Test Bank for Memmler's The Human Body in Health and Disease 14th Cohen

Chapter 1: Organization of the Human Body Test Bank

MULTIPLE CHOICE

1. Which word is derived from the Greek word meaning "cutting up"?

A.	dissection	C.	pathology
B.	physiology	D.	anatomy

ANS: D PTS: 1 DIF: Memorization
REF: MCS: 3 TOP: Introduction

2. Which word is defined as the study of the function of living organisms and their parts?

A.	dissection	C.	pathology
B.	physiology	D.	anatomy

ANS: B PTS: 1 DIF: Memorization
REF: MCS: 6 TOP: Introduction

3. Which word is defined as the scientific study of disease?

A.	dissection	C.	pathology
B.	physiology	D.	anatomy

ANS: C PTS: 1 DIF: Memorization
REF: MCS: 6 TOP: Introduction

4. Cells

A.	are more complex than tissues
B.	are the first level of organization in the body
C.	are the smallest living units of structure and function in the body
D.	both B and C

ANS: C PTS: 1 DIF: Application REF: MCS: 8
TOP: Structural levels of organization

5. A group of cells that act together to perform a function is called a(n)

A.	molecule	C.	tissue
B.	organ	D.	organism

ANS: C PTS: 1 DIF: Memorization
REF: MCS: 8 TOP: Structural levels of organization

6. The heart is an example of a(n)

A.	organ	C.	organism
B.	tissue	D.	system

ANS: A PTS: 1 DIF: Application REF: MCS: 8
TOP: Structural levels of organization

7. The levels of organization from most simple to most complex are

A.	cell □ chemical □ organ □ tissue □ system
B.	tissue □ cell □ chemical □ organ □ system
C.	chemical □ tissue □ cell □ organ □ system
D.	chemical □ cell □ tissue □ organ □ system

ANS: D PTS: 1 DIF: Memorization
REF: MCS: 7 TOP: Structural levels of organization

8. When using directional terms to describe the body, it is assumed that the body is in what position?

A.	supine	C.	lateral
B.	anatomical	D.	prone

ANS: B PTS: 1 DIF: Memorization
REF: MCS: 9 TOP: Anatomical position

9. The supine position

A.	describes the body lying face up
B.	is also called anatomical position
C.	describes the body lying face down
D.	both A and B

ANS: A PTS: 1 DIF:
REF: MCS: Memorization TOP: Anatomical
9 position

10. The prone position

A.	describes the body lying face up
B.	is also called the anatomical position
C.	describes the body lying face down
D.	both B and C

ANS: C PTS: 1 DIF:
REF: MCS: Memorization TOP: Anatomical
9 position

11. Because humans walk upright, the term *dorsal* can be used in place of the

term

A.	inferior	C.	anterior
B.	posterior	D.	distal

ANS: B PTS: 1 DIF: Memorization REF: MCS: 9 TOP: Anatomical direction

12. The opposite term for *posterior* in humans is

A.	superior	C.	ventral
B.	anterior	D.	both B and C

ANS: D PTS: 1 DIF: Application REF: MCS: 9 TOP: Anatomical direction

13. The opposite term for *superficial* is

A.	deep	C.	posterior
B.	inferior	D.	medial

ANS: A PTS: 1 DIF: Memorization REF: MCS: 10 TOP: Anatomical direction

14. The body section that divides the right ear from the left ear is a ___ section.

A.	frontal	C.	coronal
B.	sagittal	D.	transverse

ANS: B PTS: 1 DIF: Application REF: MCS: 10 TOP: Planes or body sections

15. The body section that divides the nose from the back of the head is a _____ section.

A.	frontal	C.	midsagittal
B.	sagittal	D.	transverse

ANS: A PTS: 1 DIF: Application REF: MCS: 10 TOP: Planes or body sections

16. A section that divides the body into mirror images is a____section.

A.	frontal	C.	midsagittal
B.	coronal	D.	transverse

ANS: C PTS: 1 DIF: Application REF: MCS: 10 TOP: Planes or body sections

17. The two major body cavities are called

A.	thoracic and abdominal	C.	dorsal and ventral

B.	thoracic and pelvic	D.	mediastinum and pleural

ANS: C PTS: 1 DIF: Memorization
REF: MCS: 10 TOP: Body cavities

18. The liver can be found in the

A.	upper right quadrant	C.	hypogastric region
B.	epigastric region	D.	both A and B

ANS: D PTS: 1 DIF: Application REF: MCS: 11
TOP: Body cavities

19. The word "leg" correctly describes the

A.	area from the hip to the foot	C.	area between the hip and the knee
B.	area from the knee to the ankle	D.	femoral area

ANS: B PTS: 1 DIF: Memorization
REF: MCS: 13 TOP: Body regions

20. The human body tries to maintain a constant body temperature. This is an example of

A.	homeostasis	C.	an effector
B.	a positive feedback loop	D.	a sensor

ANS: A PTS: 1 DIF: Application REF: MCS: 15
TOP: The balance of body functions

21. The part of a feedback loop that has the direct effect on the regulated condition is called

A.	homeostasis	C.	the sensor
B.	the effector	D.	the control center

ANS: B PTS: 1 DIF: Memorization REF: MCS: 16 TOP: The balance of body functions

22. The part of the feedback loop that detects a change in the regulated condition is called

A.	homeostasis	C.	the sensor
B.	the effector	D.	the control center

ANS: C PTS: 1 DIF: Memorization REF: MCS: 15 TOP: The balance of body functions

23. The part of the feedback loop that compares the present condition to the homeostatic condition the body is trying to maintain is called

A.	homeostasis	C.	the sensor
B.	the effector	D.	the control center

ANS: D REF: PTS: 1 DIF: Memorization
MCS: 15 TOP: The balance of body functions

24. When your body temperature drops below normal, your muscles begin to contract rapidly, making you shiver and generating heat. In this case your muscles are acting as the

