

Name _____

Mic 226 Exam 1 Fall 95

1. (10 points). Name five bacteria (Genus and species) which grow as cocci.

A. _____

B. _____

C. _____

D. _____

E. _____

2. (10 pts) Draw a structural formula for any compound which contains a glycosidic bond: Name the compound and circle the glycosidic bond.

Name_____

3. A. (6 pts) Name two properties of genetic information (i.e., chromosomes) which are similar in both eukaryotic and prokaryotic cells. Answer in complete sentences. "Properties" refers to chemistry, structure, organization, storage , or environment of the chromosome within the cell.

i. _____

ii. _____

B. (12 pts) Name three properties of genetic information which are different in eukaryotes and prokaryotes. Tell how each property is different in eukaryotes and in prokaryotes. "Property" is defined above.

i. _____

ii. _____

iii. _____

4. (15 pts) Diagram the structure of adenosine triphosphate (ATP). Identify the kinds of bonds between the phosphates, the phosphate and the ribose, and between the ribose and adenine. Identify three additional functional groups.

Name _____

5. (2 pts each unless otherwise indicated)

A. Name one characteristic of exergonic reactions. _____

B. (4 pts) Discuss the interconversion of NAD^+ and $\text{NADH} + \text{H}^+$. Tell about the movement of electrons and which compounds are oxidized/reduced. Structural formulas are not needed.

C. Give an example (i.e., name) of a biochemical reaction or pathway which produces a net yield of $\text{NADH} + \text{H}^+$. That is, produces more $\text{NADH} + \text{H}^+$ than NAD^+ .

D. Give an example (i.e., name) of a biochemical reaction or pathway which produces a net yield of NAD^+ . That is, produces more NAD^+ than $\text{NADH} + \text{H}^+$.

E. What is anhydride? A structural formula can be substituted. _____

F. (4 pts) What functional groups are present in Lactate? _____

G. (3 pts) Define reduction potential. _____

I. What is the significance of a reduction potential which is a relatively large negative number?

Name _____

6. (12 pts) Diagram structural formulas for pyruvate and L-alanine.

7. (14 pts) Name seven low molecular compounds which you could find incorporated into peptidoglycan. Abbreviations are not acceptable (for full credit).

- A. _____
- B. _____
- C. _____
- D. _____
- E. _____
- F. _____
- G. _____