EOC BIG REVIEW

Unit 1 Exam Review

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- 1. Which of the following is *not* a branch of biology?
 a. medicine
 b. ecology
 c. botany
 d. geology
 - 2. Technology can best be defined as
 - a. applied science.
 - b. the use of lenses and microscopes.
 - c. science that uses computers.
 - d. new inventions.
- _____ 3. Pure science is best defined as the
 - a. use of science to solve human problems.
 - b. study of the makeup of living things.
 - c. continuing search for new knowledge.
 - d. application of scientific knowledge.
 - 4. Scientific theories can be changed or replaced when
 - a. scientists make models of events or objects.
 - b. new technology is invented.
 - c. scientists decide to work on different problems.
 - d. new discoveries are made.

a. testing a hypothesis.

- 5. The first step in the scientific method is usually
 - c. collecting data.
 - b. forming a hypothesis. d. making an observation.
- 6. What does it mean to say that "no experiment is a failure"?
 - a. All experiments give scientists work to do.
 - b. All experiments yield the desired results.
 - c. All experiments are observations of real events.
 - d. All experiments involve manipulating variables.

7. Which instrument has been used to detect the oldest, most distant objects in the solar system?

- a. particle accelerator c. radio telescope
- b. spectroscope d. light telescope
- 8. Which question cannot be answered by an experiment?
 - a. Does penicillin kill Salmonella bacteria?
 - b. Is rabies caused by a virus?
 - c. Did a comet impact kill the dinosaurs?
 - d. Can radiation cause cancer?
 - 9. The force with which gravity pulls on a quantity of matter is referred to as
 - a. length. c. weight.
 - b. volume. d. mass.

 10.	 Scientific methods a. are a general description of scientific thinking. b. use critical thinking to solve scientific problems. c. are used to find and evaluate possible answers to problems. d. All of the above 			
 11.	SI is considered a consistent system because ita. uses derived units.b. dates back to 1795.c. has seven base units.d. is used worldwide.			
 12.	Which unit is used to measure the height of a bookcase?a. meterc. kilogramb. moled. kelvin			
 13.	Which unit is used to measure the mass of a computer?a. meterc. kilogramb. kelvind. mole			
 14.	Most scientific questions are developed froma. forming a hypothesis.c. observations.b. research.d. investigation.			
 15.	After formulating a question, the next step of the scientific method isa. to research and collect data.b. to perform an experiment.c. to test a hypothesis.d. to state a conclusion.			
 16.	 The main branches of natural science are a. medicine and agriculture. b. biology, zoology, and ecology. c. physics and chemistry. d. life, physical, and Earth science. 			
 17.	What do scientists who do pure science do?a. They do experiments to find out about the world.b. They develop new uses for scientific knowledge.c. They look for ways to use scientific knowledge to solve problems.d. They build faster and more powerful computers.			
 18.	 A scientific law is a. an explanation of a scientific observation. b. the same as a hypothesis. c. a description of a natural event. d. the conclusion of a scientific experiment. 			
 19.	 An important science skill is critical thinking. This means a. knowing when something is very important. b. testing a hypothesis during an experiment. c. thinking logically to solve a problem. d. discovering the shortcomings of others. 			
 20.	A scientific theory is an explanation thata. has been tested by many observations.b. predicts what will happen.			

	c. a scientist has tested with an experiment.d. has been published in a journal or book.	
21.	. What is the area of a room that is 4×10^2 cm long a a. 8×10^3 cm ² c. b. 8×10^5 cm ² d.	nd 2×10^3 cm wide? 6×10^3 cm ² 8×10^7 cm ²
22.	Orbital motion is a combination ofa. mass and friction.c.b. forward motion and free fall.d.	weight and vertical velocity. acceleration and gravity.
23.	When objects are moved further apart from each ota. decreases at first then increases.b. increases.c.d.	her, the force of gravity between them stays the same. decreases.
24.	 The weight of an object can be calculated by multip a. velocity. b. free-fall acceleration. c. 	blying mass by speed. distance.
25.	 When an object is in free fall, the only force acting a. gravity. b. friction. c. d. 	on it is terminal velocity. inertia.
26.	. Which of the following is equal to $5,800,000,000$ c a. 58×10^7 cm c. b. 58×10^9 cm d.	m? $5.8 \times 10^{8} \text{ cm}$ $5.8 \times 10^{9} \text{ cm}$
27.	 Which graph best shows a change in data over time a. line graph b. pie chart c. 	? bar graph All of the above
28.	 Of the following, the greatest gravitational force we a loaded freighter on the high seas and Earth. b. the moon and Earth. c. the moon and an astronaut standing on the moon d. a marble and a baseball 5 meters apart. 	ould occur between n.
29.	 In the absence of air resistance, how would the accerock differ if the objects were dropped from the same a. The book would accelerate ten times as fast as b. They would not differ; they would be the same c. The book would accelerate twice as fast as the d. The rock would accelerate twice as fast as the book would accelerate twice as fast as the boo	eleration of a 1.5 kg book and the acceleration of a 15 kg ne height? the rock. rock. pook.
30.	Free-fall acceleration near Earth's surfacea. depends on an object's weight.b. is the same for all objects.c.	depends on an object's mass. None of the above
31.	 A precise measurement is one that a. contains the correct number of significant figure b. contains at least three significant figures. c. is close to the true value. d. is as exact as possible. 	es.

- 32. *Increasing* which of these conditions results in more gravitational force between two objects?
 - a. mass
 - c. distance b. acceleration d. surface area
- 33. Which statement about weight is *incorrect*?
 - a. An object's weight is directly proportional to its mass.
 - b. The weight of an object depends on gravity.
 - c. An object weighs more on the moon than it weighs on Earth.
 - d. A change in an object's location can change the object's weight.
- 34. Which type of graph best shows a comparison of several items or events?
 - a. pie chart c. bar graph
 - b. line graph d. All of the above
 - 35. Accuracy is judged by
 - a. the reputation of the scientist.
 - b. the precision of the tool used for measurement.
 - c. how close a value is to the true value.
 - d. None of the above
- 36. When air resistance balances the weight of a falling object, the velocity
 - a. remains constant. c. rapidly increases.
 - d. None of the above b. slowly decreases.
- 37. The gravitational force between two objects depends on masses of objects and
 - a. speeds of objects. c. distance between objects.
 - b. accelerations of objects. d. sizes of objects.
 - 38. Astronauts "float" when inside an orbiting spaceship because they are
 - a. weightless. c. in free fall.
 - b. in a vacuum. d. outside Earth's gravity.
 - 39. What happens immediately after a sky diver opens her parachute?
 - a. The force of gravity greatly increases.
 - b. The sky diver is in free fall.
 - c. The sky diver's speed greatly increases.
 - d. Air resistance greatly increases.
- 40. Which type of graph best shows data that are parts of a whole?
 - a. bar graph c. line graph
 - b. pie chart d. All of the above