A.	sensor	C.	control center
B.	effector	D.	both A and C

ANS: B PTS: 1 DIF: Synthesis REF: MCS: 15
TOP: The balance of body functions

25. Which of the following body functions is an example of a positive feedback loop?

A.	maintaining a pH of 7.45 in the body
B.	forming a blood clot
C.	uterine contractions during labor
D.	both B and C

ANS: D PTS: 1 DIF: Application REF: MCS: 16
TOP: The balance of body functions

26. The level of organization directly below the organ level is the___level.

A.	system	C.	tissue
B.	cellular	D.	chemical

ANS: C PTS: 1 DIF: Memorization
REF: MCS: 7 TOP: Structural levels of organization

27. Which of these terms cannot be applied to a body in the anatomical position?

A.	dorsal	C.	supine
B.	posterior	D.	both A and B

ANS: C PTS: 1 DIF: Memorization REF: MCS: 9 TOP: Anatomical position

28. Which term means *toward the head*?

A.	anterior	C.	superficial
B.	superior	D.	ventral

ANS: B PTS: 1 DIF: Memorization TOP: Anatomical direction
REF: MCS: 9

29. Which describes the anatomical relationship of the wrist to the elbow?

A.	The elbow is proximal to the wrist.
B.	The elbow is distal to the wrist.
C.	The elbow is superficial to the wrist.
D.	The elbow is lateral to the wrist.

ANS: A PTS: 1 DIF: Application REF: MCS: 9
TOP: Anatomical direction

30. A coronal plane or section is another term for a____plane.

A.	sagittal	C.	transverse
B.	midsagittal	D.	frontal

ANS: D PTS: 1 DIF: Memorization
REF: MCS: 10 TOP: Planes of body sections

31. The muscular sheet called the diaphragm divides the

A.	right and left pleural cavities
B.	thoracic cavity and abdominopelvic cavities
C.	abdominal and pelvic cavities
D.	thoracic cavity and mediastinum

ANS: B REF: PTS: 1 DIF: Memorization
MCS: 10 TOP: Body cavities

32. Which is not a part of the upper abdominopelvic region?

A.	right hypochondriac region
B.	epigastric region
C.	hypogastric region
D.	All of the above are part of the upper abdominopelvic region.

ANS: C REF: PTS: 1 DIF: Memorization TOP: Body cavities
MCS: 11

TRUE/FALSE

1. Anatomy is defined as the study of the structure of an organism.

ANS: T PTS: 1 DIF:
REF: MCS:

PTS: 1

DIF: Memorization TOP: Introduction

2. The word “dissection” comes from Greek words meaning “cutting up.”

ANS: F PTS: 1 DIF:
REF: MCS: 3 Memorization TOP: Introduction

3. Anatomy deals with the study of structure, whereas physiology deals with the study of function.

ANS: T PTS: 1 DIF: Memorization
REF: MCS: 3 | MCS: 6 TOP: Introduction

4. Pathology is the scientific study of disease.

ANS: T PTS: 1 DIF: Memorization
REF: MCS: 6 TOP: Introduction

5. A protein molecule is considered to be at the cellular level of organization.

ANS: F PTS: 1 DIF: Analysis REF: MCS: 7
TOP: Structural levels of organization

6. The cell is the simplest level of organization in the human body.

ANS: F PTS: 1 DIF: Memorization
REF: MCS: 7 TOP: Structural levels of organization

7. Cells are considered to be the smallest living unit of structure and function in the body.

ANS: T PTS: 1 DIF:
REF: MCS: 8 Memorization TOP: Structural levels of organization

8. A group of cells working together to perform a specific function is called an organ.

ANS: F PTS: 1 DIF:
REF: MCS: 8 Memorization TOP: Structural levels of organization

9. A group of several different tissues working together to perform a specific function is called an organ.

ANS: T PTS: 1 DIF:
REF: MCS: 8

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10. The organ is the highest level of organization in the human body.

ANS: F PTS: 1 DIF: Memorization TOP: Structural levels of organization
REF: MCS: 7

11. Anatomical position is the reference position for the directional terms of the body.

ANS: T PTS: 1 DIF: Application REF: MCS: 9
TOP: Anatomical position

12. If you like to sleep on your stomach, you prefer sleeping in the supine position.

ANS: F PTS: 1 DIF: Application REF: MCS: 9
TOP: Anatomical position

13. Doctors recommend putting babies to sleep on their backs to help prevent breathing problems. This is the supine position.

ANS: T PTS: 1 DIF: Application REF: MCS: 9
TOP: Anatomical position

14. The anatomical position can be described as the body being erect with the arms held at shoulder level with the palms of the hands facing down.

