

## **Chapter 02**

### **True / False**

1. An element is a substance whose atoms all contain the same number of neutrons.

- a. True
- b. False

**ANSWER:** False

**POINTS:** 1

**REFERENCES:** Elements, Isotopes, Compounds

**QUESTION TYPE:** True / False

**HAS VARIABLES:** False

**DATE CREATED:** 2/24/2015 12:55 AM

**DATE MODIFIED:** 2/24/2015 12:56 AM

2. Isotopes are atoms of the same element that have different numbers of neutrons but the same number of protons.

- a. True
- b. False

**ANSWER:** True

**POINTS:** 1

**REFERENCES:** Elements, Isotopes, Compounds

**QUESTION TYPE:** True / False

**HAS VARIABLES:** False

**DATE CREATED:** 2/24/2015 12:56 AM

**DATE MODIFIED:** 2/24/2015 12:57 AM

3. Atoms that gain electrons become negatively charged.

- a. True
- b. False

**ANSWER:** True

**POINTS:** 1

**REFERENCES:** Bonds and Energy

**QUESTION TYPE:** True / False

**HAS VARIABLES:** False

**DATE CREATED:** 2/24/2015 12:57 AM

**DATE MODIFIED:** 2/24/2015 12:58 AM

4. The two purine nitrogen bases are adenine and guanine.

- a. True
- b. False

**ANSWER:** True

**POINTS:** 1

**REFERENCES:** Bonds and Energy

**QUESTION TYPE:** True / False

**HAS VARIABLES:** False

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*DATE CREATED:* 2/24/2015 12:58 AM

*DATE MODIFIED:* 2/24/2015 1:03 AM

5. Temperature has no effect on diffusion rate.

- a. True
- b. False

*ANSWER:* False

*POINTS:* 1

*REFERENCES:* Movement of Materials into and out of Cells

*QUESTION TYPE:* True / False

*HAS VARIABLES:* False

*DATE CREATED:* 2/24/2015 1:04 AM

*DATE MODIFIED:* 2/24/2015 1:05 AM

**Multiple Choice**

6. What are the smallest particles of an element?

- a. atoms
- b. molecules
- c. compounds
- d. cells

*ANSWER:* a

*POINTS:* 1

*REFERENCES:* Atomic Structure

*QUESTION TYPE:* Multiple Choice

*HAS VARIABLES:* False

*DATE CREATED:* 2/24/2015 1:05 AM

*DATE MODIFIED:* 2/24/2015 1:07 AM

7. The compact central nucleus of an atom contains \_\_\_\_ and \_\_\_\_.

- a. electrons; protons
- b. electrons; neutrons
- c. protons; neutrons
- d. electrons; isotopes

*ANSWER:* c

*POINTS:* 1

*REFERENCES:* Atomic Structure

*QUESTION TYPE:* Multiple Choice

*HAS VARIABLES:* False

*DATE CREATED:* 2/24/2015 1:07 AM

*DATE MODIFIED:* 2/24/2015 1:09 AM

8. What element is found in all living matter?

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- a. nitrogen
- b. carbon
- c. lithium
- d. oxygen

**ANSWER:** b

**POINTS:** 1

**REFERENCES:** Elements, Isotopes, Compounds

**QUESTION TYPE:** Multiple Choice

**HAS VARIABLES:** False

**DATE CREATED:** 2/24/2015 1:09 AM

**DATE MODIFIED:** 2/24/2015 1:11 AM

9. In an atom, \_\_\_\_ orbit the nucleus.

- a. protons
- b. electrons
- c. neutrons
- d. isotopes

**ANSWER:** b

**POINTS:** 1

**REFERENCES:** Atomic Structure

**QUESTION TYPE:** Multiple Choice

**HAS VARIABLES:** False

**DATE CREATED:** 2/24/2015 1:11 AM

**DATE MODIFIED:** 2/24/2015 1:13 AM

10. Atoms that gain \_\_\_\_ become negatively charged.

- a. protons
- b. neutrons
- c. electrons
- d. isotopes

**ANSWER:** c

**POINTS:** 1

**QUESTION TYPE:** Multiple Choice

**HAS VARIABLES:** False

**DATE CREATED:** 2/24/2015 1:16 AM

**DATE MODIFIED:** 2/24/2015 1:17 AM

11. What is formed when two or more different elements combine by sharing electrons?

- a. proton
- b. chemical
- c. ion
- d. compound

**ANSWER:** d

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POINTS: 1  
QUESTION TYPE: Multiple Choice  
HAS VARIABLES: False  
DATE CREATED: 2/24/2015 1:18 AM  
DATE MODIFIED: 2/24/2015 1:20 AM

