Aerobic cellular respiration and fermentation – Pre- and post- lab assessment questions

The outcome of both respiration and fermentation is to

a. Use up excess energy b. produce ATP c. make carbohydrate
d. make needed metabolic intermediates e. produce metabolic water

Glycolysis is the process

a. in which glucose is split to form 2 pyruvates b. in which carbon dioxide is fixed into an organic molecule
c. by which ATP is formed in the mitochondrion d. that occurs only in animal and fungal cells

In this module your test organism was a. dung beetles b. peas c. corn d. beans e. we used more than one of these organisms

What does tetrazolium do? A. it is an indicator for glucose b. it is an indicator for dextrans, the breakdown product of starch c. it is a hydrogen ion and electron carrier d. it supplies energy to the enzymes

How does tetrazolium indirectly indicate the presence of mitochondria? A. it doesn't, it is an indicator for glycolysis b. it intercepts electrons stripped from glucose in the Kreb's cycle indicating mitochondria are functioning c. it binds to the membranes within the mitochondrion d. it interacts with ATP formed in the mitochondrion

Glycolysis occurs in the a. mitochondrion b. cytoplasm c. chloroplast

The end product of fermentation in yeast is a. oxygen b. ethanol c. lactic acid d. pyruvate

The end product of glycolysis is a. oxygen b. ethanol c. lactic acid d. pyruvate

The conversion of pyruvate to ethanol does one major thing for yeasts, what is it?

a. Re-generates NAD+ so that glycolysis can continue
b. Makes more ATP during the conversion
c. Yields a high energy alcohol
d. Removes a chemically irritating compound (pyruvate) from the cell

In which fraction of the pea extract were the mitochondria located? a. supernatant b. pellet

The predominant organelles found in the brown buffy layer of the pellet was the a. chloroplast
b. central vacuole c. amlyoplast d. nucleus e. lysosome

The predominant organelle found in the brown dark green layer of the pellet was the a. chloroplast
b. central vacuole c. amlyoplast d. nucleus e. lysosome

What was the composition of the thick white layer of the pellet? a. protein
b. central vacuoles c. starch d. nuclei e. lipids

What is differential centrifugation? A. samples are spun at different RPMs which sediments components of the sample at different speeds b. different solutions are used to separate components based on solubility c. different centrifuges are used depending on the type of organism being studied

Rank the components separated by differential centrifugation from densest (heaviest) to lightest.

a. starch, mitochondria, nuclei, chloroplasts b. mitochondria, starch, chloroplasts, nuclei
c. nuclei, mitochondria, starch, chloroplasts d. starch, nuclei, chloroplasts, mitochondria