ANS: F PTS: 1 DIF: Memorization
REF: MCS: 9 TOP: Anatomical position

15. The ankle is inferior to the knee.

ANS: T PTS: 1 DIF: Application REF: MCS: 9
TOP: Anatomical direction

16. Dorsal and anterior are interchangeable terms when referring to humans.

ANS: F PTS: 1 DIF: Memorization
REF: MCS: 9 TOP: Anatomical direction

17. The lungs are medial to the heart.

ANS: F PTS: 1 DIF: Application REF: MCS: 9
TOP: Anatomical direction

18. The elbow is proximal to the wrist.

ANS: T PTS: 1 DIF: Application REF: MCS: 9
TOP: Anatomical direction

19. The skin is superficial to the muscles.

ANS: T PTS: 1 DIF: Application REF: MCS: 10
TOP: Anatomical direction

20. Proximal and medial are opposite terms.

ANS: F PTS: 1 DIF: Memorization
REF: MCS: 9 TOP: Anatomical direction

21. The knee is distal to the ankle.

ANS: F PTS: 1 DIF: Application REF: MCS: 9
TOP: Anatomical direction

22. The middle toe is medial to the big toe but lateral to the smallest toe.

ANS: F PTS: 1 DIF: Application REF: MCS: 9
TOP: Anatomical direction

23. Frontal and coronal sections refer to the same thing.

ANS: T PTS: 1 DIF: Memorization
REF: MCS: 10 TOP: Planes or body sections

24. Sagittal and midsagittal sections refer to the same thing.

ANS: F PTS: 1 DIF: Memorization
REF: MCS: 10 TOP: Planes or body sections

25. A plane dividing a body into upper and lower portions is a transverse plane.

ANS: T PTS: 1 DIF:
Memorization REF: MCS: 10 TOP: Planes or
body sections

26. A plane dividing the body into front and back portions is a sagittal plane.

ANS: F PTS: 1 DIF: Memorization
REF: MCS: 10 TOP: Planes or body sections

27. A midsagittal plane divides the right shoulder from the left shoulder.

ANS: T PTS: 1 DIF: Application REF: MCS: 10
TOP: Planes or body sections

28. A transverse plane divides the eyes from the back of the head.

ANS: F PTS: 1 DIF: Application REF: MCS: 10
TOP: Planes or body sections

29. A frontal section divides the eyes from the back of the head.

ANS: T PTS: 1 DIF: Application REF: MCS: 10
TOP: Planes or body sections

30. The ventral cavity is one of the main cavities of the body.

ANS: T PTS: 1 DIF: Memorization
REF: MCS: 10 TOP: Body cavities

31. The mediastinum is a subdivision of the abdominal cavity.

ANS: F PTS: 1 DIF: Memorization
REF: MCS: 10 TOP: Body cavities

32. The pleural cavities are subdivisions of the thoracic cavity.

ANS: T PTS: 1 DIF: Memorization
REF: MCS: 10 TOP: Body cavities

33. The abdominal cavity is inferior to the thoracic cavity.

ANS: T PTS: 1 DIF: Application REF: MCS: 9
TOP: Body cavities

34. The abdominal cavity and the pelvic cavity are separated by a muscle called the diaphragm.

ANS: F REF: PTS: 1 DIF: Memorization
MCS: 10 TOP: Body cavities

35. The thoracic cavity and the abdominal cavity are separated by a muscle called the diaphragm.

ANS: T PTS: 1 DIF: Memorization

REF: MCS: 11 TOP: Body cavities

36. The right hypochondriac region is completely in the right upper quadrant of the abdomen.

ANS: T PTS: 1 DIF: Application REF: MCS: 11
TOP: Body cavities

37. The left hypochondriac region is completely in the left lower quadrant of the abdomen.

ANS: F PTS: 1 DIF: Application REF: MCS: 11
TOP: Body cavities

38. The right lumbar region is superior to the right iliac region.

ANS: T PTS: 1 DIF: Application REF: MCS: 11
TOP: Body cavities

39. The dorsal cavity includes the spinal cavity.

ANS: T PTS: 1 DIF: Memorization
REF: MCS: 11 TOP: Body cavities

40. The brain is located in the dorsal cavity.

ANS: T PTS: 1 DIF: Memorization
REF: MCS: 15 TOP: Body cavities

41. Homeostasis is the relative consistency of the internal environment of the body.

ANS: T PTS: 1 DIF:
Memorization REF: MCS: 15 TOP: The balance of body functions

42. One method the body has of maintaining homeostasis is a positive feedback loop.

ANS: F REF: PTS: 1 DIF: Memorization
MCS: 15 TOP: The balance of body functions

43. In a feedback loop, the part of the system that compares the actual condition to the controlled condition is called the sensor.

ANS: F PTS: 1 DIF: Memorization

REF: MCS: 15 TOP: The balance of body functions

44. In a feedback loop, the part of the system that effects a change in the controlled condition is called the effector.

ANS: T REF: PTS: 1 DIF: Memorization
MCS: 15 TOP: The balance of body functions

45. In a feedback loop, the part of the system that detects a change in the controlled condition is called the sensor.

ANS: T PTS: 1 DIF:
Memorization REF: MCS: 16 TOP: The balance
of body functions

46. A negative feedback loop stimulates and amplifies a change in the internal environment.

ANS: F PTS: 1 DIF:
Memorization REF: MCS: 16 TOP: The balance
of body functions

47. A negative feedback loop opposes or negates a change in the internal environment.

ANS: T PTS: 1 DIF: Memorization
REF: MCS: 16 TOP: The balance of body functions

48. The body has more positive feedback loops than negative feedback loops.

ANS: F PTS: 1 DIF: Memorization
REF: MCS: 16 TOP: The balance of body functions

49. The formation of a blood clot is an example of a negative feedback loop.

ANS: F PTS: 1 DIF: Application REF: MCS: 16
TOP: The balance of body functions

50. The pH of the body must remain within a very narrow range. It would more likely be controlled by a negative feedback loop.

ANS: T PTS: 1 DIF: Application REF: MCS: 16
TOP: The balance of body functions

51. Women have one more positive feedback loop than do men.

ANS: T PTS: 1 DIF: Synthesis REF: MCS: 10

TOP: The balance of body functions

52. Both the heart and the blood vessels are considered to be organs in the cardiovascular system.

ANS: T PTS: 1 DIF: Application REF: MCS: 10
TOP: Structural levels of organization

53. An "L" on an anatomical compass rosette can stand for "Left" or "Lateral" depending on what is opposite it.

ANS: T REF: PTS: 1 DIF: Memorization
MCS: 10 TOP: Anatomical direction

54. An "S" on an anatomical compass rosette can stand for "Superior" or "Supine" depending on what is opposite it.

ANS: F REF: PTS: 1 DIF: Memorization
MCS: 10 TOP: Anatomical direction

55. When you look at an anatomical compass rosette in the text, the "R" on the rosette is on your right side.

ANS: F PTS: 1 DIF: Application REF: MCS: 7
TOP: Anatomical direction

MATCHING

Match each term with its corresponding definition or description.

