

Question 1-11 are based on the following passage.

Cholesterol: Friend and Foe

Cholesterol is a familiar term in contemporary discussions concerning health and heart disease. Primarily synthesized by our own bodies, **1** the ability to function diversely in cell membranes and various organ systems is one characteristic of this molecule. However, its presence is not **2** profitable in all circumstances: when an individual consumes food that leads to high blood cholesterol levels, significant health complications may result. Because this molecule plays such a critical role in our health, it's important to understand its function and recognize the dangers associated with having high cholesterol levels.

1

- A) NO CHANGE
- B) cell membranes and various organ systems offer locations for this molecule to function.
- C) the diverse functions of this molecule extend to cell membranes and various organ systems.
- D) this molecule has diverse functions in cell membranes and various organ systems.

2

- A) NO CHANGE
- B) beneficial
- C) charitable
- D) worthy

Cholesterol molecules have a diverse range of functions within the human body, whether in cell membranes or as **3** part of: the nervous, endocrine, or digestive systems. In part due to its rigid, tetracyclic structure, cholesterol contributes to the structural integrity of cell membranes. A research study conducted by Sheng et al. revealed that membrane cholesterol also participates in cellular signaling through binding to specific domains of some proteins. Furthermore, cholesterol is a key component of the central nervous system, where it primarily **4** existed in the myelin sheaths of nerve cells; these sheaths help increase the speed of nerve impulse transmission. **5** In addition to these functions, cholesterol is an important precursor to bile acids of the digestive system and steroids of the endocrine system.

3

- A) NO CHANGE
- B) part; of the nervous, endocrine,
- C) part of the nervous, endocrine,
- D) part of the nervous; endocrine;

4

- A) NO CHANGE
- B) was existing
- C) had existed
- D) exists

5

At this point, the writer is considering adding the following sentence.

Successful nerve impulse transmission depends not only on myelin sheaths, but also on the presence of ion pumps embedded in the cell membrane.

Should the writer make this addition here?

- A) Yes, because it describes how the presence of ion pumps is related to the functions of cholesterol.
- B) Yes, because it supports the passage's main argument with a second example of cholesterol's potential adverse health effects.
- C) No, because it identifies a relationship between the nervous system and ion pumps that has already been discussed.
- D) No, because it interrupts the paragraph's discussion of cholesterol's functions with loosely related information.

6 To illustrate the importance of contemporary research on cholesterol, its presence in abnormally high concentrations can result in significant health issues. Many researchers believe that certain dietary choices, for example, eating—significant amounts of saturated fats and avoiding unsaturated fats— contribute to high cholesterol levels in the bloodstream. Since cholesterol molecules do not dissolve in water or blood, they are also transported to various parts of the body by lipoproteins, which are constructed from both fats and proteins. 9 When the concentration of LDL cholesterol is high, it may clog an individual's arteries and lead to a variety of medical conditions.

6 Which choice provides the best transition?

- A) NO CHANGE
- B) Despite the numerous positive functions of cholesterol,
- C) Considering the many sources of cholesterol,
- D) Even though cholesterol can bind to some proteins,

7

- A) NO CHANGE
- B) choices; for example, eating substantial amounts of saturated fats and avoiding unsaturated fats;
- C) choices—for example, eating substantial amounts of saturated fats and avoiding unsaturated fats—
- D) choices, for example: eating substantial amounts of saturated fats and avoiding unsaturated fats,

8

- A) NO CHANGE
- B) that is
- C) it is
- D) this is

9 At this point, the writer wants to add details about the specific functions of lipoproteins. Which choice most effectively accomplishes this goal?

- A) There are many different types of lipoproteins, including very low density lipoproteins, intermediate density lipoproteins, low density lipoproteins, and high density lipoproteins.
- B) While the liver is the primary organ of lipoprotein synthesis, research has demonstrated that chylomicrons, a type of lipoprotein, are synthesized in the mucosa of the small intestine.
- C) Low density lipoproteins (LDL) carry cholesterol into the bloodstream and various parts of the body, while high density lipoproteins (HDL) remove cholesterol from the bloodstream for disposal.
- D) Lipoproteins are classified by density, which can be calculated from the ratio of triacylglycerol/protein concentration and the actual diameter of the molecule.

Notwithstanding the health risks associated with high cholesterol levels, it is important to remember that this molecule is **10** integral to many necessary and vital life functions. From the structure of cell membranes to the swift conduction of nerve impulses, from digestion to hormone production, many physiological structures and processes depend on cholesterol. Consequently, **11** it's important to fund future research initiatives that investigate the significance of this molecule.

10

- A) NO CHANGE
- B) integral to many necessary
- C) integral and vital to many necessary
- D) necessary and vital to many integral

11

Which choice best concludes the passage?

- A) NO CHANGE
- B) everyone should focus on more important dietary issues than cholesterol consumption.
- C) it's important to understand why cholesterol is insoluble in both water and blood.
- D) maintaining a healthy cholesterol level is a step toward a healthy life.