The thymus:

1. is an organ of the human immune system
2. is located in front of the heart and behind the sternum
3. provides an inductive environment for the development of B-lymphocytes
4. plays an important role in the induction of central immunological tolerance

Which of the following statements about gene, allele and DNA sequence is/are correct?

1. a gene can have more alleles which differ in their DNA sequence
2. one allele can have more genes which differ in their DNA sequence
3. a person having two different alleles of a specific gene is a heterozygote
4. a person having two identical alleles of a specific gene is a homozygote

The basic laws of heredity were postulated after 1850 by:

1. Johann Gregor Mendel
2. Rudolf Virchow
3. Francis Galton
4. Charles Darwin

An alpha particle:

1. is composed of two protons and two neutrons
2. has the number of nucleons equal to the number of protons (A = Z)
3. for the number of nucleons and protons holds A + Z = 4
4. is not deflected by a magnetic field

A body with a mass of 10 kg moves with a constant velocity of 36 km/h. Its kinetic energy is:

1. 360 J
2. 1000 J
3. 500 J
4. about 6.5 kJ

Various components are based on physical principles or phenomena. Mark the correct relations:

1. a bimetalic thermometer – thermal expansion of solids
2. a thermistor – semiconductor conductivity dependence on the temperature
3. a thermocouple – metal conductivity dependence on temperature
4. a resistance thermometer – conductor's resistivity dependence on the temperature

The blood glucose level of a fasting patient drops to 65 mg/dL. What is the number of grams of glucose in 1.0 L of blood?

1. 6.5 g
2. 0.065 g
3. 65 g
4. 0.65 g

Indicate the functional groups in a molecule of serine:

1. – SH
2. – COOH
3. – NH_2
4. – OH

Indicate the saturated fatty acids:

1. linoleic acid
2. stearic acid
3. palmitic acid
4. oleic acid

Which pattern requires the longest wire in order to be formed?

A. B. C. D.

There are an equal number of boys and girls playing beach volleyball. They can be grouped into four different mixed pairs. Is the number of children:

1. lower than 5
2. equal to 4
3. higher than 4

Determine the percentage of the squared area that is shaded.

1. less than 50 %
2. equal to 50 %
3. more than 50 %