

5. In 1947, John Bardeen, Walter Brattain, and William Shockley invented which electronic component at Bell Labs?

A) Point-contact transistor
B) Vacuum tube triode
C) Integrated circuit
D) Field-effect transistor

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6. Which company was the result of the 1892 merger between the Edison General Electric Company and the Thomson-Houston Electric Company?

A) General Electric
B) Westinghouse Electric
C) Siemens AG
D) General Motors

7. What was the significance of the 1893 World's Columbian Exposition in Chicago for electrical history?

A) It was the first major public demonstration of AC power distribution
B) It introduced the first commercial radio broadcast
C) It showcased the first electric automobile
D) It marked the invention of the electric elevator

8. Who published 'A Treatise on Electricity and Magnetism' in 1873, which formulated the foundational equations for electromagnetic fields?

A) James Clerk Maxwell
B) Heinrich Hertz
C) Lord Kelvin
D) Oliver Heaviside

9. The first commercial central power station in the United States, the Pearl Street Station, began operation in which city in 1882?

A) New York City
B) Chicago
C) Boston
D) Philadelphia

10. What phenomenon did Heinrich Hertz experimentally confirm in 1887, validating Maxwell's electromagnetic theory?

A) Electromagnetic waves
B) The photoelectric effect
C) Superconductivity
D) Electron diffraction

11. Which invention by Guglielmo Marconi in 1895 allowed for the first long-distance wireless communication using radio waves?

A) Radiotelegraphy system
B) Vacuum tube oscillator
C) Superheterodyne receiver
D) Magnetic coil antenna

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12. In 1958, Jack Kilby at Texas Instruments invented which device that revolutionized modern electronics by grouping components on a single piece of semiconductor?

A) Integrated circuit
B) Microprocessor
C) Photodiode
D) Logic gate

13. Who is recognized for developing the concept of 'phasors' in 1893 to simplify the analysis of alternating current circuits?

A) Charles Proteus Steinmetz
B) Arthur Kennelly
C) Paul-Marie Boucherot
D) Joseph Henry

14. The Niagara Falls hydroelectric project, which utilized Tesla's AC system, began delivering power to Buffalo, New York, in what year?

A) 1896
B) 1894
C) 1898
D) 1900

15. What was the primary function of the ENIAC, completed in 1945, which utilized 17,468 vacuum tubes?

A) General-purpose electronic digital computer
B) Signal decryption machine
C) Automatic radar controller
D) High-speed binary counter

16. Who demonstrated the first long-distance transmission of electrical power using high-voltage AC in the Lauffen-to-Frankfurt experiment of 1891?

A) Mikhail Dolivo-Dobrovolsky
B) Sebastian Ziani de Ferranti
C) Nikola Tesla
D) Elihu Thomson

17. Which British scientist is credited with inventing the thermionic valve (diode) in 1904?

A) John Ambrose Fleming
B) Lee de Forest
C) William Eccles
D) John Logie Baird

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18. In 1928, Harry Nyquist published 'Certain Topics in Telegraph Transmission Theory', which provided the foundation for what?

A) Sampling theorem
B) Frequency modulation
C) Phase-locked loops
D) Information theory

19. The first public demonstration of television, which utilized a mechanical Nipkow disk system, was conducted by John Logie Baird in what year?

A) 1926
B) 1924
C) 1928
D) 1930

20. Which entity established the first international standards for electrical units, such as the ohm and the ampere, at the 1893 International Electrical Congress?

A) International Electrotechnical Commission
B) IEEE
C) ISO
D) ITU

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