

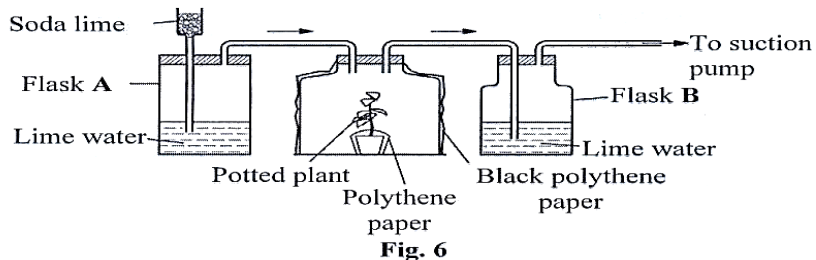


St. Peter's Senior Secondary School - Naalya

REVISION VOL. 1. No. 1 (2020)

S.3 BIOLOGY

1. Figure 6 is an experimental set up to investigate a process in plants.



- Fig. 6**
- (a) Name the process being investigated.
- (b) Explain why
- (i) The bell jar was covered with black polythene paper.
 - (ii) Part of the plant was covered with polythene paper.
 - (iii) Soda lime was used in the experiment.
- (c) State what would be observed in flasks A and B at the end of the investigation.
- (i) Flask A
 - (ii) Flask B
 - (iii) Explain the results stated in c (i) and (ii).
- (d) (i) State what would be observed in flasks A and B if the set-up was placed in a dark room.
- (ii) Explain your answer in d (i).
2. Figure 3 shows a structure in the mammalian lung, study the figure and answer the questions that follow:

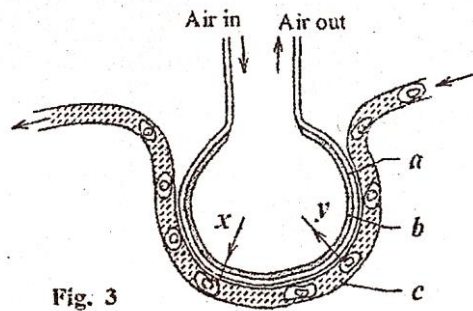


Fig. 3

- (a) Name the
- Parts labelled a, b, c
 - Gases indicated by arrows x and y.
- (b) Explain how the features shown in the figure, enable the structure to function efficiently.
- (c) State four differences between the air that goes into the structure and that which goes out of the structure.

3. The table below shows the percentage composition of inhaled and exhaled air, in a human being at rest and also the composition of exhaled air, during exercise. Use the information in the table to answer the questions that follow.

	Water Vapor	Nitrogen	Carbon dioxide	Oxygen
Inhaled air at rest	Variable	79%	0.03%	20.96%
Exhaled air at rest	0.8%	79%	4.1%	16.2%
Exhaled air during exercise	0.92%	79%	4.5%	15.58%

- State the differences in composition between inhaled and exhaled air at rest.
- Give a reason for each difference stated in (a).
- State the changes that occur in the composition of exhaled air in a human being who is previously at rest, then takes an exercise.
- Give a reason why each stated in (c) occurs.
- During exercise, the breathing rate increases. From the information provided, suggest why this happens.
- Why is the percentage of nitrogen constant in inhaled and exhaled air?

4. How does each of the following characteristics of a respiratory surface aid diffusion of gases at the surface?
- (a) Thin epithelium
 - (b) Dense network of capillaries
 - (c) Moist Surface
 - (d) Large surface area

SECTION C:

1. (a) Explain how the action of muscles causes carbon dioxide to pass from the lungs into the atmosphere.
(b) How does oxygen move from the air in the alveoli into body tissues?
(c) How are respiratory surfaces adapted to their functions?
2. (a). Describe the breathing mechanism in a bony fish.
(b). How are gills in a bony fish adapted to their functions?
3. (a) Explain how lungs are adapted to their functions as respiratory organs.
(b) Explain why amoeba does not have any respiratory system.
4. (a) Describe inhalation and exhalation in a bony fish.
(b) How is the respiratory surface in fish adapted for its function?

2010

5. (a) What is respiration?
(b) State three differences between aerobic and anaerobic respiration.
(c) describe gaseous exchange in a frog.

1997

6. (a) How does gaseous exchange take place in an insect?
(b) How does gaseous exchange in insects differ from that in mammals?
7. (a) What is a balanced diet?
(b) In which way is the ileum adapted for its function?
(c) Outline the fate of food after absorption.

8. (a) What is the importance of bile in digestion?
- (b) How does the body
- (i) Regulate the level of glucose in the blood?
 - (ii) Deal with amino acids?

END.