

Markhor Junior Contest ®

Pioneer Level (Class VII & VIII) Science 2014

There are 25 questions, and each question carries two marks.

1. **A control group in an experiment is important because:**
 - a) It always receives the treatment.
 - b) It makes the experiment faster.
 - c) It provides a standard for comparison.**
 - d) It guarantees the hypothesis is true
2. **Which of these is the best STEM-integrated project for students?**
 - a) Writing an essay on climate change
 - b) Designing a water filter using scientific concepts, measurements, and prototypes**
 - c) Memorizing periodic table elements
 - d) Drawing planets in the solar system
3. **Louis Pasteur is best known for his discoveries about:**
 - a) Cells in cork
 - b) Electricity in wires
 - c) Germ theory and rabies vaccine**
 - d) Telescope improvements
4. **Which process releases more ATP per glucose molecule?**
 - a) Fermentation
 - b) Aerobic respiration**
 - c) Anaerobic respiration
 - d) Photosynthesis
5. **Which of the following is an example of a food chain?**
 - a) Plants → Herbivores → Carnivores → Omnivores
 - b) Grass → Rabbit → Fox**
 - c) Sun → Plants → Water → Humans
 - d) Air → Plants → Animals
6. **Which type of blood cells are most directly involved in fighting infections?**
 - a) Red blood cells
 - b) Platelets
 - c) White blood cells (leukocytes)**
 - d) Plasma cells only
7. **Why are booster shots sometimes required after vaccination?**
 - a) To change blood type
 - b) To reduce body fever
 - c) To maintain long-term immunity**
 - d) To kill existing pathogen

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8. Which of these is a threat to biodiversity?
- a) Recycling
 - b) Wildlife conservation
 - c) Deforestation**
 - d) National parks
9. Which is the primary cause of smog in cities?
- a) Dust storms
 - b) Volcanoes
 - c) Vehicle exhaust and industrial emissions**
 - d) Recycling
10. Which renewable energy source can help reduce climate change?
- a) Coal
 - b) Diesel
 - c) Wind energy**
 - d) Natural gas
11. Hydropower energy is generated from:
- a) Sunlight
 - b) Wind
 - c) Flowing water**
 - d) Fire
12. Which of these is a disadvantage of non-renewable energy compared to green energy?
- a) Produces no heat
 - b) Cannot generate electricity
 - c) Causes pollution and runs out**
 - d) Always free to use
13. Which of the following is a metalloid?
- a) Oxygen
 - b) Sodium
 - c) Silicon**
 - d) Neon
14. Which of the following is a covalent molecule?
- a) Sodium chloride
 - b) Calcium oxide
 - c) Carbon dioxide**
 - d) Potassium bromide
15. In a displacement reaction, a more reactive element:
- a) Breaks down into smaller elements
 - b) Replaces a less reactive element from its compound**
 - c) Always forms water
 - d) Changes into the same element

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16. Blue litmus paper turns red in the presence of:

- a) Base
- b) Acid**
- c) Neutral solution
- d) Soap solution

17. Which technique is best for obtaining pure water from seawater?

- a) Filtration
- b) Sedimentation
- c) Distillation**
- d) Magnetism

18. When a moving car suddenly stops, passengers lurch forward due to:

- a) Momentum loss
- b) Inertia (Newton's First Law)**
- c) Third Law of Motion
- d) Gravitational pull

19. The capacity to do work is called:

- a) Force
- b) Energy**
- c) Power
- d) Momentum

20. The speed of a wave is given by:

- a) Frequency $\div$ wavelength
- b) Amplitude $\times$ frequency
- c) Wavelength $\times$ frequency**
- d) Wavelength $\div$ amplitude

21. Which type of mirror is used as a rear-view mirror in vehicles?

- a) Concave mirror
- b) Convex mirror**
- c) Plane mirror
- d) Parabolic mirror

22. Electrons in an atom move in regions called:

- a) Nucleus
- b) Shells**
- c) Orbitals only
- d) Fields

23. Which of the following is a major concern in cloning?

- a) Reducing genetic diversity**
- b) Making food tastier
- c) Using microscopes
- d) Painting plants

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24. Why does a person usually not get the same viral infection twice after recovery?

- a) The virus disappears from the environment
- b) The immune system remembers the pathogen and produces antibodies faster**
- c) The body becomes resistant to all viruses
- d) The blood type changes

25. A sound wave travels faster in water than in air because:

- a) Water molecules are closer together, allowing faster vibration transfer**
- b) Water is denser, so the sound slows down
- c) Sound needs oxygen to travel
- d) Water absorbs sound energy