

- 1) Homeostasis is the ability of the body to C  
A) prevent the external environment from changing.  
B) prevent the internal environment from changing.  
C) quickly restore changed conditions to normal.  
D) ignore external stimuli to remain in a state of rest.  
E) prevent excessive blood loss.
- 2) Cells regulate their level of activity by regulating the amount of proteins present in the cell at any given time, so an up regulation of enzymes would be expected to A  
A) increase the level of productivity of chemical reactions that rely on them.  
B) decrease the level of productivity of chemical reactions that rely on them.  
C) increase the rate of reactions catalyzed by the enzymes.  
D) decrease the rate of reactions catalyzed by the enzymes.  
E) both decrease the level of productivity of chemical reactions that rely on them and decrease the rate of reactions catalyzed by the enzymes.
- 3) Which group of elements makes up more than 90% of the body's mass? E  
A) O, H, Na  
B) C, Na, K  
C) O, Ca, H  
D) Ca, C, O  
E) O, C, H
- 4) A positively charged ion is called a(n) D  
A) electron.  
B) proton.  
C) neutron.  
D) cation.  
E) anion.
- 5) The most important energy-transferring compound in cells is a nucleotide known as D  
A) glucose.  
B) fructose.  
C) protein.  
D) adenosine triphosphate.  
E) deoxyribonucleic acid.
- 6) Cholesterol is D  
A) a precursor to steroid hormones.  
B) a structural component of cell membranes.  
C) a dangerous fat that is absent from a healthy body.  
D) a precursor to steroid hormones and a structural component of cell membranes.  
E) a precursor to steroid hormones, a structural component of cell membranes, and a dangerous fat that is absent from a healthy body.

- 7) Which of the following is NOT a function of membrane proteins? **E**
- A) bind to ligands
  - B) regulate the passage of ions
  - C) act as transport molecules for various solutes
  - D) anchor or stabilize the cell membrane
  - E) produce energy
- 8) The cellular organelle(s) responsible for packaging and transporting proteins is/are the **E**
- A) microtubules.
  - B) mitochondria.
  - C) rough endoplasmic reticulum.
  - D) ribosomes.
  - E) Golgi complex.
- 9) Which of the following statements is a mechanistic explanation? **B**
- A) Glucose is transported from blood into cells because cells require glucose to meet their energy needs.
  - B) Glucose is transported from blood into cells by transporters in response to insulin.
- 10) For the capillary shown label the zoomed in box for:
- A) the blood
  - B) the extracellular fluid
  - C) the luminal (or apical) membrane
  - D) the basolateral membrane
- Answer the following:
- E) Draw in the basement membrane. **Below basolateral membrane**
  - F) What type of tissue is represented? Include the structural (type/shape) and functional descriptions. **Exchange epithelium, simple squamous.**
  - G) What does the double arrow represent? **Paracellular transport (filtration also acceptable)**