Unit 2 Exam Review

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- 1. Atoms have no electric charge because they
 - a. have neutrons in their nuclei.
 - b. have an equal number of charged and noncharged particles.
 - c. have an equal number of neutrons and protons.
 - d. have an equal number of electrons and protons.
- 2. An iron atom has an atomic mass of 56. Its atomic number is 26. How many neutrons does the iron atom have?
 - a. 30 c. 26 b. 56 d. 82
- _____3. How much effect do commonly found isotopes have on the average atomic mass of an element?
 - a. same as rarely found isotopes c. less than rarely found isotopes
 - b. more than rarely found isotopes
- d. no effect on atomic mass
- 4. An element's atomic number is equal to its number of
 - a. valence electrons c. protons and neutrons.
 - b. neutrons. d. protons.
 - 5. Two different isotopes of an element have different
 - a. numbers of electrons. c. numbers of protons.
 - b. numbers of neutrons. d. atomic numbers.
 - 6. What is the mass number of an element that has 19 protons, 19 electrons, and 20 neutrons?
 - a. 20 c. 19 b. 39 d. 58
- _ 7. Which statement about the atom's nucleus is correct?
 - a. The nucleus is made of electrons and has a positive charge.
 - b. The nucleus is made of protons and neutrons and has a positive charge.
 - c. The nucleus is made of electrons and has a negative charge.
 - d. The nucleus is made of protons and neutrons and has a negative charge.
- 8. Which statement about an element's average atomic mass is correct?
 - a. It is a weighted average, so common isotopes have a greater effect than uncommon ones.
 - b. It is based on an isotope's charge, so negatively charged isotopes have a greater effect than positive ones.
 - c. It is determined by counting the number of isotopes in a sample of the element.
 - d. It is equal to one-twelfth the mass of the most common isotope.
 - 9. All planets in the solar system revolve around
 - a. Mars. c. Jupiter.
 - b. Earth. d. the sun.
 - 10. A lunar eclipse occurs when positions of the sun, the moon, and Earth are such that one of these objects is between the other two. During a lunar eclipse, which object is between the other two?
 Earth
 - a. Earth

c. sun

	b. moon	d.	None of the above
 11.	A solar eclipse occurs when positions of the subetween the other two. During a solar eclipse, a. moon	in, m whic c.	noon, and Earth are such that one of these objects is ch object is between the other two? Earth
	b. sun	a.	None of the above
 12.	Phases of the moon are caused by shade	W.	
	a. the sun s b. the moon's	с. d.	Earth s None of the above
12			
 13.	a Earth	C	the sun
	b. Mercury.	d.	Saturn.
14	Tidos on Earth are caused primarily by		
 14.	a. the moon's gravitational force	c.	Jupiter's gravitational force
	b. Earth's landscape.	d.	the sun's gravitational force.
15	The mean's surface is second with		
 15.	a an atmosphere	C	oceans
	b. craters.	d.	ice.
1.6			
 16.	The solar system is held together by		in
	a. oceans. b. orbits	c. d	ice.
	0. 010h3.	u.	Slavity
 17.	When the moon is full, the is between the	ne	and the
	a. Earth, moon, sun b. moon sun Mercury	c. d	moon, sun, Earth
	b. moon, sun, wereury	u.	sun, Larun, moon
 18.	In what phase could the moon cause a solar ech	lipse	?
	a. Iuli b. crescent	c. d	new
	b. crescent	u.	gibbous
 19.	The mass of the sun is about times large	er tha	an the mass of Earth.
	a. 300,000	С.	30
	D. 30,000,000	a.	3,000
 20.	During a solar eclipse		
	a. Earth blocks out the sun.	с.	the sun blocks out the moon.
	b. the moon blocks out Earth.	d.	the moon blocks out the sun.
 21.	During a lunar eclipse		
	a. the moon blocks out Earth.	c.	Earth blocks out the sun.
	b. the sun blocks out the moon.	d.	the moon blocks out the sun.
 22.	Venus is known for its		
	a. enormous size.	c.	ring system.
	b. thick atmosphere.	d.	abundance of life.
23.	is the only planet in the solar system kn	own	to sustain life.
	a. Uranus	c.	Earth
	b. Mercury	d.	Pluto

 24.	Olympus Mons, a volcano on, is the largesa. Venusc.b. the moond	t mountain in the solar system. Earth Mars
 25.	The Great Red Spot, a hurricane-like storm with ta.Jupiter.b.Saturn.d	wice the diameter of Earth, is found on Titan. the sun.
 26.	The inner planets are called terrestrial because the a. have no atmosphere.c.b. are small and highly dense.d	ey have Earth-like oceans. are visible from Earth.
 27.	All four outer planets area. terrestrial planets.b. gas giants.d	very small. close to the sun.
 28.	Aristotle first proposed that was at the cent a. the sun c. b. the moon d	er of the solar system. Earth Jupiter
 29.	Ptolemy proposed that the sun, moon, and planets a. ellipses. c. b. squares. d	orbited Earth in spheres. circles.
 30.	In 1687, explained that gravitational forces a. Newton c. b. Copenicus d	hold the solar system together. Halley Galileo
 31.	Kepler correctly proposed that the planets orbited a. circular c. b. elliptical d	the sun in orbits. linear spherical
 32.	According to the hypothesis, the solar systematic at the solar systematic constraints of the sol	em formed from a cloud of dust and gas. Galilean Newtonian
 33.	Comets are probably made from leftover matter fra. the solar system.b. Earth.	rom the formation of the gas giants. the sun.
 34.	According the current theory, the moon was forma. together with Earth.b. separately from Earth.	ed from a portion of Earth. from leftover matter.
 35.	The age of our solar system is approximatelya. 6,000 years old.c.b. 4.6 million years old.d	4.6 billion years old.15 billion years old.
 36.	By measuring small gravitational wobbles in starsa. many new asteroids.b. the third moon of Mars.	 astronomers have discovered more than 100 comets. more than 200 exoplanets.
 37.	According to the nebular hypothesis, the solar sys a. quickly, from a large explosion.	tem formed slowly, from a large explosion.

	b. quickly, from a cloud of gas.	d.	slowly, from a cloud of gas.
 38.	Many small bodies composed of ice and rock li	ie	
	a. between Earth and Mars.	c.	beyond the gas giants.
	b. between the sun and Earth.	d.	beyond the Kuiper Belt.
39.	Terrestrial planets have similar		
	a. atmospheres.	c.	compositions.
	b. lifeforms.	d.	Neptune
 40.	Planets may have been formed out of material	orbit	ting the early sun through the process of
	a. solidification.	c.	accretion.
	b. sedimentation.	d.	radiation.
 41.	The nebular hypothesis explains why the plane	ts	
	a. are bunched together.	c.	have irregular orbits.
	b. have ring structures.	d.	differ in composition.
			*

Unit 3 Exam Review

Multiple Choice

Identify the choice that best completes the statement or answers the question.

