Markhor Junior Contest ®

Pioneer Level (Class VII & VIII) Science 2010

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

1. **What did Isaac Newton contribute to science?**
   a) The invention of the telescope
   b) Laws of motion and universal gravitation
   c) Theory of evolution
   d) Discovery of electricity

2. **In the design of rockets, why is integration of STEM essential?**
   a) Only engineers are needed.
   b) Math is not required.
   c) Science explains motion, math makes calculations, engineering builds, technology controls.
   d) Technology works alone

3. **Which breakthrough most directly reduced death from infectious diseases in the 18th and 19th centuries?**
   a) Electricity
   b) Telescope
   c) Vaccines
   d) Microscope

4. **What happens in plants during nighttime when there is no sunlight?**
   a) Photosynthesis continues normally.
   b) No respiration takes place.
   c) Only respiration occurs, consuming oxygen and releasing CO_2.
   d) Both photosynthesis and respiration stop

5. **If 5,000 calories of energy are in plants, how much energy would be available to secondary consumers (assuming 10% rule)?**
   a) 5,000 calories
   b) 500 calories
   c) 50 calories
   d) 5 calories

6. **Which of these is an example of selective breeding, not genetic engineering?**
   a) Editing DNA to create glowing fish
   b) Adding spider silk genes to goats
   c) Breeding fast horses together for speed
   d) Making bacteria produce vaccines

7. **Which of the following is a non-communicable disease, not prevented by vaccination?**
   a) Measles
   b) Polio
   c) Diabetes
   d) Chickenpox

8. **Which of the following is a renewable natural resource?**
   a) Coal
   b) Oil
   c) Forests
   d) Natural gas

9. **The term biomagnification refers to:**
   a) Decrease of pollution in food chains
   b) Increase of harmful chemicals in organisms at higher trophic levels
   c) Recycling of waste materials
   d) Cleaning of polluted water

10. **Which of these human actions can help mitigate climate change?**
    a) Driving more cars
    b) Planting trees (afforestation)
    c) Burning more coal
    d) Increasing factory emissions

11. **Which of these is a renewable forest resource?**
    a) Plastic
    b) Coal
    c) Timber (wood)
    d) Gasoline

12. **A farmer uses natural fertilizers like compost instead of chemical fertilizers. This is an example of:**
    a) Modern pollution
    b) Over-farming
    c) Sustainable agriculture
    d) Resource wastage

13. **In a double displacement reaction, two compounds:**
    a) Burn in oxygen
    b) Exchange ions to form new compounds
    c) Break down into elements
    d) Release hydrogen only

14. The pH of lemon juice is around:
a) 10–12
b) 7
c) 2–3
d) 6–7

15. Which statement is true for compounds?
a) Components can be separated by physical means
b) They show the properties of all constituents
c) They have properties different from their elements
d) They can be formed by mixing

16. Which law states that energy cannot be created or destroyed, only changed in form?
a) Newton's First Law
b) Law of Gravitation
c) Law of Conservation of Energy
d) Law of Inertia

17. The part of a longitudinal wave where particles are close together is called:
a) Rarefaction
b) Compression
c) Crest
d) Trough

18. The basic unit of life in all living organisms is the:
a) Tissue
b) Cell
c) Organ
d) Organism

19. Which life process involves breaking down glucose to release energy inside the cell?
a) Respiration
b) Photosynthesis
c) Transpiration
d) Excretion

20. Diseases that can be spread from one person to another are called:
a) Communicable
b) Non-communicable
c) Chronic
d) Deficiency

21. Which of these is a physical change?
(a) Burning paper
(b) Melting ice
(c) Cooking food
(d) Rusting iron

22. When a liquid change into a gas below its boiling point, it is called: .
a) Evaporation
b) Condensation
c) Melting
d) Freezing

23. Which of these is not an example of a force?
a) Push
b) Speed
c) Gravity
d) Friction

24. Which statement BEST explains why all atoms of an element have the same chemical properties?
a) They have the same number of neutrons.
b) They have the same number of protons in the nucleus.
c) They always have the same mass number.
d) Their electrons never change energy levels.

25. A ball is kicked equally hard on grass and on smooth marble. On which surface will the ball travel farther, and why?
a) Grass, because more friction increases the ball's rolling distance.
b) Marble, because less friction opposes the motion.
c) Both will travel the same because the force applied is equal.
d) Grass, because friction converts force into more speed.