12. What is formed when an atom loses or gains an electron?

- a. proton
- b. chemical
- c. ion
- d. compound

ANSWER: c  
POINTS: 1  
QUESTION TYPE: Multiple Choice  
HAS VARIABLES: False  
DATE CREATED: 2/24/2015 1:20 AM  
DATE MODIFIED: 2/24/2015 1:22 AM

13. What kind of bond is formed when one atom gains an electron and another atom loses an electron?

- a. ionic
- b. covalent
- c. hydrogen
- d. molecular

ANSWER: a  
POINTS: 1  
QUESTION TYPE: Multiple Choice  
HAS VARIABLES: False  
DATE CREATED: 2/24/2015 1:22 AM  
DATE MODIFIED: 2/24/2015 1:25 AM

14. What kind of bond is formed when two atoms share electrons?

- a. ionic
- b. covalent
- c. hydrogen
- d. isotopic

ANSWER: b  
POINTS: 1  
QUESTION TYPE: Multiple Choice  
HAS VARIABLES: False  
DATE CREATED: 2/24/2015 1:25 AM  
DATE MODIFIED: 2/24/2015 1:27 AM

15. Molecules containing which type of bond do not dissociate in water?

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- a. ionic
- b. covalent
- c. hydrogen
- d. isotopic

ANSWER: b

POINTS: 1

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

DATE CREATED: 2/24/2015 1:28 AM

DATE MODIFIED: 2/24/2015 1:31 AM

16. Elements or molecules contributing electrons during a reaction are called \_\_\_\_\_.

- a. covalent
- b. electron donors
- c. electron acceptors
- d. electron carriers

ANSWER: b

POINTS: 1

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

DATE CREATED: 2/24/2015 1:31 AM

DATE MODIFIED: 2/24/2015 1:34 AM

17. Which process occurs when water is used to break down larger molecules?

- a. photosynthesis
- b. combination reaction
- c. synthesis
- d. hydrolysis

ANSWER: d

POINTS: 1

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

DATE CREATED: 2/24/2015 1:34 AM

DATE MODIFIED: 2/24/2015 1:37 AM

18. What is the universal solvent?

- a. carbon
- b. urea
- c. hydrogen
- d. water

ANSWER: d

POINTS: 1

QUESTION TYPE: Multiple Choice

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*HAS VARIABLES:* False

*DATE CREATED:* 2/24/2015 1:37 AM

*DATE MODIFIED:* 2/24/2015 1:40 AM

19. The liver converts toxic ammonia to a harmless substance called \_\_\_\_\_.

- a. urea
- b. carbohydrate
- c. sodium
- d. mineral salt

*ANSWER:* a

*POINTS:* 1

*QUESTION TYPE:* Multiple Choice

*HAS VARIABLES:* False

*DATE CREATED:* 2/24/2015 1:41 AM

*DATE MODIFIED:* 2/24/2015 1:43 AM

20. The smallest carbohydrates are simple \_\_\_\_\_.

- a. proteins
- b. lipids
- c. amino acids
- d. sugars

*ANSWER:* d

*POINTS:* 1

*QUESTION TYPE:* Multiple Choice

*HAS VARIABLES:* False

*DATE CREATED:* 2/24/2015 1:44 AM

*DATE MODIFIED:* 2/24/2015 1:47 AM

21. Starch, glycogen, and cellulose are all examples of \_\_\_\_\_.

- a. carbohydrates
- b. lipids
- c. proteins
- d. nucleotides

*ANSWER:* a

*POINTS:* 1

*QUESTION TYPE:* Multiple Choice

*HAS VARIABLES:* False

*DATE CREATED:* 2/24/2015 1:47 AM

*DATE MODIFIED:* 2/24/2015 1:51 AM

22. The basic building blocks of proteins are \_\_\_\_\_.

- a. triglycerides
- b. monosaccharides

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- c. amino acids
- d. nucleotides

**ANSWER:** c  
**POINTS:** 1  
**QUESTION TYPE:** Multiple Choice  
**HAS VARIABLES:** False  
**DATE CREATED:** 2/24/2015 2:20 AM  
**DATE MODIFIED:** 2/24/2015 2:27 AM

23. Protein catalysts in the body that increase the rate of chemical reactions are called \_\_\_\_.
- a. amino acids
  - b. enzymes
  - c. atoms
  - d. nucleotides