 1.	All starsa. reflect light from the sun.b. appear to wander off their star paths.c. produce their own light.d. All of the above		
 2.	Stars are held together bya. ionic forces.b. magnetic forces.	c. d.	electrical forces. gravitational forces.
 3.	The core is the hottest part of the sun with a term a. 50,000 K. b. 1,000,000 K.	peı c. d.	rature of about 15,000,000 K. 200,000,000 K.
 4.	Energy produced in a star's core moves through a. convection and fusion. b. radiation and fusion.	the c. d.	e star by convection and radiation. None of the above
 5.	The sun will eventually end up as a a. white dwarf. b. brown dwarf.	c. d.	neutron star. black hole.
 6.	The lifespan of the sun before reaching the red ga. 250 million years.b. 10 billion years.	giar c. d.	it stage is about 40 billion years. 150 billion years.
 7.	The surface temperature of the sun is related to i a. yellow. b. violet.	ts j c. d.	peak wavelength, which is near the color red. blue.
 8.	A is so massive and compressed that not a a. neutron star b. black hole	eve c. d.	en light can escape its gravity. protostar supernova
 9.	A star generates energy by a. fission. b. photosynthesis.	c. d.	fusion. None of the above
 10.	Most of the stars in the Milky Way will end their a. white dwarfs. b. black holes.	r li c. d.	ves as supernovas. red giants.
 11.	A light-year is a unit of a. time. b. distance.	c. d.	mass. density.
10		ı ·	

12. An astronomer observes four stars, each of which is a different color. Of these stars, the _____ star is the hottest.

- a. red
- b. blue

- c. yellow
- d. green

- _____13. A star is born when
 - a. gas and dust collapse inward.
 - b. nuclear fusion starts in the core.
 - c. the fusion of hydrogen slows down.
 - d. the core becomes carbon and oxygen.
- _____ 14. Alpha particles
 - a. are positively charged.
 - b. consist of two protons and four neutrons.
 - c. can penetrate any thickness of matter.
 - d. All of the above
- _____ 15. The type of nuclear radiation that can penetrate farthest through matter is called
 - a. radons.c. beta particles.b. gamma rays.d. X rays.
- 16. Which of the following occurs in the nucleus during alpha decay?
 - a. Two neutrons and two electrons are gained.
 - b. Two protons and two neutrons are gained.
 - c. Two neutrons and two electrons are lost.
 - d. Two protons and two neutrons are lost.

17. What changes in the nucleus during nuclear decay by gamma rays? a. energy content c. atomic number

- b. atomic mass d. All of the above
- 18. What are the values of *x* and *y* in the following alpha decay?

- _____ 20. Radioactive materials have unstable
 - a. electrons.c. protons.b. nuclei.d. neutrons.
- _____ 21. In alpha decay, the mass number of the atom before the decay
 - a. equals the sum of the mass numbers of the products.
 - b. does not change after the decay.
 - c. is the same as the atomic number.
 - d. cannot be determined.

_____ 22. In this example, what are the chemical symbols of the products of the decay?

	$\begin{array}{c} 226 \text{ Ra} \rightarrow \begin{array}{c} 222 \text{ Rn} + \begin{array}{c} 4 \\ 88 \end{array} \text{ He} \\ 86 \end{array} \begin{array}{c} 2 \end{array}$	
	a. Ra and Rnc.b. Ra and Hed.	Rn and He He only
23.	Alpha particles are nuclei ofa. oxygen.b. nitrogen.d.	helium. radium.
24.	 During beta decay, a nucleus a. gives up two protons and two neutrons. b. maintains the same number of protons and neutron. c. loses a proton and gains a neutron. d. gains a proton and loses a neutron. 	utrons.
25.	. In the equation $E = mc^2$, c stands fora. carbon.b. the total energy.d.	the speed of light. the size of the particle.
26.	 Small radioactive sources that are present in smok a. alpha particles. b. beta particles. d. 	e detectors release gamma rays. neutrons.
27.	 To treat certain brain tumors, doctors can use sma cells. a. X rays b. beta rays c. 	Il beams of that are focused to kill only the tumor alpha rays gamma rays
28.	In nuclear fission, losses in mass produce _ a. small, small c. b. large, large d.	amounts of energy. large, small small, large
29.	Fusion produces nuclei.a. same-sizedb. smallerd.	larger All of the above
30.	 Which of the following is an advantage of nuclear a. Nuclear waste is not radioactive. b. Nuclear plants are low in cost. c. Nuclear energy does not produce air pollution d. Waste can be stored anywhere. 	energy as a power source?
31.	 Which of the following is a disadvantage of nucle a. Nuclear energy produces less energy than the b. Nuclear energy produces air pollution. c. Nuclear waste must be safely stored. d. The fuel source is very limited. 	ar energy as a power source? burning of coal.
32.	. The nuclear power used for electricity is produced a. fusion. c. b. fission. d.	by a chemical reaction. radon gas.

 33.	Whether or not a person develops radiation sicha. amountb. temperature	cnes c. d.	s depends on the of the exposure to radiation. time of day All of the above
 34.	The attractive force between protons and neutroa. outside the nucleus.b. over a very short distance.	ons i c. d.	in a nucleus caused by the strong nuclear force acts only in unstable isotopes. intermittently.
 35.	Nuclei with too many or too few neutrons area. never found.b. unstable.	c. d.	unnatural. stable.
 36.	Fusion occurs when nuclei a. split. b. combine.	c. d.	mutate. gain energy.
 37.	A fission chain reaction can be slowed by usinga. absorb some of the neutrons.b. convert some of the neutrons to protons.c. increase the rate of the neutron multiplicatid. decrease the amount of available oxygen in	g ma on. the	air.
 38.	When a fusion reactor for safely generating end demands for millions of years isa. oxygen.b. nitrogen.	c. d.	is developed, the element that could meet Earth's energy hydrogen. lithium.
 39.	Radioactive tracers are short-lived a. drugs. b. isotopes.	c. d.	tumors. rays.
 40.	The use of nuclear reactors to generate electricita.a. decreasing rapidly.b. found only in the United States.	ty is c. d.	s found in dozens of countries. totally safe.