A.	chemical level	D.	organ level
B.	cellular level	E.	system level
C.	tissue level	F.	organism

1. the smallest "living" part of the body
2. a word used to denote a living thing
3. level that includes atoms and molecules
4. level made up of groups of tissues working together to perform a task
5. level that is the most complex unit that makes up the body
6. level that is made up of a group of cells working together to perform a task

1. ANS: B PTS: 1 DIF: Memorization
REF: MCS: 7 TOP: Structural levels of organization
2. ANS: F PTS: 1 DIF: Memorization

REF: MCS: 7 TOP: Structural levels of
3. ANS: organization A PTS: 1 DIF: Memorization

REF: MCS: 7 TOP: Structural levels of
4. ANS: organization D PTS: 1 DIF: Memorization

REF: MCS: 7 TOP: Structural levels of
5. ANS: organization E PTS: 1 DIF: Memorization

REF: MCS: 7 TOP: Structural levels of
6. ANS: organization C PTS: 1 DIF: Memorization

REF: MCS: 10 TOP: Structural levels of organization

Match each term with its corresponding definition or description.

A.	superior	F.	inferior
B.	anterior	G.	posterior
C.	medial	H.	lateral
D.	proximal	I.	distal
E.	superficial	J.	deep

7. nearer to the surface of the body
8. toward the head or above
9. toward the midline of the body
10. away from the trunk or point of origin
11. toward the feet or below
12. toward the back
13. farther away from the surface of the body
14. toward the side
15. toward the front
16. nearest to the trunk or point of origin

7. ANS: E PTS: 1 DIF: Memorization

REF: MCS: 9 TOP: Anatomical
8. ANS: direction A PTS: 1 DIF: Memorization

REF: MCS: 9 TOP: Anatomical
9. ANS: direction C PTS: 1 DIF: Memorization

REF: MCS: 9 TOP: Anatomical
10. ANS: direction I PTS: 1 DIF: Memorization

REF: MCS: 9 TOP: Anatomical
11. ANS: direction F PTS: 1 DIF: Memorization

REF: MCS: 9 TOP: Anatomical
12. ANS: direction G PTS: 1 DIF: Memorization

REF: MCS: 10 TOP: Anatomical
13. ANS: direction J PTS: 1 DIF: Memorization

REF: MCS: 9 TOP: Anatomical
14. ANS: direction H PTS: 1 DIF: Memorization

REF: MCS: 9 TOP: Anatomical
15. ANS: direction B PTS: 0 DIF: Memorization

REF: MCS: 9 TOP: Anatomical
16. ANS: direction D PTS: 0 DIF: Memorization

REF: MCS: 10 TOP: Anatomical direction

Match each term with its corresponding definition or description.

A.	frontal plane	E.	thoracic cavity
B.	transverse plane	F.	abdominopelvic cavity
C.	sagittal plane	G.	cranial cavity
D.	diaphragm	H.	mediastinum

17. a muscular sheet dividing the thoracic and abdominopelvic cavities
18. the lower part of the ventral body cavity
19. divides the body into right and left sides
20. part of the dorsal cavity that contains the brain
21. divides the body into upper and lower parts
22. a subdivision of the thoracic cavity
23. divides the body into front and rear parts
24. cavity that is subdivided into pleural cavities

17. ANS: D PTS: 1 DIF: Memorization

REF: MCS: 11 TOP: Body cavities
18. ANS: F PTS: 1 DIF: Memorization

REF: MCS: 10 TOP: Body cavities
19. ANS: C PTS: 1 DIF: Memorization

REF: MCS: 10 TOP: Planes or body
20. ANS sections G PTS: 1 DIF: Memorization
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REF: MCS: 10 TOP: Body cavities
21. ANS B PTS: 1 DIF: Memorization
:

REF: MCS: 10 TOP: Planes or body
22. ANS sections H PTS: 1 DIF: Memorization
:

REF: MCS: 10 TOP: Body cavities
23. ANS A PTS: 1 DIF: Memorization
:

REF: MCS: 3 TOP: Planes or body
24. ANS sections E PTS: 1 DIF: Memorization
:

REF: MCS: 7 TOP: Body cavities

SHORT ANSWER

1. Explain the difference between anatomy and physiology.

ANS:
Answers will vary.

PTS: 1 DIF: Memorization REF: MCS: 9
TOP: Introduction

2. Name and explain the structural levels of organization of the body and give an example of each.

ANS:
Answers will vary.

PTS: 1 DIF: Application REF: MCS: 9
TOP: Structural levels of organization

3. Describe the anatomical position.

ANS:
Answers will vary.

PTS: 1 DIF: Memorization REF: MCS:
10 TOP: Anatomical position

4. Define or explain the words “prone” and “supine.”

ANS:
Answers will vary.

PTS: 1 DIF: Memorization REF: MCS: 10 TOP: Anatomical position

5. Name and describe the three planes or body sections.

ANS:
Answers will vary.

PTS: 1 DIF: Memorization REF: MCS: 16 TOP: Planes or body cavities

6. Name the two major body cavities and describe what is in each.

ANS:
Answers will vary.

PTS: 1 DIF: Memorization REF: MCS: 16 TOP: Body cavities

7. Explain the three parts of a negative feedback loop.

ANS:
Answers will vary.

PTS: 1 DIF: Memorization REF: MCS: 16 TOP: The balance of body functions

8. What is meant by a negative feedback loop? Give an example of a negative feedback loop in the body.

ANS:
Answers will vary.

PTS: 1 DIF: Application REF: Pages 9-10 TOP: The balance of body functions

9. What is meant by a positive feedback loop? Give an example of a positive feedback loop in the body.

ANS:

Answers will vary.

PTS: 1 DIF: Application REF: MCS: 16 TOP: The balance of body functions

10. List the anatomical directions and explain each of them. If there are alternate terms for an anatomical direction, give those terms also.

ANS:
Answers will vary.