**ANSWER:** b  
**POINTS:** 1  
**QUESTION TYPE:** Multiple Choice  
**HAS VARIABLES:** False  
**DATE CREATED:** 2/24/2015 2:27 AM  
**DATE MODIFIED:** 2/24/2015 2:31 AM

24. Which nucleotide is found in RNA but not in DNA?
- a. guanine
  - b. adenine
  - c. thymine
  - d. uracil

**ANSWER:** d  
**POINTS:** 1  
**QUESTION TYPE:** Multiple Choice  
**HAS VARIABLES:** False  
**DATE CREATED:** 2/24/2015 2:31 AM  
**DATE MODIFIED:** 2/24/2015 2:35 AM

25. A(n) \_\_\_\_ molecule is a double-stranded helical chain made up of nucleotides.
- a. ATP
  - b. RNA
  - c. DNA
  - d. lipid

**ANSWER:** c  
**POINTS:** 1  
**REFERENCES:** Common Substances in Living Systems  
**QUESTION TYPE:** Multiple Choice  
**HAS VARIABLES:** False

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*DATE CREATED:* 2/24/2015 2:39 AM

*DATE MODIFIED:* 2/24/2015 2:43 AM

26. The covalent bonds that are formed between different amino acids to form a protein are known as \_\_\_\_\_.

- a. peptide bonds
- b. ionic bonds
- c. hydrogen bonds
- d. electrolyte bonds

*ANSWER:* a

*POINTS:* 1

*REFERENCES:* Common Substances in Living Systems

*QUESTION TYPE:* Multiple Choice

*HAS VARIABLES:* False

*DATE CREATED:* 2/24/2015 2:43 AM

*DATE MODIFIED:* 2/24/2015 2:45 AM

27. When the solute concentration outside a red blood cell equals the solute concentration inside the cell, the solution is called \_\_\_\_\_.

- a. hypotonic
- b. osmotic
- c. hypertonic
- d. isotonic

*ANSWER:* d

*POINTS:* 1

*REFERENCES:* Movement of Materials into and out of Cells

*QUESTION TYPE:* Multiple Choice

*HAS VARIABLES:* False

*DATE CREATED:* 2/24/2015 2:45 AM

*DATE MODIFIED:* 2/24/2015 2:46 AM

28. A red blood cell that is placed in a hypotonic solution will \_\_\_\_\_.

- a. shrink
- b. not change
- c. swell
- d. crenulate

*ANSWER:* c

*POINTS:* 1

*REFERENCES:* Movement of Materials into and out of Cells

*QUESTION TYPE:* Multiple Choice

*HAS VARIABLES:* False

*DATE CREATED:* 2/24/2015 2:47 AM

*DATE MODIFIED:* 2/24/2015 2:48 AM

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29. The type of transport that requires energy input is called \_\_\_\_\_.

- a. passive transport
- b. diffusion
- c. osmosis
- d. active transport

ANSWER: d

POINTS: 1

REFERENCES: Movement of Materials into and out of Cells

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

DATE CREATED: 2/24/2015 2:49 AM

DATE MODIFIED: 2/24/2015 2:50 AM

30. A solution with a pH of 3 is called a(n) \_\_\_\_\_.

- a. acid
- b. base
- c. ion
- d. solute

ANSWER: a

POINTS: 1

REFERENCES: Acid Rain

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

DATE CREATED: 2/24/2015 2:50 AM

DATE MODIFIED: 2/24/2015 2:52 AM

31. Distilled water has a pH of 7 and is therefore \_\_\_\_\_.

- a. acidic
- b. basic
- c. neutral
- d. ionic

ANSWER: c

POINTS: 1

REFERENCES: Acid Rain

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

DATE CREATED: 2/24/2015 2:52 AM

DATE MODIFIED: 2/24/2015 2:54 AM

32. What kind of bonds do the mineral salts form?

- a. hydrogen
- b. ionic
- c. covalent

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d. isotopic

ANSWER: b

POINTS: 1

REFERENCES: Bonds and Energy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

DATE CREATED: 2/24/2015 2:54 AM

DATE MODIFIED: 2/24/2015 2:56 AM

33. The \_\_\_\_ structure of proteins is determined by the hydrogen bonds between amino acids that cause the protein to coil into helices or pleated sheets.

a. secondary

b. tertiary

c. primary

d. quaternary

ANSWER: a

POINTS: 1

REFERENCES: Common Substances in Living Systems

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

DATE CREATED: 2/24/2015 2:57 AM

DATE MODIFIED: 2/24/2015 2:59 AM

34. Which type of chemical bond holds water molecules together by forming a bridge between the negative oxygen atom of one water molecule and the positive hydrogen atoms of another water molecule?