Unit 4 Multiple Choice Review

Multiple Choice

Identify the choice that best completes the statement or answers the question.

 1.	Astronomers estimate that the universe contains	S	
	a. 100 billion galaxies.	c.	100 million galaxies.
	b. 100 trillion galaxies.	d.	100 galaxies.
 2.	Clusters of galaxies can form larger groups call	led	
	a. supergiants.	c.	supernovas.
	b. superclusters.	d.	constellations.
 3.	The big bang theory states that the universe beg	gan	with a gigantic explosion
	a. 50 billion years ago.	c.	100 billion years ago.
	b. 13 to 15 billion years ago.	d.	4.4 billion years ago.
 4.	Quasars are thought to be the centers of		
	a. distant constellations.	c.	distant galaxies.
	b. distant nebulas.	d.	distant clusters.
 5.	The varying theories of the universe's eventual	fate	all depend on the universe's current
	a. mass.	c.	energy.
	b. volume.	d.	rate of expansion.
 6.	A galaxy is a collection of bound togethe	er b	y gravity.
	a. universes	c.	stars
	b. superclusters	d.	None of the above
 7.	Quasars were named for their		
	a. resemblance to galaxies.	c.	resemblance to stars.
	b. absorption of radiation.	d.	generation of radiation.
 8.	Interstellar matter is composed of found	bet	ween stars in a galaxy.
	a. planets and moons	c.	light and radio waves
	b. dust and gas	d.	None of the above
 9.	Astronomers group galaxies into three types, ac	ccor	ding to their
	a. ages.	c.	sizes.
	b. shapes.	d.	colors.
 10.	Quasars are among the strongest sources of		in the universe.
	a. radio waves	c.	planets
	b. clusters	d.	sound waves
 11.	Our solar system is located in which of these ga	alax	ies?
	a. Messier 87	c.	Andromeda
	b. Milky Way	d.	Fornax A
 12.	The Milky Way galaxy contains interstellar ma	tter	that may
	a. form new stars.	c.	form new galaxies.
	b. form new universes.	d.	form new constellations.
 11. 12. 	Our solar system is located in which of these ga a. Messier 87 b. Milky Way The Milky Way galaxy contains interstellar ma a. form new stars. b. form new universes.	alax c. d. tter c. d.	ies? Andromeda Fornax A that may form new galaxies. form new constellations.

 13.	Elliptical galaxies often appear reddish due to aa. black holes.b. white dwarfs.	n al c. d.	oundance of young stars. old stars.
 14.	Our galaxy is classified as a(n)a. irregular galaxy.b. spherical galaxy.	c. d.	elliptical galaxy. spiral galaxy.
 15.	Who first proposed that the universe is expandia. Keplerb. Darwin	ng? c. d.	Hubble Copernicus
 16.	The universe is made up of mostlya. stars.b. empty space.	c. d.	interstellar matter. dark matter.
 17.	Spiral galaxies often appear bluish due to an aba. white dwarfs.b. old stars.	und c. d.	ance of young stars. black holes.
 18.	If a star like our sun is moving away from us, th a. redish b. greenish	he li c. d.	ght that is coming from us will look more bluish yellowish
 19.	Which of the following is the best example of v directions?a. a hurricane making landfallb. a car crashing into a wall	vhat c. d.	a tsunami crashing over an island a firework exploding in the air
 20.	Which of the following is <i>the least</i> like the waya. measuring the speed and direction of ripples on a pond to find out where they came from and when they startedb. measuring how tall someone is to tell how old they are	d.	can estimate how old the universe is. placing raisins on a loaf of bread to measure how much it expands when it rises. measuring how much a tree grows each year to figure out how when it started growing
 21.	Water surface waves area. longitudinal and perpendicular waves.b. longitudinal and transverse waves.	c. d.	transverse and horizontal waves. vertical and horizontal waves.
 22.	Sound waves from a radio generally travel in w a. air b. light	hicl c. d.	h medium? earth water
 23.	If a transverse wave is moving from right to lef a. left to right. b. right to left.	t, th c. d.	e individual particles in the medium are moving up and down. None of the above
 24.	Waves are often caused bya. mechanical energy.b. colliding objects.	c. d.	vibrating objects. potential energy.

 25.	The of a longitudinal wave radiates outv about their original positions.	vard	from its source, while the particles vibrate back and forth
	a. kinetic energyb. wave front	c. d.	medium crest
 26.	Water waves a. transport water but not energy. b. transport energy but not water.	с. d.	transport energy and water. are not mechanical wayes.
 27.	The medium seismic waves travel through is a. energy. b. air.	c. d.	a vacuum. rocks.
 28.	Sound waves are a. circular waves. b. transverse waves.	c. d.	longitudinal waves. polarized waves.
 29.	A wave has a period of 0.25 seconds. The frequence a. 0.25 hertz.b. 25 seconds.	uenc c. d.	y of this wave is 2 hertz. 4 hertz.
 30.	Sound waves a. are not mechanical waves. b. can travel in a vacuum.	c. d.	are unrelated to vibrations. require a medium.
 31.	Light waves a. cannot travel through liquids. b. cannot travel through solids.	c. d.	require a medium. are electromagnetic waves.
 32.	Light waves are a. rotating waves. b. transverse waves.	c. d.	longitudinal waves. circular waves.
 33.	Which type of electromagnetic waves has the ha. ultraviolet lightb. microwaves	ighe c. d.	est energy? infrared gamma rays
 . 34.	Radar works by sending a signal out from an at a. increased in intensity as it passes through tb. analyzed by a Doppler scanner on the groutc. scanned and analyzed by a receiver on boatd. reflected off a plane back to the control town	he a he a nd. rd an ver.	affic control tower that is tmosphere. n airplane.
 35.	Light demonstrates particle characteristics whea. forms standing waves.b. passes through a narrow opening.	n it c. d.	knocks electrons off a metal surface. All of the above
 36.	As the frequency of light waves increases,a. the energy increases.b. the energy decreases.	c. d.	the energy stays the same. the wavelength increases.
 37.	The rate at which energy flows through a giver a. resonance.	ı spa c.	ince describes light intensity.

b. interference.