PTS: 1 DIF: Memorization REF: MCS: 9 TOP: Anatomical direction

Chapter 2: Chemistry, Matter, and Life

Test Bank

MULTIPLE CHOICE

1. Which subatomic particle has a positive charge?

A.	proton	C.	electron
B.	neutron	D.	nucleus

ANS: A PTS: 1 DIF: Memorization
REF: MCS: 27 TOP: Atoms

2. Which subatomic particle has no charge?

A.	proton	C.	electron
B.	neutron	D.	nucleus

ANS: B PTS: 1 DIF: Memorization
REF: MCS: 27 TOP: Atoms

3. Which subatomic particle has a negative charge?

A.	proton	C.	electron
B.	neutron	D.	nucleus

ANS: C PTS: 1 DIF: Memorization
REF: MCS: 27 TOP: Atoms

4. Which subatomic particle is found in the nucleus?

A.	proton	C.	electron
B.	neutron	D.	both A and B

ANS: D PTS: 1 DIF: Memorization
REF: MCS: 27 TOP: Atoms

5. Electrons are found

A.	in the nucleus
B.	in orbitals
C.	at various distances from the nucleus called energy levels
D.	both B and C

ANS: D PTS: 1 DIF: Application REF: Pages 27-28
TOP: Atoms

6. The atomic number of an atom is the number of

A.	protons	C.	electrons
B.	neutrons	D.	both A and B

ANS: A PTS: 1 DIF: Memorization
REF: MCS: 27 TOP: Atoms

7. The atomic mass of an atom is the number of

A.	protons	C.	electrons
B.	neutrons	D.	both A and B

ANS: D PTS: 1 DIF: Memorization
REF: MCS: 27 TOP: Atoms

8. The subatomic particle that determines how an atom unites with other atoms is the

A.	proton	C.	electron
B.	neutron	D.	both A and B

ANS: C PTS: 1 DIF: Memorization
REF: MCS: 27 TOP: Atoms

9. An atom that contains 20 protons, 21 neutrons, and 20 electrons has an atomic number of

A.	20	C.	40
B.	41	D.	61

ANS: A PTS: 1 DIF: Application REF: MCS: 27
TOP: Atoms

10. An atom that contains 20 protons, 21 neutrons, and 20 electrons has an atomic mass of

A.	20	C.	40
B.	41	D.	61

ANS: B PTS: 1 DIF: Application REF: MCS: 27
TOP: Atoms

11. An atom that contains 20 protons, 21 neutrons, and 20 electrons has

A.	a positive charge
B.	a negative charge
C.	no charge (electrically neutral)
D.	not enough information is given to determine its charge

ANS: C PTS: 1 DIF: Application REF: MCS: 27
TOP: Atoms

12. Which of these elements is not one of the four elements that make up most of the human body?

A.	carbon	C.	oxygen
B.	nitrogen	D.	calcium

ANS: D PTS: 1 DIF: Memorization
REF: MCS: 28 TOP: Elements, molecules, and compounds

13. Bonds that usually dissociate in water to form electrolytes are ___ bonds.

A.	ionic	C.	organic
B.	covalent	D.	both B and C

ANS: A PTS: 1 DIF: Memorization REF: MCS: 29 TOP: Ionic bonds

14. The bonds formed when electrons are shared are called

A.	electrolytes	C.	covalent bonds
B.	ionic bonds	D.	inorganic bonds

ANS: C PTS: 1 DIF: Memorization
REF: MCS: 30 TOP: Covalent bonds

15. The process of dehydration synthesis

A.	uses water to turn large molecules into smaller ones
B.	adds a molecule of water to the reactants
C.	converts smaller molecules into larger ones by removing water
D.	both A and B

ANS: C REF: PTS: 1 DIF: Memorization
MCS: 31 TOP: Water

16. The process of hydrolysis

A.	uses water to turn large molecules into smaller ones
B.	removes a molecule of water from the reactants
C.	converts smaller molecules into larger molecules by removing water
D.	both B and C

ANS: A REF: PTS: 1 DIF: Memorization
MCS: 31 TOP: Water

17. Acids have

A.	a pH less than 7	C.	more OH^- than H^+ ions
B.	more H^+ ions than OH^- ions	D.	both A and B

ANS: D PTS: 1 DIF: Memorization REF: MCS: 32 TOP: Acids, bases, and salts

18. Bases have

A.	a pH less than 7	C.	a pH greater than 7
B.	more H^+ ions than OH^- ions	D.	both A and B

ANS: C PTS: 1 DIF: Memorization REF: MCS: 32 TOP: Acids, bases, and salts

19. A solution with a pH of 4

A.	has 100 times more H^+ ions than a solution with a pH of 2
B.	has 100 times fewer H^+ ions than a solution with a pH of 2
C.	has 100 times fewer H^+ ions than a solution with a pH of 6
D.	is basic

ANS: B PTS: 1 DIF: Synthesis REF: MCS: 32 TOP: Acids, bases, and salts

20. The end product of a reaction between a strong acid and a strong base is

A.	water	C.	a weak acid and a weak base
B.	a salt	D.	both A and B

ANS: D PTS: 1 DIF: Memorization REF: MCS: 32 TOP: Acids, bases, and salts

21. Which of the following is an example of a monosaccharide?

A.	sucrose	C.	lactose
B.	glucose	D.	glycogen

ANS: B PTS: 1 DIF: Memorization REF: MCS: 33 TOP: Carbohydrates

22. Which of the following is an example of a polysaccharide?

A.	sucrose	C.	lactose
B.	glucose	D.	glycogen

ANS: D REF: PTS: 1 DIF: Memorization
MCS: 33 TOP: Carbohydrates

23. Triglycerides

A.	are steroid lipids
B.	have a phosphorus-containing unit on one end
C.	have two fatty acids
D.	have three fatty acids

ANS: D PTS: 1 DIF: Memorization
REF: MCS: 34 TOP: Lipids

24. Phospholipids

A.	contain glycerol	C.	contain three fatty acids
B.	contain two fatty acids	D.	are steroid lipids

ANS: B PTS: 1 DIF: Memorization
REF: MCS: 34 TOP: Lipids

25. Cholesterol

A.	contains three fatty acids	C.	is a steroid lipid
B.	contains two fatty acids	D.	contains glycerol

ANS: C PTS: 1 DIF: Memorization
REF: Pages 34-35 TOP: Lipids

26. Which of the following is not true of proteins?

A.	They have water-repelling tails.	C.	They contain nitrogen.
B.	They are made up of amino acids.	D.	They contain peptide bonds.

