

BLM 1-49, Unit 1 Test

1. D
2. A
3. C
4. A
5. C
6. A
7. C
8. D
9. D
10. A
11. H
12. B
13. D
14. F
15. A
16. I
17. J
18. C
19. G
20. E

21. The results of both situations are due to osmosis. When blood cells are placed in strong salt solution, water moves out of the cells due to osmosis, causing the cells to shrivel. When the cells are placed into pure water, water moves into the cells due to osmosis, causing the cells to swell and burst.

22. Students' examples may vary.

- (a) An organelle is a cell structure that has a specific function to help an individual cell survive. An organ system is one or more organs that perform specific functions for the entire human body.
- (b) A mitochondrion is an example of an organelle. The circulatory system is an example of an organ system.

23. Connective tissue holds together and supports other tissues. It also protects and insulates organs. Damaged connective tissue would mean support for tissues and protection for organs would be weak and underdeveloped. This could manifest itself as many symptoms, such as weak joints, breakdown of tissue, and more frequent infections.

24. Proteins are needed to build various parts of the body such as muscles, skin and hair. Proteins are also used for various chemical reactions in the body. Without protein, building of these tissues would suffer, as would different chemical reactions.

25. Any three of:

- transporting nutrients
- transporting wastes
- necessary for many chemical reactions in the body
 - the body requires water for cooling

26. Any two of:

- assist in the breakdown of food
- assist in the absorption of food
- bacteria produce certain vitamins that we need

27. Calcium is a mineral. It is required for proper formation of bones and teeth, so the lack of it will cause weak bones and teeth. Calcium is also needed for proper muscle and nerve function, so muscles and nerves may not perform properly when calcium is in short supply.

28. White blood cells are an important component of the immune response to a pathogen. White blood cells fight infection by eating foreign invaders. When an infection takes place the immune system produces more white blood cells so that the body can more effectively get rid of the invaders.

29. Jenner's deliberate infection of the boy caused the boy to have an immune response, develop antibodies, and gain protection from a disease. This is similar to modern vaccines, which also cause an immune response, antibody development, and give disease protection.

Jenner's infection of the boy with a disease is also different because modern vaccine are not full-fledged diseases. Modern vaccines are special versions of antigens that are incapable of producing illness.

30. B cells recognize antigens present in the body. Without B cells, the baby's immune system would not be able to recognize pathogens—therefore the pathogens could go on to cause infection without being detected.