Al Amal Learning Center

Class 9 Chemistry Chapter 1 Advanced MCQ Quiz Online | Level 3

Class 9 Chemistry · Chapter 1: Nature of Science in Chemistry

Name: _____ Date: _____ Score: _____ / 30

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1. A hospital laboratory uses an instrument to measure the exact amount of glucose in a patient's blood sample. Which branch of chemistry is mainly involved?

A) Geochemistry
B) Polymer chemistry
C) Astrochemistry
D) Analytical chemistry

2. A company sets up a plant that produces thousands of tonnes of soap every month. This work belongs to:

A) Industrial chemistry
B) Biochemistry
C) Nuclear chemistry
D) Geochemistry

3. Doctors use a radioactive form of an element to study how an organ is working. Which branch of chemistry explains how such materials behave?

A) Organic chemistry
B) Nuclear chemistry
C) Polymer chemistry
D) Environmental chemistry

4. Scientists examine a fragment of a meteorite to find out which chemical compounds exist in outer space. This is an example of:

A) Geochemistry
B) Astrochemistry
C) Analytical chemistry only
D) Medicinal chemistry

5. A researcher collects soil and rock samples from a mountain to learn how different elements are distributed in the Earth's crust. Which branch is involved?

A) Biochemistry
B) Astrochemistry
C) Geochemistry
D) Physical chemistry

6. A scientist studies how the human body breaks down the food we eat into usable substances. Which branch is best suited to this study?

A) Biochemistry
B) Inorganic chemistry
C) Nuclear chemistry
D) Industrial chemistry

7. A student uses laws and theories to explain how the structure of an atom decides the way it forms bonds. This approach is typical of:

A) Environmental chemistry
B) Polymer chemistry
C) Medicinal chemistry
D) Physical chemistry

8. Smoke from brick kilns is harming the health of people living nearby, and a team studies the toxic substances involved. Which branch of chemistry applies?

A) Environmental chemistry
B) Astrochemistry
C) Inorganic chemistry
D) Nuclear chemistry

9. A chemist is working on a new rope material made of very long chains of repeating units, and tests how the chain structure affects its strength. This is mainly:

A) Geochemistry
B) Analytical chemistry
C) Nuclear chemistry
D) Polymer chemistry

10. A scientist tests how a new pain-relief compound interacts with a target protein in the body. Which branch is involved?

A) Medicinal chemistry
B) Geochemistry
C) Industrial chemistry
D) Astrochemistry

11. A chemist studies the carbon backbone and functional groups of a molecule to synthesize a new dye. Which branch is mainly involved?

A) Inorganic chemistry
B) Organic chemistry
C) Nuclear chemistry
D) Geochemistry

12. A student wants to understand how the periodic table organizes metals such as copper and iron along with their compounds. Which branch should the student study?

A) Biochemistry
B) Polymer chemistry
C) Inorganic chemistry
D) Medicinal chemistry

13. A student finds that calcium carbide contains carbon and asks which branch studies it. What is the correct answer?

A) Organic chemistry, because it contains carbon
B) Biochemistry, because it is a chemical
C) Polymer chemistry, because it is a solid
D) Inorganic chemistry, because carbides are excluded from organic chemistry

14. Detectives find fibers and traces of drugs on a suspect's clothing and send them to a chemist for examination. This application is called:

A) Forensic chemistry, an application of analytical chemistry
B) Industrial chemistry, an application of nuclear chemistry
C) Polymer chemistry, an application of geochemistry
D) Forensic chemistry, an application of astrochemistry

15. A mechanic explains that a car battery works by changing chemical energy into electrical energy. Which branch's principle is being applied?

A) Physical chemistry, through electrochemistry
B) Biochemistry, through enzymes
C) Astrochemistry, through stars
D) Geochemistry, through rocks

16. A student wants to know how nuclear reactions differ from ordinary chemical reactions. Which branch of chemistry should the student explore?

A) Organic chemistry
B) Analytical chemistry
C) Environmental chemistry
D) Nuclear chemistry

17. A student wants a career in designing chemical processes that use fewer hazardous substances. Which area of chemistry matches this goal?

A) Green chemistry
B) Astrochemistry
C) Nuclear chemistry
D) Geochemistry

18. A researcher studies why a certain metal conducts electricity better than another metal, only to understand its behavior. This activity is best described as:

A) Engineering
B) Science
C) Technology
D) Manufacturing

19. A company uses research on conducting materials to produce a touchscreen for mobile phones. This is best described as:

A) Pure science only
B) A natural phenomenon
C) Technology
D) A chemical law

20. A chemical engineer designs a large manufacturing process to produce fertilizer safely and efficiently. This activity is an example of:

A) Engineering
B) Science only
C) Geochemistry
D) Forensic analysis

21. Scientists discover that a certain compound kills bacteria. Which of the following activities that follow is the work of engineering?

A) Explaining how bacteria live and grow
B) Discovering other compounds with similar structures
C) Naming the compound according to its structure
D) Designing a factory process to produce the medicine in large quantities

22. A laboratory buys an automated instrument that identifies substances much faster than older methods. How has technology helped the chemists?

A) It has removed the need for chemistry
B) It has made analysis and research more efficient
C) It has stopped the discovery of new substances
D) It has made the work of chemists less accurate

23. A chemical engineer in a detergent factory adjusts the process to increase productivity without lowering product quality. This reflects which role of engineering?

A) Discovering the laws of nature
B) Naming new compounds
C) Maximizing productivity and product quality
D) Studying only the history of detergents

24. Scientists discover how lithium ions move inside a battery. A company then builds a compact rechargeable battery for phones. Which step is technology?

A) Discovering how lithium ions move
B) Building the compact rechargeable battery
C) Asking why lithium exists
D) Observing the ions in nature

25. A student designs an experiment to find out how temperature affects how quickly sugar dissolves in a liquid. The student is mainly acting as:

A) An engineer
B) A technician
C) A scientist
D) A manufacturer

26. A student claims that engineering has nothing to do with science. Which reply is most accurate?

A) Engineering never uses mathematics
B) Engineering uses science and mathematics to design and construct systems and tools
C) Engineering only studies natural phenomena
D) Engineering is the same as the study of nature

27. Which sequence correctly shows how science, technology and engineering work together?

A) Engineering builds first, then science explains why it works
B) Technology comes first, with no help from science
C) Science and engineering never connect with technology
D) Science explains principles, technology applies them as tools, and engineering builds systems from them

28. A handheld device that uses chemical principles to test the freshness of milk is developed. Which field does this device mainly belong to?

A) Technology
B) Pure science
C) Astrochemistry
D) Geochemistry

29. A paper mill wants to increase output while keeping the paper quality high. Which group of professionals would design the improved production process?

A) Astronomers
B) Historians
C) Geologists only
D) Chemical engineers

30. A student says, "Science and technology are the same thing." Which statement best corrects the student?

A) Science builds machines, while technology studies nature
B) Science seeks to understand the natural world, while technology applies that knowledge to create tools and systems
C) Both are only used inside laboratories
D) Technology always happens before science

Answer key

1-D 2-A 3-B 4-B 5-C 6-A 7-D 8-A 9-D 10-A

11-B 12-C 13-D 14-A 15-A 16-D 17-A 18-B 19-C 20-A

21-D 22-B 23-C 24-B 25-C 26-B 27-D 28-A 29-D 30-B