Name: Score: _____ / 50

Science English Semester Final 2022

You can do it!

YOU

THE TEST

Name: Number:

Biology Section [32 points]

DNA	Ω I	ECT	ΓT	\cap	TC
DNA	\mathbf{O}	EO.	U	Ul	10

DNA QUE	<u>8110N8</u>		
Question 0 Che	eck that your n	ame and number are on top	p of each page. Thanks!
parents and the e	nvironment we		ent; inherited information from our raits below, determine which traits te them in the correct box height
	muscle mass	blood type	scars
	hair color	tattoos	disease
Write one examp		each category that is not o	Both on the list above.
Environment: _			
Both:			

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[2.5 point				ne following sen			
structura	ıl enzy	me	collagen	chromosomes	functional	chemical	genes
a.	The info	rmatio	n that you in	nherit from your	parents is con	tained in	·
	Each on	e of the	ese is a sma	ll section of you	r DNA.		
b.			prot	eins build the	body. An ex	ample of this	s protein is
c.			prot	eins take part ii	n chemical re	eactions in the	e body. An
	example	of this	protein is	a(n)	·		

Question 3 Are you hungry? Me too! Please fill in the blanks or circle the correct choice so you can know about my favorite food—DNA Spaghetti! YUMMY! Do you know it?

[5 points]

The full name for DNA Spaghetti is (Damaxyriboncleic Acid / Deoxyribonucleic Acid / Dominospizza Acid) Spaghetti. It is made with delicious (strands / proteins / cells) of DNA. To make Spaghetti DNA, we need to first extract the DNA. Inside every healthy ______ in the human body, there is an organelle (細胞小器官) at its center called the ______. This is where the DNA can be found. The DNA itself is wound into tightly coiled structures called (chromosomes / melon pan / genes) so we need to unwind it first. The DNA is super long, with each strand being about three (light years / meters / namometers) long. You can make a lot of spaghetti with it!

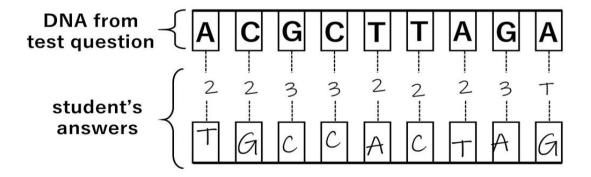
[Question 3 continues on the next page]

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When you cut the DNA with your kitchen knife, so you can boil it in a pot, make sure your knife is very sharp. The sides of the DNA helix (its backbone) are made of a strong (plasticized / gene / sugar) – phosphate chain, so your knife needs to be sharp to cut it. So, what makes DNA Spaghetti so delicious? It is the (two/one/ π /four) types of base pairs inside the DNA which are made of a total of ([2] / [2+2] / [2+2+2]) unique nucleobases that are held together by (nitrogen bonding / hydrogen bonding / nuclear fusion / the power of friendship). DNA Spaghetti is my favorite food and I hope you enjoy it. It's DNAmazing!

Question 4 A student is taking a biology test. One question asks him to match the other half of a DNA strand by writing in the correct matching nucleobases and to also write the correct number of hydrogen bonds between them. Below are his answers.



Sadly, the student made several mistakes. Please put a circle around each of his mistakes in his answer above. (For each nucleobase pair above, circle the number of hydrogen bonds, the nucleobase, or both, **if** they are wrong.) [5 **points**]

What do A, G, T, and C stand for?		
A:	G:	
C:	T:	

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Maine.	Nullibel.

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BANANA QUESTIONS

You are hungry for scie at the DNA inside it. (P.)	_	_	
Question Z First, you redetergent, and one other			You need water, liquid [2.5 points]
ethanol	salt	sugar	two cats
What is the function of	this third material in th	ne experiment?	
Question zz After make your solution. What step			-
Question zzz Quickly, Why should you stir i [1 point]			

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release the DNA	The liquid detergent is a surfactant (界面活 from inside the cell. How exactly does it as and pans, and why we don't just use water	do this? (Think about why we use
	After filtering your solution and pouring is the test tube. Why do you use ethanol and yer?	
picture of the test that test tube. Ple	You are very happy with the experiment st tube so you can post it to Instagram and ease draw what the inside looks like. Please the filtrate (the filtered solution).	d show all your friends! Below is

ZZZZZZZZZZZZZZZZZZZZZZ

END OF Biology Section

Group Research Project Section [18 points]

Please answer the following questions in complete sentences, with proper grammar! **Question 1** What is the title of your poster? [1 point] **Question 2** What was the goal/purpose of this research? [2 points] **Question 3** What was your hypothesis? [2 points]

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[Research Section Page 7	ո]	
Question 4 What methods d	id you use to check your hypothesis?	[3 points]
	nclusion of your research? Was your hypothe sion, you can explain what problems you ha	
Question 6 If you had to do	a new research project based on your result would you try to answer?	ts, what would you

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Question 7 If you had to redo the squality of your results?	ame research project, what would you do to improve the [2 points]
	e fun working on your posters and research. What part of What part of the research was the most difficult for you?

hDca;owoioak;DkarbldA

END OF [Research	Dinosaur Box: If you finish the test early, you can draw a dinosaur here! [0 points]
Section]	
END OF Final	i L