

History of Materials Science

Materials Science · Answer Key · 20 Questions

1. Which period of human history is defined by the development of tools made from copper and its alloy, tin?

- A) The Stone Age
- B) The Bronze Age**
- C) The Iron Age
- D) The Silicon Age

2. Who is credited with the invention of the process for vulcanizing rubber in 1839?

- A) Charles Goodyear**
- B) Thomas Edison
- C) Henry Bessemer
- D) Louis Pasteur

3. What is the name of the process patented in 1856 to mass-produce steel from molten pig iron?

- A) The Hall-Hérault process
- B) The Vulcanization process
- C) The Bessemer process**
- D) The Float glass process

4. In 1909, Leo Baekeland created the first fully synthetic plastic. What was it called?

- A) Polyester
- B) Nylon
- C) Bakelite**
- D) Polyethylene

5. Which naturally occurring material was used by ancient Egyptians as early as 3500 BCE to create decorative objects?

- A) Glass**
- B) Carbon fiber
- C) Aluminum
- D) Stainless steel

6. What metallic element, once considered more valuable than gold in the mid-19th century, became affordable after the Hall-Héroult electrolytic process?

- A) Iron
- B) Copper
- C) Aluminum**
- D) Lead

7. The discovery of 'graphene', a single layer of carbon atoms, earned the Nobel Prize in Physics for which year?

- A) 1995
- B) 2004
- C) 2010**
- D) 2015

8. What was the primary material used to create the first transistor at Bell Labs in 1947?

- A) Copper
- B) Germanium**
- C) Plastic
- D) Iron

9. In which century did the widespread industrial use of cast iron begin in Europe?

- A) 12th century
- B) 15th century
- C) 18th century**
- D) 20th century

10. What invention by Wallace Carothers at DuPont in 1935 revolutionized the textile industry?

- A) Cotton
- B) Nylon**
- C) Rayon
- D) Wool

11. The study of materials science was formally recognized as a unified field primarily during which era?

- A) The Renaissance
- B) The Industrial Revolution
- C) The mid-20th century**
- D) The Roman Empire

12. Which material was famously used for the heat shield of the Mercury space capsules to withstand atmospheric re-entry?

- A) Beryllium
- B) Ablative resin**
- C) Pure silver
- D) Polystyrene

13. In what decade was the first commercial stainless steel, known as 'rustless steel', developed by Harry Brearley?

- A) 1880s
- B) 1910s**
- C) 1940s
- D) 1960s

14. What was the primary binding material used in the construction of the Pantheon in ancient Rome, contributing to its durability?

- A) Portland cement
- B) Roman concrete (pozzolana)**
- C) Epoxy resin
- D) Plastic polymer

15. Which of these materials is a natural polymer that humans have used for thousands of years?

- A) Cellulose**
- B) Teflon
- C) Polypropylene
- D) Polystyrene

16. What is the common name for the iron-carbon alloy that contains less than 2% carbon?

- A) Cast iron
- B) Steel**
- C) Brass
- D) Bronze

17. Who demonstrated the first working light bulb filament using carbonized bamboo?

- A) Nikola Tesla
- B) Thomas Edison**
- C) Alexander Graham Bell
- D) Marie Curie

18. The discovery of carbon nanotubes is officially attributed to which Japanese researcher in 1991?

- A) Sumio Iijima**
- B) Akira Yoshino
- C) Shinya Yamanaka
- D) Hideki Yukawa

19. What material, discovered by accident by Roy Plunkett in 1938, is now widely known as Teflon?

- A) Polyvinyl chloride
- B) Polytetrafluoroethylene**
- C) Polyethylene terephthalate
- D) Polyurethane

20. Which metal was the first to be extracted from its ore by heating, marking the beginning of metallurgy?

- A) Aluminum
- B) Gold
- C) Copper**
- D) Titanium