Micro 260 Win 2012	Name:
Tools: You may use your notes and or b	book for this assignment
1) What is an enzyme? (4 pts)	
2) What are the two major molecular typ	pes of enzymes found in living cells (2 pts)
2) II	
3) How many moles of substrate can an	enzyme turn over per minute? (2 pts)
4) When an enzyme loses structural sha	pe this happenstance is called
and can be brought about due to extreme	es in a),
<ul> <li>b)and/or</li> <li>d) What is Q<sub>10</sub> as related to enzyme ac</li> </ul>	c) tivity
e) How can just a 1°C change in temp	erature affect enzymes activity? (8 pts)
5) Enzymes are named according to the added to most enzyme:	starting material or chemical group the act upon. What suffix is (1 pts)
6) enzyme to their monomer structures. (1 pts)	s is a class of protein molecules that break polysaccharides down

7) Draw out and label the steps in an enzyme substrate product catalyzed biochemical reaction. (8 pts).

8)Draw out and label an enzyme velocity graph compared to a non-enzymatic biological reaction.(6 pts)

9) What affects the velocity rate the **initial** part of an exergonic (catobolic) enzyme catalyzed reaction (2 pts)

10) What affects of the latter part of this same enzymatic catalyzed reaction? (2 pts)

- 11) A) Draw **two different** graphs one for an anabolic and the other for an catabolic biochemical reaction. Properly label each part of the graph.
  - B) Provide examples for each graph of a class type of enzyme that controls each type of biochemical reaction. (10 pts).

11 C) \_\_\_\_\_\_ are metabolic reactions that can proceed toward catabolism or toward anabolism depending on the needs of the cell. (2 pts)

12) Describe the function of co-enzymes. (4 pts)

13) The break down of glucose to  $CO_2$  during aerobic respiration occurs by a series of oxidative reductive bio-chemical reactions all controlled by enzymes. Draw out a <u>molecular model</u> of an oxidized (labeled as figure "A") next to a reduced form (labeled as figure "B") of nicotine-adenine-dinucleotide (NAD). (Label each part of these molecules correctly). (8 pts)

13 b) What subatomic particles does NAD provide to the respiratory biochemical pathway? (2 pts)

(1)	(2)	
14) Enzyme use a form of catalyzed biochemical reaction	. (2 pts)	to control or inhibit
15) Two such forms enzyme in	hibition are called: a)	
b)	(2 pts)	
15 c) The first form of this in amounts of substrate. However concentration. Where does the enzyme? (4 pts)	nhibition can be reversed by saturations er, the second form of this inhibit is first and second form of inhibition	ng the enzyme-inhibitor with copious not affected by substrate take place across an

16) Substrate-level phosphorylation can best be described as:(2 pt)		
17) The pentose phosphate pathway is primarily used to produce:	necessary	
for nucleic acid bio-synthesis and 12 energy co-enzyme		
<ul><li>18) On the other hand, the Entner-Doudoroff provides one of each energy molecules. These a</li></ul>	re:	
1:, 1:, and 1:, and 1:		
19) The amount of ATP yield from aerobic respiration by a prokaryote is		
b) The amount of ATP yield from anaerobic respiration by a prokaryote is(1 pt)		
c) The amount of ATP yield by facultative anaerobic respiration by a prokaryote is(1 pt)		
20) Unlike <b>aerobic</b> bacteria that require oxygen as a <u>final electron acceptor</u> as part of the resp	iratory	
pathway, <b>obligate anaerobic</b> bacteria use either a: b:	or	
c: as their final electron acceptor (3 pts).		

21) On the other hand, facultative anaerobic bacteria use \_\_\_\_\_\_\_ as their final electron acceptor producing alcohol, lactic acid or many other types of end products. (1pt)

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