# Chemistry G11- Q4 Revision Sheet

### **Multiple Choice**

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

1.	The linking of amino acids by peptide bond form	nati	ion is .
	a. biochemistry c	:.	organic chemistry
	b. composition d	ł.	protein synthesis
2.	Which of the following elements is not essential	in	the makeup of body cells?
	a. carbon c		nitrogen
	b. magnesium d	l.	oxygen
3.	Antibodies that fight disease organisms are		
	a. carbohydrates c		lipids
	b. enzymes d	1.	proteins
4.	One protein that transports substances through yo	oui	r body is
	a. collagen c	:.	hemoglobin
	b. an enzyme d	1.	keratin
 5.	Which of the following elements is not found in	pro	oteins?
	a. hydrogen c		sodium
	b. nitrogen d	l.	sulfur
 6.	The basic building blocks of proteins are		
	a. amino acids c	:.	glycerols
	b. fatty acids d	1.	sugars
 7.	When peptide bonds form, peptides and and	re	formed.
	a. amino acids c	:.	oxygen
	b. carbon dioxide d	l.	water
 8.	A carbohydrate that contains 24 hydrogen atoms	co	ntains oxygen atoms.
	a. 6 c	:.	24
	b. 12 d	1.	48
 9.	In animals, excess glucose is stored in the liver a	nd	muscles as
	a. cellulose c	:.	glycogen
	b. chitin d	1.	starch
 10.	Which of the following might be the number of c	оху	gen atoms in a lipid that contains 30 hydrogen atoms?
	a. 6 c	:.	30
	b. 15 d	1.	60
 11.	The wax applied to the paint of a car is an examp	ole	of a
	a. carbohydrate c	:.	protein
	b. lipid d	1.	steroid
 12.	Which of the following is not true about choleste	ero	1?
	a. Excess cholesterol can form the plaque that	cai	n clog human arteries.
	b. Controlling dietary cholesterol has no effect	or	n blood cholesterol levels.
	c. Exercise and stress affect cholesterol levels.		
	d. Your body does not need any cholesterol.		
 13.	Which of the following is not contained in a nucl	lei	c acid?
	a. carbonate group c		phosphate group
	b. nitrogen-containing base d	l.	simple sugar

### Name: \_\_\_\_\_

 14.	A molecule contains sugar-phosphate chains a molecule is	and ba	ase pairs of cytosine-guanine and uracil-adenine. The
	a an enzyme	C	RNA
	b. DNA	d.	a vitamin
15	Which of the following vitamins is most likely	v to h	e removed from a food by boiling the food?
 15.	a. vitamin A	с.	vitamin D
	b. vitamin C	d.	All will be removed.
16	The total of all chemical reactions necessary f	or the	e life of an organism is
 10.	a. digestion	с.	metabolism
	b. glycolysis	d.	respiration
17.	The oxidation of fuel that releases energy nee	ded b	v cells is
	a. digestion	с.	metabolism
	b. glycolysis	d.	respiration
18.	Energy-storage molecules that contain three p	hospl	nate groups are called .
	a. ADP	c.	DNA
	b. ATP	d.	RNA
19.	Which is the correct sequence for the three ste	eps of	Frespiration?
	a. the tricarboxylic acid cycle, glycolysis, el	lectro	n transport chain
	b. glycolysis, the tricarboxylic acid cycle, el	lectro	n transport chain
	c. electron transport chain, the tricarboxylic	acid	cycle, glycolysis
	d. the tricarboxylic acid cycle, electron trans	sport	chain, glycolysis
20.	Carbon dioxide is a product of .		
	a. alcoholic fermentation	c.	evaporation
	b. digestion	d.	lactic acid fermentation
 21.	The most common form of energy encountere	d in c	hemical reactions is
	a. electrical energy	c.	light energy
	b. nuclear energy	d.	heat
 22.	In a chemical change, energy can be		
	a. created, but not destroyed	c.	either created or destroyed
	b. destroyed, but not created	d.	neither created nor destroyed
 23.	The two terms below that are identical in mea	ning	are
	a. calorie and Calorie	c.	Calorie and joule
	b. calorie and joule	d.	kilocalorie and Calorie
 24.	The main source of energy for living things on	n Ear	th is
	a. combustion of fossil fuels	c.	solar energy
	b. oxidation of dead organisms	d.	geothermal energy
 25.	The major product formed during the process	of ph	otosynthesis is
	a. carbon dioxide	c.	sugar
	b. water	d.	DNA
 26.	In a(n) reaction, the products are at a hit	igher	energy level than are the reactants.
	a. activation	c.	endothermic
	b. catalytic	d.	exothermic
 27.	Even in an exothermic reaction, is need	led to	get the reaction started.
	a. activation energy	c.	an endothermic reaction
	b. a catalyst	d.	an inhibitor