- d. pitch.
- _____ 38. The particle model of light explains how light can
 - a. travel through empty space without a medium.
 - b. refract when it passes through a lens.
 - c. diffract when it passes through a normal opening.
 - d. be reflected off a mirror.
- _____ 39. The amount of energy in a photon of light is proportional to the
 - a. shape of the light wave it creates.
 - b. frequency of the corresponding light wave.
 - c. speed of the corresponding light wave.
 - d. medium through which it travels.
 - 40. Which property of light is not explained by the wave model of light?
 - a. Light is diffracted when it passes through a narrow opening.
 - b. Light produces interference patterns.
 - c. Blue light can knock electrons off a plate but red light cannot.
 - d. Light reflects when it meets a mirror, but it refracts when it passes through a lens.

Unit 5 Exam Review A

Multiple Choice *Identify the choice that best completes the statement or answers the question.*

1.	Earth's lithosphere is composed ofa. the mantle only.b. the mantle and the upper portion of the outer core.c. the crust and the upper portion of the mantle.d. the crust only.
2.	One hypothesis states that plate movement results from convection currents in thea. asthenosphere.c. lithosphere.b. outer core.d. mantle.
3.	A convergent boundary occurs where two platesa. move over each other.b. move away from each other.c. move past each other.d. move toward each other.
4.	A transform fault boundary occurs where two platesa. move away from each other.b. move past each other.c. move toward each other.d. move over each other.
5.	 A seismograph measures a. the location of the epicenter. b. the force of the earthquake. c. the speed of S waves. d. how much the surface of Earth moves during an earthquake.
6.	The magnitude of earthquakes is expressed usinga. the Mohs' scale.c. the Richter scale.b. the amplitude of the P waves.d. the Mercalli scale.
7.	The magma of shield volcanoes is rich ina. silica.c. nitrogen and oxygen.b. magnesium and iron.d. hydrogen.
8.	What is the layer directly beneath Earth's crust called?a. outer corec. mantleb. oceanic crustd. inner core
9.	Because of intense pressure, the inner core of Earth isa. liquid.c. gaseous.b. solid.d. plastic.
10.	 Which of the following gives evidence for plate tectonics? a. movement of crust away from a plate boundary b. the age of Earth's crust c. magnetic alignment of oceanic rock d. cooling molten rock
11.	Mid-oceanic ridges are formed by a. bends and folds along the subduction zone.

	b. the diving of oceanic plates.c. cooled magma that hardens between diverging plates.d. collisions of Earth's continental crust.				
 12.	Where do most earthquakes occur?a. at vents in Earth's crustb. near hot spotsc. along shifting plate boundariesd. along convergent boundaries				
13	The location on Earth's surface where most earth	har	ake damage occurs is called the		
 10.	a. vent.	c.	focus.		
	b. epicenter.	d.	surface wave point.		
	1		1 I		
 14.	Shield volcanoes are known for their				
	a. ash production.	C.	viscous magma.		
	b. small size.	a.	mild eruptions.		
15.	What determines the severity of volcanic eruptic	ons'	?		
	a. composition of magma	c.	frequency of eruptions		
	b. size of the volcano	d.	number of vents		
16	The continental exact is deepest how outh				
 10.	The continental crust is deepest beneath				
	a. oceans.	с. d	nvers.		
	D. Valleys.	u.	niountains.		
 17.	A geologic feature of divergent plate boundaries	s in	oceanic crust is the formation of		
	a. fossils.	c.	mountain ranges.		
	b. faults.	d.	U-shaped valleys.		
 18.	The minimum number of seismograph stations nepicenter is	nece	essary to determine the location of an earthquake's		
	a. four.	c.	two.		
	b. one.	d.	three.		
10	A divergent boundary occurs where two plates				
 17.	a move toward each other	c	move past each other		
	h move over each other	c. d	move past cach other		
		u.	nove usury nom each other.		
 20.	Which of the following statements is not true ab	out	the Richter scale?		
	a. The Richter scale allows us to make predicti	ions	s of earthquake severity.		
	b. Each step of the scale represents a 30-fold in	ncre	ease in energy released.		
	a Earthquakes with equal ratings do not have t	tha	como covority		

c. Earthquakes with equal ratings do not have the same severity.d. The Richter scale measures the magnitude of an earthquake.



- 21. The rock labeled "B" is
 - magma. a.
 - b. igneous.
- 22. The rock labeled "A" is
 - a. sedimentary.
 - b. magma.

- c.
- sedimentary. metamorphic. d.
- igneous. c.
- d. metamorphic.



	b. gravity	d.	magnetism
 32.	Abrasion caused by particles in water is a typea. acid precipitation.b. physical weathering.	of c. d.	chemical weathering. sediment deposition.
 33.	Which process forms ocean cliffs?a. water erosionb. deforestation	c. d.	glacial abrasion deposition
 34.	Which of the following is not a rock?a. graniteb. shale	c. d.	quartz marble
 35.	Fossils are only found in which type of rock?a. oxidizedb. metamorphic	c. d.	sedimentary igneous
 36.	Scientists use isotopes that decay over millionsa. physical composition.b. absolute age.	of y c. d.	vears to determine a rock's chemical composition. relative age.
 37.	The principle of superposition is used to determa. the absolute age of rocks.b. the relative age of rocks.	nine c. d.	how rocks are formed. how rocks are changed.
 38.	Which of these is an example of physical weatha. cave formationb. oxidation of minerals	nerin c. d.	ng? frost wedging acid rain
 39.	Underground limestone caves forma. when oxidation decomposes the minerals inb. from the compacting and cementing of weac. when the calcite is dissolved by carbonic acd. from cooling and solidification of magma b	n the ther cid i peloy	e rock. red rock fragments. n rainwater. w the surface.
 40.	The process in which sediment is laid down is of a. erosion.	calle	d deposition.

b. weathering. d. cementation.

Unit 6 Exam Review A

Multiple Choice

Identify the choice that best completes the statement or answers the question.

