Unit 3 study guide

Name KEY

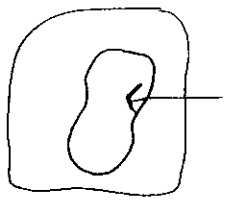
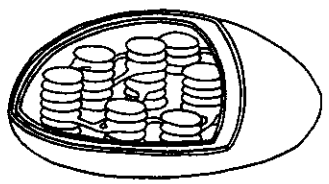
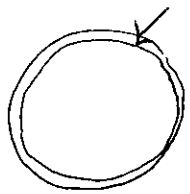
1) What are the three major differences between plant and animal cells?
Plants have a LARGE vacuole, Cell walls, & Chloroplasts

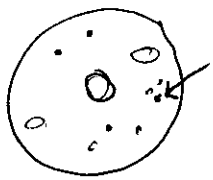
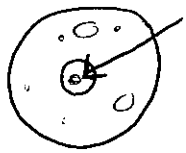
2) How are chloroplasts and mitochondria related?
Chloroplasts use sunlight to make sugar (glucose). The mitochondria turn the energy in the glucose into useable energy (ATP).

3) Are chloroplasts found in both animal and plant cells?
NO! only in plant cells!

4) Are mitochondria found in both animal and plant cells?
YES!

Complete the table below on cell parts

Name of Cell part	Drawing	Function
Miochondria		To turn energy in food into energy the cell can use in the form of ATP
vacuole		Water storage
chloroplast		uses sunlight to make glucose (photosynthesis)
Cell membrane		controls what enters & exits the cell.

Ribosomes		Synthesize protiens
Nucleus		Contains the genetic information in the form of DNA
Cell wall		provides structure & support to plant cells (& to prokaryotes)

5) What is photosynthesis and where in the cell does it occur?

sunlight converts water & CO_2 into glucose & oxygen.
it occurs in the mitochondria

6) What is the chemical equation for photosynthesis? (you may write the common names of the reactants and products)

Reactants —sunlight→ Products

Carbon dioxide + water → glucose + oxygen

7) What is the purpose of cellular respiration?

to convert food energy into usable energy (ATP)

8) What is the chemical equation for aerobic cellular respiration? (you may write the common names of the reactants and products)

Reactants → Products

oxygen + glucose → CO_2 + water + 30ish ATP

9) Which requires oxygen, anaerobic respiration or aerobic respiration?

aerobic

10) Which produces more ATP, aerobic respiration or anaerobic respiration?

aerobic

11) What is the purpose of ATP for the cell?

to provide usable energy

12) What are the two types of anaerobic respiration?
Alcoholic fermentation & lactic acid fermentation

13) Where does aerobic respiration occur in the cell?
mitochondria

14) Where does anaerobic respiration occur in the cell?
cytoplasm

15) Lactic acid fermentation occurs in muscle cells during strenuous exercise. Why?
because the muscles are not getting enough oxygen for aerobic respiration & they have to switch to lactic acid fermentation.

16) What is another type of organism that is not a eukaryote but can also carry out lactic acid fermentation? How is this used in the food industry?
Bacteria are used to make yogurt & sourcream

17) What eukaryotic organism carries out alcoholic fermentation and how is this used in the food and beverage industry? Yeast are used to make alcohol & bread

18) What two forms of cellular respiration both produce CO_2?
aerobic & Alcoholic fermentation

*******You should know the products and reactant of photosynthesis and all three types of cellular respiration!!!!!!!!!!!**

25) complete the table

Process	Reactant(s)	Products	Location
Photosynthesis	CO_2, water & sunlight	glucose & oxygen	chloroplast
Aerobic cellular respiration	glucose & oxygen	CO_2, water & ~30 ish ATP	mitochondria
Lactic acid fermentation	glucose	Lactic acid and 2 ATP	cytoplasm
Alcoholic fermentation	glucose	Ethylalcohol, CO_2 & 2 ATP	cytoplasm