### Name: \_\_\_\_\_

 28.	A cake is placed in a heated oven and baked.	The r	eactions that take place during this process are
	a. catalyzed	c.	exothermic
	b. endothermic	d.	inhibited
 29.	The energy involved in endothermic and exothermic	nermi	ic reactions is
	a. chemical	c.	light
	b. heat	d.	electrical
 30.	The energy released in the formation of a com	poun	d from its elements is always the energy required to
	decompose that compound into its elements.		
	a. greater than	c.	less than
	b. identical to	d.	similar to
 31.	If the heat of reaction is negative, the reaction	is	·
	a. endothermic	c.	negative
	b. exothermic	d.	positive
 32.	If the energy graphs of a reaction, catalyzed an	nd un	catalyzed, are examined, the peak representing activation
	energy is for the catalyzed reaction.		
	a. equal	c.	lower
	b. higher	d.	unchanged
 33.	Spontaneous reactions occur if energya	and d	lisorder
	a. decreases, decreases	c.	increases, decreases
	b. decreases, increases	d.	increases, increases
 34.	When bowling pins at the end of an alley are h	nit by	a bowling ball, the entropy of the pins
	a. decreases	c.	is spontaneous
	b. increases	d.	stays the same
 35.	If a reaction results in increased energy and in	creas	sed entropy, will the reaction be spontaneous?
	a. no	c.	yes, if the temperature is high
	b. yes	d.	yes, if the temperature is low
 36.	A is the heat required to raise the tempo	eratu	re of 1 g of liquid water by 1°C.
	a. calorie	c.	kilocalorie
	b. Calorie	d.	joule
37.	The energy value of foods is measured in units	s of	
	a. calories	c. <sup>–</sup>	joules
	b. Calories	d.	nutrients
38.	If 16 cans are produced from aluminum made	from	ore, how many cans can be made from recycled aluminum
	for the same cost?		
	a. 8	c.	32
	b. 16	d.	48
39.	In processes that produce electricity, some of	the en	nergy used is wasted as energy.
 	a. chemical	с.	kinetic
	b. heat	d.	light
40	The process that uses carbon dioxide and wate	r in	the presence of sunlight and chlorophyll to form simple
 10.	sugar and oxygen is	, iii	the presence of summing and emotophym, to form simple
	a capillary action	C.	photosynthesis
	b. digestion	d.	respiration
<u>4</u> 1	The ultimate source of energy in the food web	is.	
 71.	a the sun		 light reactions
	h photosynthesis	d.	the Calvin cycle
	o. photosynthesis	u.	