ANS: A PTS: 1 DIF: Memorization
REF: MCS: 34 TOP: Proteins

27. Which of the following is a structural protein?

A.	collagen	C.	enzymes

B.	keratin	D.	both A and B

ANS: D PTS: 1 DIF: Memorization
REF: MCS: 35 TOP: Proteins

28. Which of the following is a functional protein?

A.	collagen	C.	enzymes
B.	keratin	D.	both A and B

ANS: C PTS: 1 DIF: Memorization
REF: MCS: 36 TOP: Proteins

29. Which of the following substances is not found in a DNA nucleotide?

A.	phosphate unit	C.	nitrogen base
B.	glycerol molecule	D.	a sugar

ANS: B PTS: 1 DIF: Memorization
REF: MCS: 34 TOP: Nucleic acids

30. Which substance is found only in DNA?

A.	adenine	C.	thymine
B.	guanine	D.	cytosine

ANS: C PTS: 1 DIF: Memorization
REF: MCS: 36 TOP: Nucleic acids

31. The nitrogen atom has a total of seven electrons. To have a full outer energy level, it would have to

A.	add one electron	C.	add three electrons
B.	lose one electron	D.	lose two electrons

ANS: C PTS: 1 DIF: Synthesis REF: MCS: 27
TOP: Atoms

32. Which type of chemical bond does not result in the formation of a new molecule?

A.	hydrogen bond
B.	ionic bond
C.	covalent bond
D.	None of the above; all chemical bonds result in the formation of a new molecule.

ANS: A REF: PTS: 1 DIF: Memorization TOP: Hydrogen bonds
MCS: 30

TRUE/FALSE

1. Matter is anything that occupies space and has mass.

ANS: T REF: PTS: 1 DIF: Memorization
MCS: 27 TOP: Levels of chemical organization

2. The mass of an atom is determined by the total number of protons and electrons.

ANS: F REF: PTS: 1 DIF: Memorization
MCS: 27 TOP: Atoms

3. The two subatomic particles found in the nucleus of the atom are protons and neutrons.

ANS: T REF: PTS: 1 DIF: Memorization
MCS: 27 TOP: Atoms

4. A full atomic orbital always contains eight electrons.

ANS: F REF: PTS: 1 DIF: Memorization
MCS: 28 TOP: Atoms

5. The atomic number of an atom is the number of protons plus the number of electrons.

ANS: F REF: PTS: 1 DIF: Memorization
MCS: 27 TOP: Atoms

6. The closer an orbital is to the nucleus of an atom, the higher its energy level.

ANS: F REF: PTS: 1 DIF: Memorization
MCS: 28 TOP: Atoms

7. An atom with 11 protons, 12 neutrons, and 10 electrons has an atomic number of 11.

ANS: T PTS: 1 DIF: Application REF: MCS: 27
TOP: Atoms

8. An atom with 11 protons, 12 neutrons, and 10 electrons has an atomic mass of 21.

ANS: F PTS: 1 DIF: Application REF: MCS: 27
TOP: Atoms

9. An atom with 11 protons, 12 neutrons, and 10 electrons has a +1 charge.

ANS: T PTS: 1 DIF: Application REF: MCS: 27
TOP: Atoms

10. An element is a substance composed of only one type of atom.

ANS: T PTS: 1 DIF: Memorization
REF: MCS: 28 TOP: Elements, molecules, and compounds

11. All molecules are not necessarily compounds.

ANS: T PTS: 1 DIF: Application REF: MCS: 28
TOP: Elements, molecules, and compounds

12. Chemical bonds form when atoms share, donate, or borrow electrons.

ANS: T PTS: 1 DIF: Memorization
REF: MCS: 29 TOP: Chemical bonding

13. Ionic bonds result from atoms sharing electrons.

ANS: F PTS: 1 DIF: Memorization
REF: MCS: 29 TOP: Ionic bonds

14. When an ionic compound is put into water, it dissociates into ions.

ANS: T PTS: 1 DIF: Memorization
REF: MCS: 29 TOP: Ionic bonds

15. Covalent bonds are formed when atoms share electrons.

ANS: T PTS: 1 DIF: Memorization
REF: MCS: 30 TOP: Covalent bonds

16. When a covalent compound is put into water, it dissociates into ions.

ANS: F PTS: 1 DIF: Memorization
REF: MCS: 30 TOP: Covalent bonds

17. For a compound to be considered an organic compound it must have a C- O or an H-O bond.

ANS: F PTS: 1 DIF: Memorization

REF: MCS: 31 TOP: Inorganic chemistry

18. Water is the most abundant organic compound in the body.

ANS: F REF: PTS: 1 DIF: Memorization
MCS: 31 TOP: Water

19. The process of dehydration synthesis makes bigger molecules from smaller molecules.

ANS: T REF: PTS: 1 DIF: Memorization
MCS: 31 TOP: Water

20. The process of dehydration synthesis has water as one of its end products.

ANS: T REF: PTS: 1 DIF: Memorization
MCS: 31 TOP: Water

21. The process of hydrolysis has water as one of its end products.

ANS: F REF: PTS: 1 DIF: Memorization
MCS: 31 TOP: Water

22. One of the end products of hydrolysis would have one more hydrogen atom than it did at the beginning of the reaction.

