

1) Air is composed of nitrogen, oxygen, argon, carbon dioxide, and other gasses. How may air be best described?

- a compound
- a mixture
- a solution
- an alloy
- an amalgam

Answer :: B

**Explanation of Answer:**

Air is mixture of at least four gasses. Each gas retains its owns distinct properties.

2) Table salt - sodium chloride, one of the most common substances occurring in nature - is best classified as which of the following?

- a compound
- a mixture
- a solution
- an alloy
- an amalgam

Answer :: A

**Explanation of Answer:**

Salt is a compound composed of elements sodium and chlorine and has properties different from each.

3) All of the following are mammals EXCEPT:

- whales
- humans
- penguins

- rabbits
- rats

Answer :: C

**Explanation of Answer:**

Penguins are birds that hatch from eggs.

4) Which of the following statements about human genetics is true?

- A human looks 50% like the father, and 50% like the mother.
- Genes are particles found in the nucleus of DNA atom.
- Exposure to X-rays can have no effect on a human's chromosomes.
- Half the chromosomes in a human are inherited from the mother, and half from the father.
- Fraternal twins are genetically more similar than siblings who are not twins.

Answer :: D

**Explanation of Answer:**

Every human normally inherits 23 chromosomes from the mother and 23 chromosomes from the father.

5) Humidity is a measure of

- the amount of water vapor in air.
- air temperature.
- air resistance.
- air pressure.
- cloudiness

Answer :: A

**Explanation of Answer:**

Humidity is a measure of the amount of water vapor in air.

## 6) Is Pluto a Planet?

Based on perturbations in Neptune's orbit, the search for a ninth planet was conducted and Pluto was discovered in 1930. Pluto orbits the sun just like the other eight planets, and it has a moon, Charon, and a stable orbit. Based on its distance from the sun, Pluto should be grouped with the planets known as gas giants. In addition, Pluto, like the planet Mercury, has little or no atmosphere. Pluto is definitely not a comet because it does not have a tail like a comet when it is near the sun. Pluto is also not an asteroid, although its density is closer to an asteroid than to any of the other planets. Pluto is a planet because it has been classified as one for more than sixty years since its discovery.

Which argument supporting the classification of Pluto as a planet is the weakest?

- Pluto has a stable orbit.
- Pluto, like the planet Mercury, has little or no atmosphere.
- Pluto orbits the sun just like the other eight planets.
- Pluto has a moon.
- Pluto has been classified as a planet for more than sixty years since discovery.

Answer :: E

### Explanation of Answer:

This is the weakest argument because it is justified with authority, tradition, and past belief, rather than scientific facts.

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Which one of the following statements is NOT backed with an explanation?

- Pluto is not an asteroid.
- Pluto is like a planet.

- Pluto is like Mercury.
- Pluto should be grouped with planets known as gas giants.
- Pluto is not a comet.

Answer :: A

**Explanation of Answer:**

The passage states that Pluto's density is closer to an asteroid's than to any of the planets'. This would lead the reader to think that Pluto, based on its density, may be an asteroid. But the passage states that this is not the case and does not give arguments to support the statement. The statements in all other choices are supported with facts.

8) Which of the following is the most common result of prolonged excessive alcohol consumption?

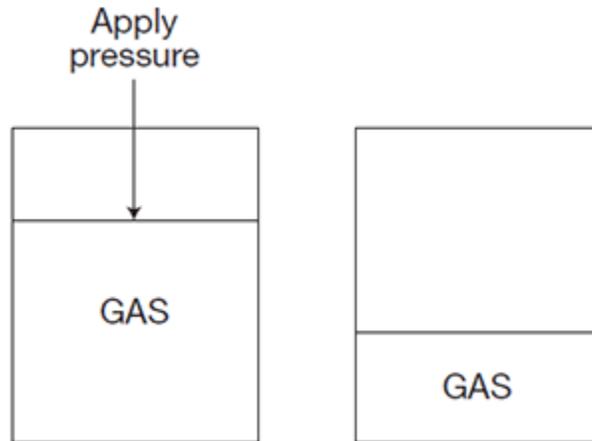
- brain tumor
- liver damage
- heart attack
- lung cancer
- cataracts

Answer :: B

**Explanation of Answer:**

While alcohol damages other tissues as well, most alcoholics first experience liver failure.

9)



As the pressure of a gas increases at constant temperature, the volume of the gas decreases.

If you were a diver and you wanted to take an oxygen tank with you, what would you do?

- Increase the temperature of oxygen in the tank, so that the cold oxygen doesn't damage the lungs.
- Decrease the pressure of oxygen in the tank, so the tank doesn't explode.
- Increase the temperature of the oxygen and decrease the pressure, so the volume stays the same.
- Pressurize the oxygen, so more of it can fit in a tank of a manageable size.
- Decrease the temperature of oxygen, so that it doesn't escape from the tank.

Answer :: D

**Explanation of Answer:**

A diver would want to take a lot of oxygen without letting the tank get too bulky.

10) Through friction, energy of motion is converted to heat. You use this in your favor when you

- stand under a heater to make your body warm.
- wear a coat to make your body warm.
- soak your body in hot water to make it warm.
- rub your arms quickly to make your body warm.

- sit near a fireplace to make your body warm.

Answer :: D

**Explanation of Answer:**

This answer is the only one that creates friction.