# Name: \_\_\_\_\_

 42.	When photosynthesis is compared to the burning of	f fossil fuels, photosynthesis is a(n) efficient
	process.	
	a. less	
	b. more	
	c. equally	
 43.	Why is the natural process of photosynthesis far m	ore efficient than electricity production by industrial
	processes?	
	a. Industrial processes that produce electricity in	crease entropy through the combustion of
	carbon dioxide and water.	
	b. Industrial processes that produce electricity co	onvert energy from one form to another yet
	maintain low-entropy systems.	
	c. Photosynthesis builds complex high-energy m	olecules in a process in which entropy
	decreases.	
	d. Photosynthesis releases waste heat and increa	ses the entropy of the environment.
 44.	How can industrial processes be as efficient as pho	otosynthesis?
	a. decrease entropy by an increase of waste heat	
	b. decrease entropy by a decrease of waste heat	
	c. increase entropy by an increase of waste heat	
	d. increase entropy by a decrease of waste heat	
45.	Materials that continue to glow in the dark after th	ey have been exposed to light are said to be .
	a. radioactive c.	phosphorescent
	b. unstable d.	incandescent
46.	The first person to recognize the existence of radio	activity was
	a. Marie Curie c.	Albert Einstein
	b. Henri Becquerel d.	Lise Meitner
47.	The correct nuclear notation for the isotope oxyge	n-15 is
 	a <sup>15</sup> 0	<sup>15</sup> O
	a. <sub>8</sub> 0 c.	$O_8$
	b. ${}^{8}_{15}$ O d.	<sub>8</sub> O <sup>15</sup>
48	The ratio of protons to neutrons in stable isotones	of the lighter elements tends to be approximately
 10.	a 1.1	2.1
	b 1:2 d.	unpredictable
40	The most difficult radiation to block out is	
 т).	a alpha particles	aamma rave
	a. alpha particles c.	yisible light rays
50	A nomial released during the figsion of unonium?	25  is a(n)
 50.	A particle released during the fission of uranium-2	
	a. alpha particle c.	
<b>F</b> 1	b. beta particle d.	
 51.	It a neutron begins a nuclear chain reaction, then c	ne product of that reaction must be
	a. a uranium-235 nucleus c.	a uranium-238 nucleus
	b. a neutron d.	a gamma ray
 52.	In a reactor, nuclear energy is produced in the	—i
	a. moderator c.	fuel rods
	b. coolant d.	turbine

 53.	Compared to an electron, a positron has	•	
	a. the same mass and charge	c.	the same charge, but a different mass
	b. different mass and charge	d.	the same mass, but a different charge
 54.	materials absorb light energy, then relea	ise it	
	a. Nuclear	c.	Radioactive
	b. Phosphorescent	d.	Transuranium
 55.	Who of the following was not important in the	disc	overy of radiation?
	a. Neils Bohr	c.	Pierre Curie
	b. Marie Curie	d.	Henri Becquerel
 56.	${}^{235}_{92}$ U and ${}^{238}_{92}$ U are examples of		
	a. allotropes	c.	particles of radiation
	b. isotopes	d.	tracers
 57.	When ${}^{238}_{92}$ U becomes ${}^{234}_{90}$ Th, what type of deca	y ha	s taken place?
	a. alpha	c.	gamma
	b. beta	d.	positron
 58.	A(n) is a high energy electron.		
	a. beta particle	c.	alpha particle
	b. helium nucleus	d.	positron
 59.	Which type of radiation is most penetrating?		
	a. alpha	c.	gamma
	b. beta	d.	They are equal.
 60.	Which is the only type of radiation that might	pene	trate the walls of a house?
	a. alpha	c.	gamma
	b. beta	d.	All will penetrate.
 61.	What is the source of the electrons produced in	n beta	a decay?
	a. an outer energy level	c.	a neutron
	b. a valence electron	d.	a proton
 62.	The radiation detector that uses detection of fla	ashes	s of light is a
	a. bubble chamber	c.	Geiger counter
	b. film badge	d.	scintillation counter
 63.	How much hydrogen-3 will remain after 60 years of hydrogen-3 is 12 years?	ars if	the original sample had a mass of 80.0 g and the half-life
	a. 1.25 g	c.	5.00 g
	b. 2.50 g	d.	10.0 g
64.	Which of the following isotopes is not commo	nlv u	used for dating objects?
 	a. carbon-14	c.	potassium-40
	b. phosphorus-32	d.	rubidium-87
65	Which of the following could be dated using c	arboi	n-14?
 02.	a. ashes from a fire	c.	glacial deposits
	b. a rock	d.	lava fields
 66.	To control a chain reaction, a moderator, such	as	is used to slow down neutrons.
	a. graphite	c.	water
	b. uranium	d.	the core

#### Name:

 67.	Two or more nuclei combine to form one larger nucleus in the process of nuclear					
	a. decay	c.	fusion			
	b. fission	d.	tracing			
 68.	The greatest source of radiation most humans a	re e	xposed to is			
	a. cosmic rays	c.	radon			
	b. medical X rays	d.	rocks and soil			
 69.	Most radioactive waste is generated in					
	a. hospitals	c.	tokamaks			
	b. nuclear reactors	d.	uranium mines			
 70.	The radioisotope iodine-131 is used to determine	ne th	e health of the thyroid gland. Iodine-131 is an example of			
	a. an allotrope	c.	radiation			
	b. a tracer	d.	a structure			

### Matching

Match each statement with the correct item below.

