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 = $^{102}/_{145}$

R.Q = 0.7

c) Fat/ Lipid

11.

Aerobic respiration	Photosynthesis
1. Take place in both plants and animals 2. Takes place in all body cells 3. Takes place during the day and night 4. Oxygen is taken up while carbon dioxide is removed.	• 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