1. The coldest layer of Earth's atmosphere is the a. mesosphere. c. troposphere. b. stratosphere. d. thermosphere. 2. Almost all weather occurs in the a. stratosphere. c. mesosphere. b. thermosphere. d. troposphere. 3. Of all the atmospheric layers, the troposphere has the a. lowest density. c. highest density. b. highest temperatures. d. lowest temperatures. 4. In the oxygen-carbon dioxide cycle, a. animals produce oxygen used by plants for respiration. b. animals produce carbon dioxide used by plants for respiration. c. animals produce carbon dioxide used by plants for photosynthesis. d. animals produce oxygen used by plants for photosynthesis. 5. As distance from Earth's surface increases, the temperature of the stratosphere a. increases. c. remains the same. b. decreases. d. None of the above 6. The region where electrically charged ions are formed as a result of the absorption of solar energy is called the a. exosphere. c. ionosphere. b. troposphere. d. lithosphere. 7. Oxygen was introduced into the atmosphere as a byproduct of a. dehydration. c. respiration. b. osmosis. d. photosynthesis. 8. In the oxygen–carbon dioxide cycle, plants produce oxygen used by animals for respiration. a. b. plants produce carbon dioxide used by animals for photosynthesis. c. plants produce carbon dioxide used by animals for respiration. d. plants produce oxygen used by animals for photosynthesis. 9. Greenhouse gases are added to the atmosphere through a. absorption. c. photosynthesis. b. radiation. d. forest fires. 10. The ozone layer is located in the a. mesosphere. c. stratosphere. b. thermosphere. d. troposphere. 11. Which of the following gases was not believed to be present on Earth at the time of its formation 4.4 billion years ago? a. water c. nitrogen

	b. oxygen	d.	methane
12.	The products of photosynthesis are		
 	a. carbon and oxygen.	c.	carbon dioxide and water.
	b. sugar and oxygen.	d.	water and oxygen.
	6 90		
 13.	The products of cellular respiration are		
	a. carbon and oxygen.	с.	carbon dioxide and water.
	b. sugar and oxygen.	d.	water and oxygen.
14.	The reactants of photosynthesis are		
	a. carbon and oxygen.	c.	carbon dioxide and water.
	b. sugar and oxygen.	d.	water and oxygen.
15	The reactants of glycologic/collular respiration	0.00	
 13.	a carbon and oxygen	are	carbon dioxide and water
	a. Carbon and oxygen.	c. d	water and ovygen
	o. sugar and oxygen.	u.	water and oxygen.
 16.	Cellular respiration energy, while	e ph	otosynthesis energy.
	a. releases, releases	c.	stores, releases
	b. stores, stores	d.	releases, stores
17	Cellular respiration occurs in the		
 17.	a chloroplasts		 _ cytonlasm
	h mitochondria	d.	nucleus
		u.	nucleus
 18.	Photosynthesis occurs in the	_•	
	a. chloroplasts	c.	cytoplasm
	b. mitochondria	d.	nucleus
19.	The molecule cells most directly use for energy	v is	
	a. chlorophyll.	с.	ADP.
	b. ATP.	d.	glucose.
•			-
 20.	Of the following words, which one is the worst	t coi	nparison of photosynthesis and cellular respiration?
	a. mirror	С.	parallel
	b. opposite	a.	Dackwarus
 21.	Plants contribute large volumes of atmospheric	wat	er vapor to the air through the process of
	a. transpiration.	c.	evaporation.
	b. condensation.	d.	respiration.
22	A cloud type that yourly preduces presidents	. :.	
 <i>LL</i> .	A cloud type that usually produces precipitation		a(II)
	a. chrostratus.	c. d	nimbostratus
	0. anostratus.	u.	liinoosuatus.
 23.	Due to the Coriolis effect, winds in the Norther	n H	emisphere
	a. curve to the north.	c.	curve to the south.
	b. curve clockwise.	d.	curve counterclockwise.
24	In the water cycle occurs after condense	tion	
 ∠+.	a evaporation	C	transpiration
	b precipitation	d.	saturation
	o. proopration	ч.	Suturution

 25.	compares the actual amount of water var	por i	in the air with the maximum amount possible at that
	temperature.	C	Relative humidity
	b. Dew point	d.	None of the above
 26.	Which of the following statements is true about	t dev	w point?
	a. Dew point occurs when water vapor molec	ules mpl	Iorm inquid water.
	c. Humidity does not affect dew point.	mpr	eery evaporates.
	d. Dew point is the same as precipitation.		
27	Rising indicates that an air mass is movi	no i	nto an area
 27.	a. barometric pressure	с.	clouds
	b. dew point	d.	humidity
28.	Clouds that are layered and sheet-like are		
 	a. cirrus.	c.	cumulus.
	b. stratus.	d.	cirrostratus.
29	Differences in cause wind		
 27.	a. dew points	c.	atmospheric humidity
	b. Earth's rotation	d.	air pressure
30	Due to the Coriolis effect winds traveling from	n Fla	orida to Maine curve
 50.	a. east.	с.	west.
	b. north.	d.	south.
31	A frontal boundary is established between air n	nass	es of different
 51.	a. temperatures.	c.	directions.
	b. humidities.	d.	speeds.
32	What causes the sound you hear when it thund	ers?	
 02.	a. rotating winds	с.	supersonic expanding air
	b. discharge of electrical energy	d.	frontal boundaries
33.	Which type of weather produces the highest wi	nds'	?
 	a. thunderstorm	с.	hurricane
	b. tropical depression	d.	tornado
34.	Hurricanes begin as		
 	a. funnel clouds.	c.	fierce winds.
	b. tropical depressions.	d.	stable air masses.
35.	Regions near the equator have warmer climates	s bec	cause
 	a. day and night are equal in length on the equ	uino	Х.
	b. Earth orbits the sun in an elliptical pattern.		
	c. the sun is strong on summer solstice at the	equa	ator.
	d. the sun's rays are almost perpendicular to t	he e	quator all year.
 36.	As temperature increases, the possible total hun	nidi	ty
	a. increases.	c.	increases and then decreases.
	b. decreases.	d.	remains the same.
 37.	The clouds that occur at the highest altitude are	e ust	ally

- a. cirrus. c. cumulus.
- b. stratus. d. nimbus.
- 38. The direction in which the wind moves is influenced by
 - c. the time of day. a. the pressure gradient.
 - b. the moon's orbit. d. None of the above
- 39. High winds and strong thunderstorms are characteristic of an approaching strong a. warm front.
 - c. stationary front.
 - b. cold front. d. occluded front.
- 40. Which cloud type is typically associated with thunderstorms?
 - a. cirrostratus