- a. involves substrate and an active site
- b. ADP plus phosphate
- c. glucose, cellulose, and sucrose
- d. fats, oils, and steroids
- e. amide group in proteins
- f. vitamin C, NADH, and FADH<sub>2</sub>
- g. involves fuel molecules and oxygen
- h. involves proteins, carbohydrates, lipids, glycolysis, and fermentation
- i. contains adenine, guanine, and uracil
- j. hemoglobin, collagen, and keratin
- k. sugar, phosphate, and nitrogen base
- l. blood sugar
- m. starch, cellulose, and glycogen
- n. is caused by heat, pH changes, chemicals, or mechanical agitation
- o. made from glucose plus fructose
- p. contains carboxyl group and amino group
- q. produces ethanol or lactic acid
- r. DNA and RNA are examples
- s. contains adenine, guanine, and thymine
- t. cholesterol, vitamin D, and sex hormones are examples
- \_\_\_\_\_ 71. protein
- \_\_\_\_\_ 72. glucose
- \_\_\_\_\_ 73. nucleic acids
- \_\_\_\_\_ 74. polysaccharides
- 75. RNA
- 76. denaturation
- 77. sucrose
- 78. amino acid
- 79. DNA

- \_\_\_\_\_ 80. steroids
- \_\_\_\_\_ 81. induced fit
- \_\_\_\_\_ 82. carbohydrate
- \_\_\_\_\_ 83. peptide bond
- \_\_\_\_\_ 84. biochemistry
- \_\_\_\_\_ 85. ATP
- \_\_\_\_\_ 86. coenzymes
- \_\_\_\_\_ 87. nucleotide
- \_\_\_\_\_ 88. respiration
- \_\_\_\_\_ 89. lipids

*Match each item with the correct statement below.* 

- a. alpha particle
- b. beta particle
- c. deuterium
- d. gamma ray
- e. gray
- f. half-life

h. nuclear fusioni. nuclear reactor

nuclear fission

- j. radioactivity
- k. sievert l. tritium

g.

- 90. The time required for half of a sample of a radioactive substance to undergo nuclear decay is called the
- 91.  $\overline{A(n)}$  consists of a helium nucleus.
- 92. The unit of radiation used to measure the amount of radiation received by an organism is called the \_\_\_\_\_.
  - 93. \_\_\_\_\_ is the reaction that occurs when two small nuclei join together to form a larger nucleus.
- 94. The spontaneous emission of radiation by a nucleus is known as
- 95. \_\_\_\_\_ is the process by which a single large nucleus breaks apart into two smaller nuclei.
- 96. A(n) \_\_\_\_\_ is a high-energy form of electromagnetic radiation commonly released during radioactive decay.
- 97. The \_\_\_\_\_\_ is a unit of radiation that measures the amount of radiation absorbed by a tissue.
- 98. The isotope of hydrogen with a mass number of 3 is \_\_\_\_\_.
- \_\_\_\_\_ 99. A(n) \_\_\_\_\_ is a device in which a nuclear reaction is used to generate energy.
- 100. A(n) \_\_\_\_\_ is a high-energy electron released from a nucleus during radioactive decay.

