

RESPIRATION

1.
 - a) To derive off air or oxygen
 - b) To avoid killing yeast/Denaturing enzymes in yeast
 - c) To prevent air from getting into the yeast and glucose mixture.
 - d) Lime water turn to white precipitate
 - e) Use boiled yeast/glucose without yeast/yeast without glucose
2.
 - Lactic acid is toxic to tissues and must be removed from muscles to liver.
 - To increase supply of oxygen to tissues
3.
 - a) Anaerobic respiration
 - b) Brewing/Beer making
4.
 - Ethanol
 - Energy (ATP)
5.
 - Lactic acid
6.
 - a) Adenosine triphosphate (ATP)
 - b)
 - i) Beer brewing/wine making
 - ii) Baking using yeast.
7.
 - Have thin epithelium/wall to reduce distance of diffusion of the gases.
 - Moist to dissolve the diffusing gases
 - Highly folded to increase surface area for diffusion of gases.
 - Well supplied with blood or vascularized to help maintain high concentration gradient.
8.
 - a) A mouse has high surface area to volume ratio and tends to lose heat faster. It required more energy to replace it.

A dog has low surface area to volume ratio and lose less heat. Less energy is required to replace it

- b) Lactic acid
- 9. a) i) Ethanol and carbon (IV) oxide.
ii) Lactic acid
- b) It is the state when human body undergoes anaerobic respiration producing lactic acid. Oxygen has to be taken into the body to break the lactic acid.
- 10. a) Ratio of carbon dioxide produce to oxygen used up during breakdown of a food substrate.
- b) $R.Q = \frac{CO_2 \text{ produced}}{O_2 \text{ used up}}$
 $R.Q = \frac{102}{145}$
 $R.Q = 0.7$
- c) Fat/ Lipid

11.

Aerobic respiration	Photosynthesis
<ul style="list-style-type: none">- Take place in both plants and animals- Takes place in all body cells- Takes place during the day and night- Oxygen is taken up while carbon dioxide is removed.	<ul style="list-style-type: none">- Only takes place in plants.- Takes place in cells containing chloroplast- Takes place during the day only.Carbon dioxide used up while oxygen is given off.

12. a) Mitochondrion
- b) A - Outer membrane
- B - Inner membrane
- C - Matrix
- D - Cristae
- c) Increase surface area over which respiration takes place:
- d) ATP