- c. cumulonimbus

b. altocumulus

d. cirrocumulus

Unit 7 Exam Review

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- 1. Which of the following statements about the ice ages is true?
 - a. During the ice ages, icy glaciers covered much of the continents.
 - b. An ice age will never come again.
 - c. There were no living organisms during the ice ages.
 - d. The causes of ice ages are well known.
- 2. Which of the following is not a benefit of building a dam?
 - a. flood control c. generating hydroelectric power
 - b. irrigation d. increased need for fertilizers
- 3. Which of the following is an example of an ecosystem?
 - a. Earth c. a river
 - b. a lake d. All of the above
 - 4. A(n) _____ is made of a group of living things that interact.
 - a. species c. ecosystem d. community
 - b. population
 - 5. What would be the immediate effect on a population of insect-feeding birds if pesticide is sprayed in their ecosystem?
 - a. The birds would adapt to their environment.
 - b. The birds would balance out the ecosystem.
 - The bird population would increase. c.
 - d. The bird population would decrease.
- 6. Which of the following statements is *not* true about ecosystems?
 - a. If disturbed, ecosystems tend to eventually balance out.
 - b. Wildfires cause permanent loss of an ecosystem.
 - c. Seasonal patterns can change an ecosystem.
 - d. All the elements of an ecosystem are interrelated.
- 7. Which is an example of human activity impacting an ecosystem?
 - a. introduction of a nonnative species
 - b. newly planted trees in a wooded area
 - c. construction of a dam
 - d. All of the above
 - 8. Groups of plants and animals that are adapted to similar conditions form a(n)
 - a. ecosystem. c. community.
 - b. organism. d. population.
 - 9. In a balanced ecosystem with predators and prey, if the number of prey decreases,
 - a. new predators will move into the area.
 - b. there will be no change in the ecosystem.
 - c. the number of predators will decrease.
 - d. the ecosystem will be ruined.

10.	An example of a short-term ecological	change	is
- · · ·			

- a. global temperature change. c. a large forest fire.
- b. a change in seasons. d. a volcanic eruption.
- 11. Which of the following statements about ecosystems is not true?
 - Sunlight, air, and water can be parts of an ecosystem. a.
 - b. An ecosystem can be as small as a rain puddle.
 - c. Temperature and climate are not part of an ecosystem.
 - d. Ecosystems include living and nonliving things.
- 12. An ecosystem is balanced when
 - a. there is plenty of rain.
 - b. there are an equal number of plants and animals.
 - c. there are enough resources for every living thing.
 - d. energy does not enter or leave the ecosystem.
- 13. A forest destroyed by a fire will gradually become a complex ecosystem with a wide variety of plants and animals in a process called
 - a. regeneration. c. development. b. succession. evolution. d.
 - 14. A renewable resources ______ be replaced ______ than it is used.
 - c. cannot, slower a. can, faster
 - b. can, slower d. cannot, faster

than it is used. 15. A non-renewable resources ______ be replaced _____ a. can, slower c. cannot, slower

b. can, faster d. cannot, faster

16. Which of the follow will **not** happen as a result of increased human population?

- c. Increased production of waste a. Increased need for resources
- b. Increased impact on the environment d. Increased space for people to live
- 17. What factors does your ecological impact depend upon most?
 - a. How much waste you produce and how far you live from a grocery store
 - b. How efficiently you use resources and how far you live from a grocery store
 - c. How efficiently you use resources and how much waste you produce
 - d. How long you sleep at night and how far you live from a grocery store

18. What factors led to the drastic population increase that began around the turn of the 20th century.

- advances in medicine and more babies being born a.
- b. people living longer and more babies being born
- c. new agricultural technology and people living longer
- d. new agricultural technology and advances in medicine
- 19. Solar cells are used to
 - a. convert sunlight into electricity.
 - b. photograph sunspots.
 - c. convert sunlight and carbon dioxide into sugars.
 - d. convert electricity into solar energy.
 - 20. Fossil fuels include
 - dinosaur bones. a.

c. coal, natural gas, and oil.

	b. hydrogen, oxygen, and acetylene.	d.	wood and charcoal.
21.	The percent of the world's energy sources that a. 44%. b. 86%.	are c. d.	fossil fuels is 14%. 39%.
22.	Which of the following is not considered an ala. natural gasb. wind and water energy	terna c. d.	tive source of energy? solar energy geothermal energy
23.	In the past 100 years the average temperature i a. 7°C. b. an amount too small to measure.	n the c. d.	e United States has increased by .7°C. 7°F.
24.	Algae in a pond sometimes kill fish and other aa. infect other organisms and cause diseases.b. secrete a poisonous substance.c. crowd out other forms of life.d. decrease the dissolved oxygen in the water	aqua r.	tic wildlife because they
25.	DDT was banned from use as a pesticide in the a. it was ingested by fish and other aquatic an b. it caused the eggs of fish-eating birds to be c. it was washed by rain into streams, rivers, d. All of the above	e Un nima ecom lake	ited States because ls. he thin and fragile. s, and ponds.
26.	The burning of fossil fuels producesa. land pollution.b. air pollution only.	c. d.	acid rain and air pollution. acid rain only.
27.	Almost all energy on Earth comes froma. Earth's crust.b. moving water.	c. d.	fossil fuels. the sun.
28.	Plants utilize carbon dioxide that is produced ba. fossil fuel burning.b. cellular respiration.	oy c. d.	decomposition. All of the above
29.	The supply of fossil fuels is considered to bea. renewable.b. abundant.	c. d.	nonrenewable. None of the above
30.	are constructed to harness hydroelectric a. Dams b. Windmills	pow c. d.	ver. Solar cells Wells
31.	Geothermal energy is not used world-wide beca. very costly.b. inefficient.	cause c. d.	e it is nonrenewable. geographically limited.
32.	How is water used in a coal-fired power plant?a. Steam from hot water spins the turbines.b. Hot water turns the generator.	?	

c. As water heats up, energy is released into the coals.

	d. Water is heated and reacts with the burning coal.	d. Water is heated and reacts with the burning coal.		
 33.	What is the major cause of pollution?a. global warmingb. ozone layer depletionc. hd. r	numan activity natural greenhouse gases		
 34.	is a pollutant that is released during combustic a. Carbon dioxide c. C b. Hydrogen d. N	on. Oxygen Methane		
 35.	 How does carbon dioxide keep Earth warm? a. by combining with water vapor b. by trapping radiation in the atmosphere d. b 	by reacting with fossil fuel by reacting with nitrogen		
 36.	Photochemical smog is produced when reactsa. carbon dioxidec. sb. precipitationd. w	with nitrogen oxide compounds. sunlight water vapor		
 37.	is an example of using an alternative energy soa. Recyclingc. Cb. Turning off lightsd. C	ource. Owning a solar powered home Carpooling		
 38.	 Carbon dioxide is called a greenhouse gas because a. it helps keep our planet warmer than outer space. b. plants need carbon dioxide to grow. c. it is produced when wood or fossil fuels are burn d. it is used inside of greenhouses. 	ed.		

- 39. Nonpolluting sources of energy includea. alcohol and acetylene.b. wind and solar power.

- c. nuclear energy.d. coal, oil, and natural gas.

Unit 8 Exam Review

Multiple Choice

Identify the choice that best completes the statement or answers the question.