# Chemistry G11- Q4 Revision Sheet Answer Section

### **MULTIPLE CHOICE**

1.	ANS:	D	PTS:	1	DIF:	В	OBJ:	19-1
2.	ANS:	В	PTS:	1	DIF:	В	OBJ:	19-1
3.	ANS:	D	PTS:	1	DIF:	В	OBJ:	19-2
4.	ANS:	С	PTS:	1	DIF:	В	OBJ:	19-2
5.	ANS:	С	PTS:	1	DIF:	В	OBJ:	19-1
6.	ANS:	А	PTS:	1	DIF:	В	OBJ:	19-4
7.	ANS:	D	PTS:	1	DIF:	В	OBJ:	19-4
8.	ANS:	В	PTS:	1	DIF:	В	OBJ:	19-1
9.	ANS:	С	PTS:	1	DIF:	В	OBJ:	19-1
10.	ANS:	А	PTS:	1	DIF:	А	OBJ:	19-1
11.	ANS:	В	PTS:	1	DIF:	В	OBJ:	19-1
12.	ANS:	D	PTS:	1	DIF:	В	OBJ:	19-1
13.	ANS:	А	PTS:	1	DIF:	В	OBJ:	19-4
14.	ANS:	С	PTS:	1	DIF:	А	OBJ:	19-4
15.	ANS:	В	PTS:	1	DIF:	В	OBJ:	19-1
16.	ANS:	С	PTS:	1	DIF:	В	OBJ:	19-3
17.	ANS:	D	PTS:	1	DIF:	В	OBJ:	19-3
18.	ANS:	В	PTS:	1	DIF:	В	OBJ:	19-3
19.	ANS:	В	PTS:	1	DIF:	В	OBJ:	19-3
20.	ANS:	А	PTS:	1	DIF:	В	OBJ:	19-3
21.	ANS:	D	PTS:	1	DIF:	В	OBJ:	20-2
22.	ANS:	D	PTS:	1	DIF:	В	OBJ:	20-2
23.	ANS:	D	PTS:	1	DIF:	В	OBJ:	20-4
24.	ANS:	С	PTS:	1	DIF:	В	OBJ:	20-9
25.	ANS:	С	PTS:	1	DIF:	В	OBJ:	20-9
26.	ANS:	С	PTS:	1	DIF:	В	OBJ:	20-1
27.	ANS:	А	PTS:	1	DIF:	В	OBJ:	20-2
28.	ANS:	В	PTS:	1	DIF:	В	OBJ:	20-2
29.	ANS:	В	PTS:	1	DIF:	В	OBJ:	20-1
30.	ANS:	В	PTS:	1	DIF:	В	OBJ:	20-2
31.	ANS:	В	PTS:	1	DIF:	В	OBJ:	20-2
32.	ANS:	С	PTS:	1	DIF:	В	OBJ:	20-2
33.	ANS:	В	PTS:	1	DIF:	В	OBJ:	20-3
34.	ANS:	В	PTS:	1	DIF:	В	OBJ:	20-3
35.	ANS:	С	PTS:	1	DIF:	В	OBJ:	20-3
36.	ANS:	А	PTS:	1	DIF:	В	OBJ:	20-4
37.	ANS:	В	PTS:	1	DIF:	В	OBJ:	20-5
38.	ANS:	D	PTS:	1	DIF:	А	OBJ:	20-6
39.	ANS:	В	PTS:	1	DIF:	В	OBJ:	20-8

