Chapter 7 Cellular Respiration

1. Most energy from an original carbon glucose molecule being broken down to CO2 with net ATP -post glycolysis but before electron transport chain - is in the form of (NADH or NAD+)
2. Name the TWO types of electron carriers produced in the citric acid cycle.

NADH AND FADH2

1. What process in eukaryotic cells will proceed with or without O2?

GLYCOLYSIS

1. Name the process that produces the MOST ATP when glucose is completely oxidized to CO2 and H2O.

OXIDATIVE PHOSPHOROLATION (CHEMIOSMOSIS)

1. What is the primary role of oxygen in cellular respiration?

ACTAS AN ACCEPTOR FOR ELECTRONS & HYDROGREN; FORMING WATER

1. What is the difference between catabolic and anabolic pathways?

CATABOLIC; BREAKS DOWN MOLECULES AND ANABOLIC; SMALL MOLECULES BUILD LARGER COMPLEX MOLECULES

1. Write out the formula for cellular respiration. What is oxidized? What is reduced?

FORMULA IN YOUR NOTES!

C6H12O6 – OXIDIZED AND O2 IS REDUCED

1. When NAD+ gains a H atom, the molecule becomes (oxidized, reduced)
2. When an athlete exhausts his or her ATP supply, what likely happens?

CATABOLIC PROCESSES ARE ACTIVATED THAT GENERATE MORE ATP

1. What are ALL products produced by glycolysis?

2 NADH, 2 PYRUVATE & 2 ATP

1. List the sequence (in order) of complete oxidation process of glucose (start to finish)

GLUCOSE-GLYCOLYSIS-PYRUVATE OXIDATION-CITRIC ACID CYCLE-ELECTRON TRANSPORT CHAIN

1. Why is glycolysis considered to be one of the FIRST metabolic pathways to evolve?

DOES NOT INVOLOVE ORGANELLES OR SPECIALIZED STRUCTURES, DOES NOT REQUIRE O2, PRESENT IN MOST ORGANISMS

Chapter 8 Photosynthesis

1. The process of photosynthesis most likely originated in (prokaryotes or eukaryotes)

PROKARYOTES

1. Name the location of chlorophyll in autotrophic bacteria.

INFOLDED PLASMA MEMBRANE

1. Plant photosynthesize in the (light or dark), but respire in (light or dark or both)
2. When oxygen is released due to photosynthesis, it is a direct by product of SPLITTING WATER MOLECULES



1. What wavelength of light is the LEAST effective driving photosynthesis? 700NM
2. What colors are the MOST effective for driving photosynthesis? VIOLET - BLUE
3. What is the difference between autotrophs and heterotrophs? Be specific.

AUTOTROPHS CAN NOURSIH THEMSELVES

1. Why do the leaves of deciduous trees change colors in autumn?

CARTENOIDS & OTHER PIGMENTS ARE STILL PRESENT IN LEAVES

1. As electrons are passed through the electron carriers with photosystem II, the lose energy. What happens to this energy?

IT IS USED TO SYNTHESIZE ATP

1. In photosynthesis, chemiosmosis moves proteins from \_\_\_STROMA\_\_\_ to \_\_\_\_THYLAKOID SPACE\_\_\_\_\_\_\_\_\_.
2. Name the TWO products of light reactions that are used in Calvin Cycle.

ATP AND NADPH

1. What is the primary function of the Calvin Cycle?

SYTNTHESIZE SIMPLE SUGARS FROM CO2