ANS: T PTS: 1 DIF: Synthesis REF: MCS: 31
TOP: Water

23. Acids have a higher concentration of H^+ ions than OH^- ions.

ANS: T PTS: 1 DIF:
Memorization REF: MCS: 32 TOP: Acids, bases,
and salts

24. Bases have a higher concentration of OH^- ions than H^+ ions.

ANS: T PTS: 1 DIF:
Memorization REF: MCS: 32 TOP: Acids, bases,
and salts

25. A solution with a pH of 8 has more H^+ ions than a solution with a pH of 4.

ANS: F PTS: 1 DIF: Application REF: MCS: 32
TOP: Acids, bases, and salts

26. A solution with a pH of 5 has more H^+ ions than a solution with a pH of 7.

ANS: T PTS: 1 DIF: Application REF: MCS: 32
TOP: Acids, bases, and salts

27. A solution with a pH of 2 has 10 times the number of H^+ ions than a solution with a pH of 3.

ANS: T PTS: 1 DIF: Application REF: MCS: 32
TOP: Acids, bases, and salts

28. When a strong acid and a strong base react, one of the end products is water.

ANS: T PTS: 1 DIF: Memorization REF: MCS: 32 TOP: Acids, bases, and salts

29. A weak acid almost completely dissociates in water.

ANS: F PTS: 1 DIF: Memorization REF: MCS: 32 TOP: Acids, bases, and salts

30. When a strong acid and a strong base react, one of the end products is a salt.

ANS: T PTS: 1 DIF: Memorization REF: MCS: 32 TOP: Acids, bases, and salts

31. A buffer is a substance that resists a sudden change in

pH. ANS: T PTS: 1 DIF: Memorization
REF: MCS: 33 TOP: Acids, bases, and salts

32. The basic unit of a carbohydrate is a monosaccharide.

ANS: T PTS: 1 DIF: Memorization REF: MCS: 33 TOP: Carbohydrates

33. A molecule of glucose is larger than a molecule of sucrose.

ANS: F PTS: 1 DIF: Application REF: MCS: 33

TOP: Carbohydrates

34. Sucrose is an example of a disaccharide.

ANS: T REF: PTS: 1 DIF: Memorization
MCS: 33 TOP: Carbohydrates

35. Glycogen and starch are both examples of polysaccharides.

ANS: T REF: PTS: 1 DIF: Memorization
MCS: 33 TOP: Carbohydrates

36. The process of dehydration synthesis could be used to convert a monosaccharide into a disaccharide.

ANS: T PTS: 1 DIF: Synthesis REF: MCS: 31 | MCS: 33
TOP: Water and carbohydrates

37. Both fats and oils are lipids.

ANS: T PTS: 1 DIF: Memorization
REF: MCS: 34 TOP: Lipids

38. A triglyceride contains two fatty acid molecules.

ANS: F PTS: 1 DIF: Memorization
REF: MCS: 34 TOP: Lipids

39. A triglyceride contains a molecule of glycerol.

ANS: T PTS: 1 DIF: Memorization
REF: MCS: 34 TOP: Lipids

40. Phospholipids contain three fatty acids.

ANS: F PTS: 1 DIF: Memorization
REF: MCS: 34 TOP: Lipids

41. Phospholipids are important molecules in the cell membrane.

ANS: T PTS: 1 DIF: Memorization
REF: Pages 34-35 TOP: Lipids

42. Cholesterol is a steroid lipid.

ANS: T PTS: 1 DIF: Memorization

REF: MCS: 35 TOP: Lipids

43. Cholesterol contains two fatty acid molecules.

ANS: F PTS: 1 DIF: Memorization
REF: MCS: 34 TOP: Lipids

44. Cholesterol is needed for the formation of several hormones in the body.

ANS: T PTS: 1 DIF: Memorization
REF: MCS: 34 TOP: Lipids

45. The basic building block of proteins is nucleotides.

ANS: F PTS: 1 DIF: Memorization
REF: MCS: 35 TOP: Proteins

46. The basic building blocks of protein are held together by peptide bonds.

ANS: T PTS: 1 DIF: Memorization
REF: MCS: 35 TOP: Proteins

47. Structural proteins include collagen, keratin, and enzymes.

ANS: F PTS: 1 DIF: Memorization
REF: Pages 35-36 TOP: Proteins

48. Enzymes are functional proteins that act as chemical catalysts.

ANS: T PTS: 1 DIF: Memorization
REF: MCS: 36 TOP: Proteins

49. The basic building blocks of nucleic acids are nucleotides.

ANS: T PTS: 1 DIF: Memorization
REF: MCS: 36 TOP: Nucleic acids

50. The DNA and RNA molecules are the same except the DNA has thymine and the RNA molecule has uracil.

ANS: F PTS: 1 DIF: Application REF: MCS: 36
TOP: Nucleic acids

51. The nitrogen bases adenine, guanine, and cytosine can be found in both RNA and DNA.

ANS: T REF: PTS: 1 DIF: Memorization
MCS: 36 TOP: Nucleic acids

52. One difference between DNA and RNA is the type of sugar found in the nucleotides.

ANS: T REF: PTS: 1 DIF: Memorization
MCS: 36 TOP: Nucleic acids

53. The smallest unit of matter is the electron.

ANS: F REF: PTS: 1 DIF: Memorization
MCS: 27 TOP: Levels of chemical organization

54. The oxygen atom has a total of eight electrons. That means it has six electrons in its outer energy level.

ANS: T PTS: 1 DIF: Analysis REF: MCS: 27
TOP: Atoms

55. The number of electrons in the outer energy level of an atom determines how it behaves chemically.

ANS: T REF: PTS: 1 DIF: Memorization
MCS: 27 TOP: Atoms

56. The formula for glucose is $C_6H_{12}O_6$. This indicates that there are 24 atoms in a molecule of glucose.

ANS: T PTS: 1 DIF: Application REF: MCS: 28
TOP: Elements, molecules, and compounds

57. The electrolyte most often formed by magnesium (Mg) is Mg^{++}. This shows that the ion has two more electrons than protons.

ANS: F PTS: 1 DIF: Application REF: MCS: 30
TOP: Ionic bonds

58. Water is the most common solute in the human body.

ANS: F REF: PTS: 1 DIF: Memorization
MCS: 31 TOP: Water

59. Both sucrose and lactose are examples of disaccharides.

ANS: T REF: PTS: 1 DIF: Memorization
MCS: 33 TOP: Carbohydrates

60. Fats tend to be solids at room temperature.

ANS: T REF: PTS: 1 DIF: Memorization
MCS: 34 TOP: Lipids

61. Both cholesterol and phospholipids are involved in the structure of the cell membrane.

ANS: T REF: PTS: 1 DIF: Memorization
MCS: 34 TOP: Lipids

62. The lock-and-key model describes how two strands of DNA are able to join so precisely to form a double helix.

ANS: F REF: PTS: 1 DIF: Memorization
MCS: 36 TOP: Proteins

MATCHING

Match each part of the atom with its corresponding description.