a. isotopic

b. hydrogen

c. ionic

d. covalent

ANSWER: b

POINTS: 1

REFERENCES: Bonds and Energy

QUESTION TYPE: Multiple Choice

HAS VARIABLES: False

DATE CREATED: 2/24/2015 2:59 AM

DATE MODIFIED: 2/24/2015 3:01 AM

35. DNA and RNA are examples of \_\_\_\_.

a. proteins

b. lipids

c. nucleic acids

d. carbohydrates

ANSWER: c

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*POINTS:* 1  
*REFERENCES:* Common Substances in Living Systems  
*QUESTION TYPE:* Multiple Choice  
*HAS VARIABLES:* False  
*DATE CREATED:* 2/24/2015 3:01 AM  
*DATE MODIFIED:* 2/24/2015 3:04 AM

**Completion**

36. Fats, phospholipids, and steroids are all examples of \_\_\_\_\_.

*ANSWER:* lipids  
*POINTS:* 1  
*REFERENCES:* Common Substances in Living Systems  
*QUESTION TYPE:* Completion  
*HAS VARIABLES:* False  
*DATE CREATED:* 2/24/2015 3:04 AM  
*DATE MODIFIED:* 2/24/2015 3:05 AM

37. The science that deals with the elements, their compounds, and the chemical reactions that occur between elements and compounds is known as \_\_\_\_\_.

*ANSWER:* chemistry  
*POINTS:* 1  
*REFERENCES:* Introduction  
*QUESTION TYPE:* Completion  
*HAS VARIABLES:* False  
*DATE CREATED:* 2/24/2015 3:06 AM  
*DATE MODIFIED:* 2/26/2015 6:42 AM

38. The most abundant substance in living cells is \_\_\_\_\_.

*ANSWER:* water  
*POINTS:* 1  
*REFERENCES:* Common Substances in Living Systems  
*QUESTION TYPE:* Completion  
*HAS VARIABLES:* False  
*DATE CREATED:* 2/24/2015 3:07 AM  
*DATE MODIFIED:* 2/24/2015 3:08 AM

39. With regard to pH levels, \_\_\_\_\_ maintain homeostasis within cells.

*ANSWER:* buffers  
*POINTS:* 1  
*REFERENCES:* Acid Rain  
*QUESTION TYPE:* Completion  
*HAS VARIABLES:* False  
*DATE CREATED:* 2/24/2015 3:08 AM

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DATE MODIFIED: 2/24/2015 3:16 AM

40. Tomato juice has a pH of 4; therefore, it is considered a(n) \_\_\_\_\_.

ANSWER: acid

POINTS: 1

REFERENCES: Acid Rain

QUESTION TYPE: Completion

HAS VARIABLES: False

DATE CREATED: 2/24/2015 3:16 AM

DATE MODIFIED: 2/24/2015 3:18 AM

**Matching**

*Match the description with the corresponding term.*

- a. acid
- b. base
- c. ATP
- d. diffusion
- e. osmosis
- f. active transport
- g. DNA
- h. electron
- i. proton
- j. ammonia

REFERENCES: Common Substances in Living Systems  
Common Substances in Living Systems  
Movement of Materials into and out of Cells  
Atomic Structure  
Atomic Structure  
Introduction  
Acid Rain  
Movement of Materials into and out of Cells  
Acid Rain  
Movement of Materials into and out of Cells

QUESTION TYPE: Matching

HAS VARIABLES: False

DATE CREATED: 2/24/2015 3:18 AM

DATE MODIFIED: 2/24/2015 3:26 AM

41. genetic material

ANSWER: g

POINTS: 1

42. nitrogen-containing waste

ANSWER: j

POINTS: 1

43. movement of water

ANSWER: e

POINTS: 1

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44. negatively charged part of atom

*ANSWER:* h

*POINTS:* 1

45. positively charged part of atom

*ANSWER:* i

*POINTS:* 1

46. chemical fuel (energy currency of the cell)

*ANSWER:* c

*POINTS:* 1

47. hydrogen ion producer

*ANSWER:* a

*POINTS:* 1

48. movement of solute to area of lower concentration

*ANSWER:* d

*POINTS:* 1

49. combines with hydrogen ions

*ANSWER:* b

*POINTS:* 1

50. requires energy to move substances to area of higher concentration

*ANSWER:* f

*POINTS:* 1