40.	ANS:	С	PTS:	1	DIF:	В	OBJ:	20-7
41.	ANS:	А	PTS:	1	DIF:	В	OBJ:	20-9
42.	ANS:	В	PTS:	1	DIF:	В	OBJ:	20-8
43.	ANS:	С	PTS:	1	DIF:	А	OBJ:	20-8
44.	ANS:	В	PTS:	1	DIF:	А	OBJ:	20-8
45.	ANS:	С	PTS:	1	DIF:	В	OBJ:	21-1
46.	ANS:	В	PTS:	1	DIF:	В	OBJ:	21-2
47.	ANS:	А	PTS:	1	DIF:	В	OBJ:	21-5
48.	ANS:	А	PTS:	1	DIF:	В	OBJ:	21-2
49.	ANS:	С	PTS:	1	DIF:	В	OBJ:	21-2
50.	ANS:	D	PTS:	1	DIF:	В	OBJ:	21-4
51.	ANS:	В	PTS:	1	DIF:	В	OBJ:	21-4
52.	ANS:	С	PTS:	1	DIF:	В	OBJ:	21-6
53.	ANS:	D	PTS:	1	DIF:	В	OBJ:	21-2
54.	ANS:	В	PTS:	1	DIF:	В	OBJ:	21-1
55.	ANS:	А	PTS:	1	DIF:	В	OBJ:	21-1
56.	ANS:	В	PTS:	1	DIF:	В	OBJ:	21-1
57.	ANS:	А	PTS:	1	DIF:	А	OBJ:	21-2
58.	ANS:	А	PTS:	1	DIF:	В	OBJ:	21-2
59.	ANS:	С	PTS:	1	DIF:	В	OBJ:	21-2
60.	ANS:	С	PTS:	1	DIF:	В	OBJ:	21-2
61.	ANS:	С	PTS:	1	DIF:	В	OBJ:	21-2
62.	ANS:	D	PTS:	1	DIF:	В	OBJ:	21-2
63.	ANS:	В	PTS:	1	DIF:	А	OBJ:	21-3
64.	ANS:	В	PTS:	1	DIF:	В	OBJ:	21-3
65.	ANS:	А	PTS:	1	DIF:	В	OBJ:	21-3
66.	ANS:	С	PTS:	1	DIF:	В	OBJ:	21-6
67.	ANS:	С	PTS:	1	DIF:	В	OBJ:	21-4
68.	ANS:	С	PTS:	1	DIF:	В	OBJ:	21-1
69.	ANS:	А	PTS:	1	DIF:	В	OBJ:	21-8
70.	ANS:	В	PTS:	1	DIF:	В	OBJ:	21-8

# MATCHING

71.	ANS:	J	PTS:	1	DIF:	В	OBJ:	19-1
72.	ANS:	L	PTS:	1	DIF:	В	OBJ:	19-1
73.	ANS:	R	PTS:	1	DIF:	В	OBJ:	19-1
74.	ANS:	М	PTS:	1	DIF:	В	OBJ:	19-1
75.	ANS:	Ι	PTS:	1	DIF:	В	OBJ:	19-1
76.	ANS:	Ν	PTS:	1	DIF:	В	OBJ:	19-2
77.	ANS:	0	PTS:	1	DIF:	В	OBJ:	19-4
78.	ANS:	Р	PTS:	1	DIF:	В	OBJ:	19-4
79.	ANS:	S	PTS:	1	DIF:	В	OBJ:	19-1
80.	ANS:	Т	PTS:	1	DIF:	В	OBJ:	19-1

81.	ANS:	А	PTS:	1	DIF:	В	OBJ:	19-2
82.	ANS:	С	PTS:	1	DIF:	В	OBJ:	19-1
83.	ANS:	E	PTS:	1	DIF:	В	OBJ:	19-1
84.	ANS:	Н	PTS:	1	DIF:	В	OBJ:	19-1
85.	ANS:	В	PTS:	1	DIF:	В	OBJ:	19-3
86.	ANS:	F	PTS:	1	DIF:	В	OBJ:	19-2
87.	ANS:	Κ	PTS:	1	DIF:	В	OBJ:	19-1
88.	ANS:	G	PTS:	1	DIF:	В	OBJ:	19-3
89.	ANS:	D	PTS:	1	DIF:	В	OBJ:	19-1
90.	ANS:	F	PTS:	1	DIF:	В	OBJ:	21-3
91.	ANS:	А	PTS:	1	DIF:	В	OBJ:	21-2
92.	ANS:	E	PTS:	1	DIF:	В	OBJ:	21-7
93.	ANS:	Н	PTS:	1	DIF:	В	OBJ:	21-4
94.	ANS:	J	PTS:	1	DIF:	В	OBJ:	21-2
95.	ANS:	G	PTS:	1	DIF:	В	OBJ:	21-4
96.	ANS:	D	PTS:	1	DIF:	В	OBJ:	21-2
97.	ANS:	Κ	PTS:	1	DIF:	В	OBJ:	21-7
98.	ANS:	L	PTS:	1	DIF:	В	OBJ:	21-2
99.	ANS:	Ι	PTS:	1	DIF:	В	OBJ:	21-6
100.	ANS:	В	PTS:	1	DIF:	В	OBJ:	21-2