

Pioneers and Milestones in Advanced Chemistry

Advanced Chemistry · Answer Key · 15 Questions

1. Which alchemist is credited with the first isolation of phosphorus, a discovery that occurred around 1669?

- A) Isaac Newton
- B) Robert Boyle
- C) Hennig Brand**
- D) Antoine Lavoisier

2. The development of the periodic table is largely attributed to which Russian chemist, who published his table in 1869?

- A) Dmitri Mendeleev**
- B) Lothar Meyer
- C) John Dalton
- D) Amedeo Avogadro

3. In what year did Marie Curie and Pierre Curie announce the discovery of radium?

- A) 1895
- B) 1898**
- C) 1902
- D) 1911

4. Who formulated the famous equation $E=mc^2$, linking mass and energy, a cornerstone of modern physics and chemistry?

- A) Max Planck
- B) Niels Bohr
- C) Albert Einstein**
- D) Werner Heisenberg

5. The synthesis of urea from inorganic compounds in 1828, a key event in organic chemistry, was achieved by which chemist?

- A) Friedrich Wöhler**
- B) August Kekulé
- C) Justus von Liebig
- D) Emil Fischer

6. Which chemist is widely recognized for his foundational work on the structure of the atom, including the discovery of the nucleus in 1911?

A) J.J. Thomson

B) Ernest Rutherford

C) James Chadwick

D) John Dalton

7. The groundbreaking discovery of the electron was made by which physicist in 1897?

A) Henri Becquerel

B) J.J. Thomson

C) Robert Millikan

D) Ernest Rutherford

8. What year saw the publication of Linus Pauling's seminal work 'The Nature of the Chemical Bond'?

A) 1921

B) 1931

C) 1941

D) 1951

9. The first Nobel Prize in Chemistry was awarded in 1901 to Jacobus Henricus van 't Hoff for his work on which area?

A) Chemical kinetics

B) Thermodynamics

C) Physical chemistry and the laws of chemical dynamics

D) Quantum chemistry

10. Who is credited with developing the concept of isotopes, which he announced in 1913?

A) Ernest Rutherford

B) Frederick Soddy

C) Niels Bohr

D) Otto Hahn

11. The first successful synthesis of ammonia on an industrial scale, crucial for fertilizers, was achieved through which process, developed in the early 20th century?

A) Contact Process

B) Haber-Bosch Process

C) Solvay Process

D) Ostwald Process

12. Which chemist's experimental work in the late 19th century provided strong evidence for the existence of a positively charged nucleus within the atom?

- A) J.J. Thomson
- B) Marie Curie
- C) Ernest Rutherford**
- D) William Crookes

13. The discovery of the neutron by James Chadwick occurred in which year?

- A) 1919
- B) 1927
- C) 1932**
- D) 1935

14. What significant chemical process, developed by Carl Bosch and Fritz Haber, enabled the large-scale production of ammonia from nitrogen and hydrogen?

- A) The Castner Process
- B) The Haber-Bosch Process**
- C) The Downs Process
- D) The Solvay Process

15. The discovery of the first synthetic plastic, Bakelite, by Leo Baekeland marked a significant milestone in the history of which field?

- A) Organic Chemistry
- B) Polymer Chemistry**
- C) Physical Chemistry
- D) Inorganic Chemistry