 1.	According to the new model of the atom, electrona.planets rotating on their axes.b.waves on a vibrating string.	ns 2. 1.	behave like planets orbiting the sun. light energy in a vacuum.
 2.	According to modern atomic theory, it is nearly it a. color. c b. mass. d	mj 2. 1.	possible to determine an electron's exact position. charge
 3.	Valence electrons determine an atom'sa. electric charge.cb. chemical properties.d	2. 1.	period. mass.
 4.	Which of the following is <i>not</i> a type of orbital? a. d c b. s d	2. 1.	p x
 5.	An electron jumps to a new energy level whena. the atom becomes charged.b. the electron's location is pinpointed.c. the atom gains or loses energy.d. the atom becomes unstable.		
 6.	The number of energy levels filled in an atom is of a. neutrons. c b. photons. d	de 2. 1.	termined by electrons. protons.
 7.	Which statement about the modern model of the aa. Electrons can be found between energy levelsb. Electrons are most likely to be found in orbitsc. The precise location of electrons cannot be pd. Electrons can be found only in certain energy	ato s. als reo y lo	om is <i>not</i> true? s. dicted. evels.
 8.	According to Bohr's theory, an electron's path ar a. speed. c b. electric charge. d	:01 2. 1.	and the nucleus defines its atomic mass. energy level
 9.	Which of the following statements about the moda. Electrons can only be found in certain energyb. It is possible to find electrons in an atom.c. Electrons can be found between energy levelsd. Electrons orbit the nucleus along definite path	ler y lo s. hs	n model of the atom is true? evels.
 10.	The order of elements in the periodic table is basea. the number of neutrons in the nucleus.b. atomic mass.c. the electric charge of the nucleus.d. the number of protons in the nucleus.	ed	on

 11. In Mendeleev's periodic table, elements	in each column had similar
a. properties.	c. atomic numbers
b. symbols.	d. atomic masses.
 12. Magnesium (Mg) is located to the right of	Sodium (Na) because Mg has
a. more protons.	c. no protons.
b. no neutrons.	d. fewer protons.
 13. As you move from left to right across the	periodic table, elements
a. become more metallic.	c. have a lower atomic weight.
b. become less metallic.	d. have a lower atomic number.
 14. How was Mendeleev's periodic table arra	nged?
a. by decreasing atomic mass	c. by decreasing atomic number
b. by increasing atomic number	d. by increasing atomic mass
 15. When did Mendeleev create a new row in a. when there were 10 elements in the ro	his periodic table?
b. when chemical properties were repeat	ed
c. when the next element was a nonmeta	ıl
d. when the first atomic mass was doubl	ed
 16. Mendeleev left gaps in his periodic table	pecause
a. the table was too small.	c. the table was too full.
b. no known elements fit there.	d. protons belonged there.
 17. Each column of the periodic table is	
a. an isotope.	c. an element.
b. a group.	d. a period.
 18. The periodic law states that elements that	have similar properties appear
a. at regular intervals.	c. to the right of each other.
b. to the left of each other.	d. at every tenth element.
 19. As you move from up to down in a colum	n of the periodic table, elements have
a. fewer protons.	c. a higher atomic number.
b. a higher group number.	d. a lower atomic number.
 20. In his version of the periodic table, Mende	eleev based his arrangement of the elements on an element's
a. chemical symbol.	c. name.
b. atomic number.	d. atomic mass.
 21. Atoms of elements that are in the same gr	oup have the same number of
a. neutrons.	c. valence electrons.
b. protons.	d. protons and neutrons.
 22. Which of the following elements is an alk	ali metal?
a. mercury	c. magnesium
b. sodium	d. calcium
 23. Semiconductors are elements that	
a. have large atomic masses but small at	omic numbers.
b. do not form compounds.	
c. can conduct heat and electricity under	certain conditions.

d.	are extremely hard.
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 24.	Carbon and other nonmetals are found in whicha. in the middle column of the periodic tableb. on the right sidec. on the left-most sided. in the bottom rows	n are	ea of the periodic table?
 25.	What is the location of elements in the periodic	tab	le related to?
	a. atomic weightb. electron arrangement	c. d.	color number of neutrons
 26.	Elements that belong to the same group have the	ne sa	ame number of
	a. inner electrons.	c.	valence electrons.
	b. total electrons.	d.	neutral electrons.
 27.	Because they differ in numbers of protons in the energy levels, elements in a group	eir 1	nuclei and in numbers of electrons in their filled inner
	a. are inert.	c.	have different charges.
	b. are not exactly the same.	d.	are very interactive.
28.	Atoms that gain or lose electrons are called		
 	a. metals.	c.	isotopes.
	b. ions.	d.	nonmetals.
29	Elements that have one valence electron tend to		
 2).	a be highly reactive	с С	form ions
	b. become charged.	d.	All of the above
20	Most elements are		
 50.	a nonmetals	C	metals
	b metalloids	d.	semiconductors
		u.	
 31.	Elements in an element family have similar		1 1 1 2
	a. atomic weights.	С. Л	chemical properties.
	b. atomic symbols.	u.	atomic sizes.
 32.	How do you know that potassium, an alkali me	tal,	is highly reactive?
	a. It conducts heat.	c.	It has one valence electron.
	b. It is a soft and shiny metal.	d.	It conducts electricity.
 33.	Which of the following is <i>not</i> true of noble gas	es?	
	a. They belong to Group 18.	c.	They are highly reactive.
	b. They exist as single atoms.	d.	They are nonmetals.
34.	Ionization refers to the process of		
	a. losing or gaining electrons.	c.	turning lithium into fluorine.
	b. changing from one period to another.	d.	losing or gaining protons.
35	Elements that share properties of both metals a	nd r	onmetals are called
 	a. ions.	с.	semiconductors.
	b. valences.	d.	periods.
 36.	Group 18 noble gases are relatively inert becau	se	

- a. their *s* and *p* orbitals are filled.
- b. their outermost energy level is missing one electron.
- c. they can have either a positive or a negative charge.
- d. they readily form positive ions.
- _____ 37. Which element is a semiconductor?
 - a. carbon c. uranium
 - b. silicon d. sodium
- 38. A lithium ion is much less reactive than a lithium atom because it
 - has a filled outer *s* orbital c. has no charge.
 - b. has a negative electric charge. d.
- d. is much more massive.
- _____ 39. Most halogens form compounds by

a.

- a. losing an electron to form a positive ion.
- b. gaining an electron to form a negative ion
- c. joining with both calcium and carbon.
- d. losing protons.
- 40. Transition metals such as copper or tungsten form compounds by
 - a. losing neutrons.
 - b. changing shape and color.
 - c. gaining electrons to form negative ions
 - d. losing electrons to form positive ions.