

Markhor Junior Contest ®

Pioneer Level (Class VII & VIII) Science 2011

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

1. **Which of the following is a scientific theory?**
 - a) An idea that cannot be tested.
 - b) A well-supported explanation of natural phenomena.**
 - c) A random guess by a scientist.
 - d) An unchangeable law
2. **An engineer needs to test whether a bridge can handle 10,000 cars daily. Which STEM part ensures correct calculations?**
 - a) Technology
 - b) Science
 - c) Mathematics**
 - d) Observation
3. **Nikola Tesla is best known for his contributions to:**
 - a) Vaccines against polio
 - b) Alternating current (AC) electricity systems**
 - c) Discovery of cells
 - d) Invention of the telescope
4. **Which of the following correctly links photosynthesis and respiration?**
 - a) Both produce glucose.
 - b) Products of photosynthesis are reactants of respiration.**
 - c) Both release oxygen.
 - d) Both require carbon dioxide
5. **Why are there usually only 4–5 trophic levels in an ecosystem?**
 - a) Too many predators would overpopulate.
 - b) Food chains cannot be longer.
 - c) Energy available decreases too much at higher levels.**
 - d) Herbivores do not survive at higher levels
6. **Which of the following traits is controlled by multiple genes rather than a single gene?**
 - a) Widow's peak
 - b) Blood type
 - c) Skin color**
 - d) Cystic fibrosis
7. **Incomplete dominance means:**
 - a) One trait always hides the other
 - b) Offspring show a blend**

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- c) Traits disappear
 - d) Only recessive is expressed
8. A genetically modified bacterium producing human insulin is an example of:
- a) Cloning
 - b) Biotechnology**
 - c) Natural mutation
 - d) Cross-breeding
9. Which of these pairs is correctly matched?
- a) Asthma → Virus
 - b) Diabetes → Non-infectious**
 - c) Malaria → Bacteria
 - d) Typhoid → Virus
10. Which group is most vulnerable to infectious diseases without vaccination?
- a) Adults
 - b) Teenagers
 - c) Infants and elderly**
 - d) Athletes
11. Which conservation practice protects animals in their natural habitat?
- a) Zoos
 - b) Botanical gardens
 - c) Wildlife sanctuaries**
 - d) Seed banks
12. Dumping of untreated sewage into rivers can cause:
- a) Increase in drinking water
 - b) Decrease in fish population only
 - c) Spread of waterborne diseases**
 - d) Formation of ozone layer
13. Which of the following is an adaptation strategy for climate change?
- a) Using more fossil fuels
 - b) Building sea walls against rising oceans**
 - c) Cutting more forests
 - d) Producing more greenhouse gases
14. What does the term sustainability mean?
- a) Using resources quickly
 - b) Ignoring resource limits
 - c) Using resources wisely without depleting them**
 - d) Stopping resource use completely

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15. Which of the following is the 3R principle for conservation?

- a) Reuse, Revive, Return
- b) Reduce, Reuse, Recycle**
- c) Restore, Remove, Refuel
- d) Rebuild, Reduce, Reform

16. Which pair of elements is most likely to form an ionic bond?

- a) Hydrogen and oxygen
- b) Carbon and hydrogen
- c) Sodium and chlorine**
- d) Nitrogen and oxygen

17. Which of the following is not a combustion reaction?

- a) Candle burning
- b) LPG burning in a stove
- c) Mixing sugar and water**
- d) Petrol burning in a car engine

18. Which household product contains a base?

- a) Vinegar
- b) Bleach**
- c) Orange juice
- d) Coffee

19. Brass (copper + zinc) is an example of:

- a) Compound
- b) Mixture (alloy)**
- c) Element
- d) Solution only

20. Two skaters push against each other and move in opposite directions. This demonstrates:

- a) First Law
- b) Second Law
- c) Third Law**
- d) Momentum conservation only

21. A 60 W light bulb uses how much energy in 1 second?

- a) 60 J
- b) 30 J
- c) 60 J**
- d) 600 J

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22. Sound cannot travel through:

- a) Solids
- b) Liquids
- c) Vacuum**
- d) Gases

23. If light passes from air into glass, it bends:

- a) Away from the normal
- b) Towards the normal**
- c) Along the normal
- d) Not at all

24. Which statement best explains why atoms of the same element react in similar ways?

- a) They always have identical masses.
- b) Their outermost electrons are arranged the same way.**
- c) They always form the same number of neutrons.
- d) Their nucleus contains equal numbers of electrons.

25. Which element is **MOST** likely to form a positive ion when reacting?

- a) Oxygen
- b) Nitrogen
- c) Sodium**
- d) Chlorine