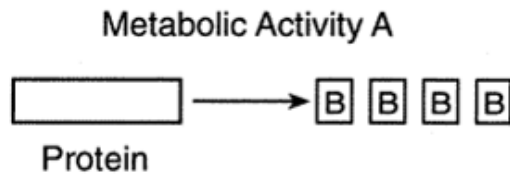


Keystone Review

Grade: «grade»
 Subject: «subject»
 Date: «date»

Apr 8-2:21 PM

1 The diagram below represents one metabolic activity of a human.



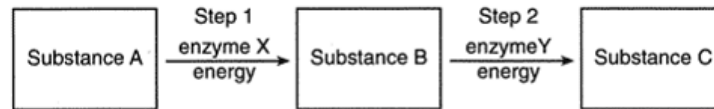
Letters *A* and *B* are best represented by which row in the chart?

Row	Metabolic Activity A	B
(1)	respiration	oxygen molecules
(2)	reproduction	hormone molecules
(3)	excretion	simple sugar molecules
(4)	digestion	amino acid molecules

Apr 8-2:13 PM

2

The diagram below represents the chemical pathway of a process in a human liver cell.



A particular liver cell is unable to make substance *C*. One possible explanation for the inability of this cell to make substance *C* is that

- (1) excess energy for step 2 prevented the conversion of substance *B* to substance *C*
- (2) an excess of enzyme *X* was present, resulting in a decrease in the production of substance *B*
- (3) nuclear DNA was altered resulting in the cell being unable to make enzyme *Y*
- (4) a mutation occurred causing a change in the ability of the cell to use substance *C*

Apr 8-2:20 PM

3

When a person does strenuous exercise, small blood vessels (capillaries) near the surface of the skin increase in diameter. This change allows the body to be cooled. These statements best illustrate

- | | |
|-----------------|----------------|
| (1) synthesis | (3) excretion |
| (2) homeostasis | (4) locomotion |

Apr 8-2:23 PM

4

Which sequence represents the correct order of levels of organization found in a complex organism?

- (1) cells → organelles → organs → organ systems → tissues
- (2) tissues → organs → organ systems → organelles → cells
- (3) organelles → cells → tissues → organs → organ systems
- (4) organs → organ systems → cells → tissues → organelles

Apr 8-2:25 PM

5

Scientific studies show that identical twins who were separated at birth and raised in different homes may vary in height, weight, and intelligence. The most probable explanation for these differences is that

- (1) original genes of each twin increased in number as they developed
- (2) one twin received genes only from the mother while the other twin received genes only from the father
- (3) environments in which they were raised were different enough to affect the expression of their genes
- (4) environments in which they were raised were different enough to change the genetic makeup of both individuals

Apr 8-2:26 PM

6

When DNA separates into two strands, the DNA would most likely be directly involved in

- (1) replication
- (2) fertilization
- (3) differentiation
- (4) evolution

Apr 11-8:29 AM

7

Which statement is true regarding an alteration or change in DNA?

- (1) It is always known as a mutation.
- (2) It is always advantageous to an individual.
- (3) It is always passed on to offspring.
- (4) It is always detected by the process of chromatography.

Apr 11-8:30 AM

8

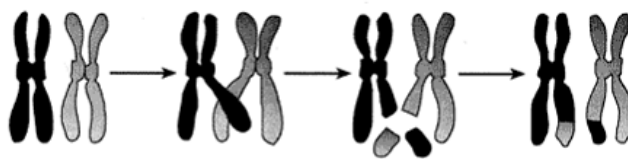
In heterotrophs, energy for the life processes comes from the chemical energy stored in the bonds of

- (1) water molecules
- (2) oxygen molecules
- (3) organic compounds
- (4) inorganic compounds

Apr 11-8:31 AM

9

The diagram below shows a process that can occur during meiosis.



The most likely result of this process is

- (1) a new combination of inheritable traits that can appear in the offspring
- (2) an inability to pass either of these chromosomes on to offspring
- (3) a loss of genetic information that will produce a genetic disorder in the offspring
- (4) an increase in the chromosome number of the organism in which this process occurs

Apr 11-8:32 AM

10

In animals, the normal development of an embryo is dependent on

- (1) fertilization of a mature egg by many sperm cells
- (2) production of new cells having twice the number of chromosomes as the zygote
- (3) production of body cells having half the number of chromosomes as the zygote
- (4) mitosis and the differentiation of cells after fertilization has occurred

Apr 11-8:33 AM

11

Which process normally occurs at the placenta?

- (1) Oxygen diffuses from fetal blood to maternal blood.
- (2) Materials are exchanged between fetal and maternal blood.
- (3) Maternal blood is converted into fetal blood.
- (4) Digestive enzymes pass from maternal blood to fetal blood.

Apr 11-8:36 AM

12

Individual cells can be isolated from a mature plant and grown with special mixtures of growth hormones to produce a number of genetically identical plants. This process is known as

- (1) cloning
- (2) meiotic division
- (3) recombinant DNA technology
- (4) selective breeding

Apr 11-8:38 AM