A.	protons	C.	electrons
B.	neutrons	D.	both protons and neutrons

1. part of the atom that is found in the nucleus
2. part of the atom that is found in orbitals around the nucleus
3. part of the atom that gives an atom its atomic number
4. part of the atom that when combined with the proton gives the atom its atomic mass

1. ANS: D PTS: 1 DIF: Memorization
REF: MCS: 27 TOP: Atoms
2. ANS: C PTS: 1 DIF: Memorization
REF: MCS: 27 TOP: Atom
3. ANS: A PTS: 1 DIF: Memorization
REF: MCS: 27 TOP: Atoms

4. ANS: B PTS: 1 DIF: Memorization

REF: MCS: 27 TOP: Atoms

Match each organic compound with its corresponding description.

A.	carbohydrates	E.	proteins
B.	triglycerides	F.	RNA
C.	phospholipids	G.	DNA
D.		cholesterol	

5. compound whose basic unit is a monosaccharide
6. nucleic acid that contains the nitrogen base uracil
7. lipid that is used to make hormones such as estrogen and testosterone
8. nucleic acid that contains the nitrogen base thymine
9. lipid that is composed of a molecule of glycerol and three fatty acids
10. lipid that has two fatty acids and is important in the cell membrane
11. an enzyme

5. ANS: A PTS: 1 DIF: Memorization

REF: MCS: 33 TOP: Carbohydrate

6. ANS: F PTS: 1 DIF: Memorization

REF: MCS: 36 TOP: Nucleic acids

7. ANS: D PTS: 1 DIF: Memorization

REF: MCS: 34 TOP: Lipid

8. ANS: G PTS: 1 DIF: Memorization

REF: MCS: 36 TOP: Nucleic acids

9. ANS: B PTS: 1 DIF: Memorization

REF: MCS: 34 TOP: Lipid

10. ANS: C PTS: 1 DIF: Memorization

REF: MCS: 34 TOP: Lipid

11. ANS: E PTS: 1 DIF: Memorization

REF: MCS: 35 TOP: Proteins

Match each term with its corresponding description or definition.

A.	nucleus	G.	covalent bonds
B.	ionic bond	H.	orbitals

C.	atomic mass	I.	hydrolysis

D.	compound	J.	dehydration synthesis
E.	electrolyte	K.	acid
F.	atomic number	L.	base

12. part of the atom in which electrons are found
13. equal to the number of protons an atom has
14. molecules that form ions when dissolved in water
15. process by which reactants combine only after hydrogen and oxygen atoms have been removed
16. compound that produces H^+ ions
17. part of the atom in which protons are found
18. bond formed by the attraction of atoms or molecules that have opposite charges
19. compound that produces OH^- ions
20. equal to the number of protons and neutrons in an atom
21. process by which water is used to make smaller molecules form larger molecules
22. bond that is formed when electrons are shared
23. a molecule that contains more than one type of atom

12. ANS: H PTS: 1 DIF: Memorization
REF: MCS: 27 TOP: Atoms
13. ANS: F PTS: 1 DIF: Memorization
REF: MCS: 27 TOP: Atom
14. ANS: E PTS: 1 DIF: Memorization
REF: MCS: 30 TOP: Ionic bonds
15. ANS: J PTS: 1 DIF: Memorization
REF: MCS: 31 TOP: Water
16. ANS: K PTS: 1 DIF: Memorization
REF: MCS: 32 TOP: Acids, bases, and salts
17. ANS: A PTS: 1 DIF: Memorization
REF: MCS: 27 TOP: Atom
18. ANS: B PTS: 1 DIF: Memorization
REF: MCS: 30 TOP: Ionic bonds
19. ANS: L PTS: 1 DIF: Memorization

REF: MCS: 32 TOP: Acids, bases, and salts C
20. ANS: PTS: 0 DIF: Memorization

REF: MCS: 27 TOP: Atoms
21. ANS: I PTS: 0 DIF: Memorization

REF: MCS: 31 TOP: Water
22. ANS: G PTS: 0 DIF: Memorization

REF: MCS: 30 TOP: Covalent bonds
23. ANS: D PTS: 0 DIF: Memorization

REF: MCS: 28 TOP: Elements, molecules, and compounds

SHORT ANSWER

1. Name the three parts of the atom and give a description of each.

ANS:
Answers will vary.

PTS: 1 DIF: Memorization REF: MCS: 27
TOP: Atoms

2. Explain how an ionic bond forms.

ANS:
Answers will vary.

PTS: 1 DIF: Memorization REF: MCS: 30
TOP: Ionic bonds

3. Explain how a covalent bond forms.

ANS:
Answers will vary.

PTS: 1 DIF: Memorization REF: MCS:
30 TOP: Covalent bonds

4. Explain the processes of dehydration synthesis and hydrolysis.

ANS:

Answers will vary.

PTS: 1 DIF: Memorization REF: MCS: 31 TOP: Water

5. Describe the difference between an acid solution and a base solution in terms of the amount and types of ions in each.

ANS:
Answers will vary.

PTS: 1 DIF: Memorization REF: MCS: 32 TOP: Acids, bases, and salts

6. Explain the relationship among H^+ ion concentration, OH^- ion concentration, and pH.

ANS:
Answers will vary.

PTS: 1 DIF: Memorization REF: MCS: 32 TOP: Acids, bases, and salts

7. Describe the structure of carbohydrates and explain their use in the body.

ANS:
Answers will vary.

PTS: 1 DIF: Memorization REF: MCS: 33 TOP: Carbohydrates

8. Describe the three types of lipids and give the function of each.

ANS:
Answers will vary.

PTS: 1 DIF: Memorization REF: MCS: 34 TOP: Lipids

9. Describe the structure of a protein and give examples of a structural protein and a functional protein.

ANS:
Answers will vary.

PTS: 1 DIF: Memorization REF: MCS: 35 TOP: Proteins

10. Explain the structure of a nucleic acid and list the differences between RNA and DNA.

ANS:
Answers will vary.

PTS: 1 DIF: Memorization REF: MCS: 36 TOP: Nucleic acids