Adabistan-e-Soophia

General Certificate of Education Ordinary Level – III **(Test 2)**

.Adabistan-e-Soophia
School for Boys & Girls

CANDIDATE NAME	

CENTER NUMBER						CANDIDATE NUMBER						

Biology 5090/01

Paper II

Session 2020-21

Time 60minutes

Marks 40

Additional Materials: *Answer Booklet/Paper*

If you have been given an Answer Booklet, follow the instructions on the front cover of the Booklet. Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen.
You may use a soft pencil for any diagrams or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer all questions from Section A and B and attempt any ONE question from Section C.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

[TURN OVER]

1. Fig. 1.1 shows a diagram of a cross-section of a dicotyledonous leaf, as seen using a light microscope.

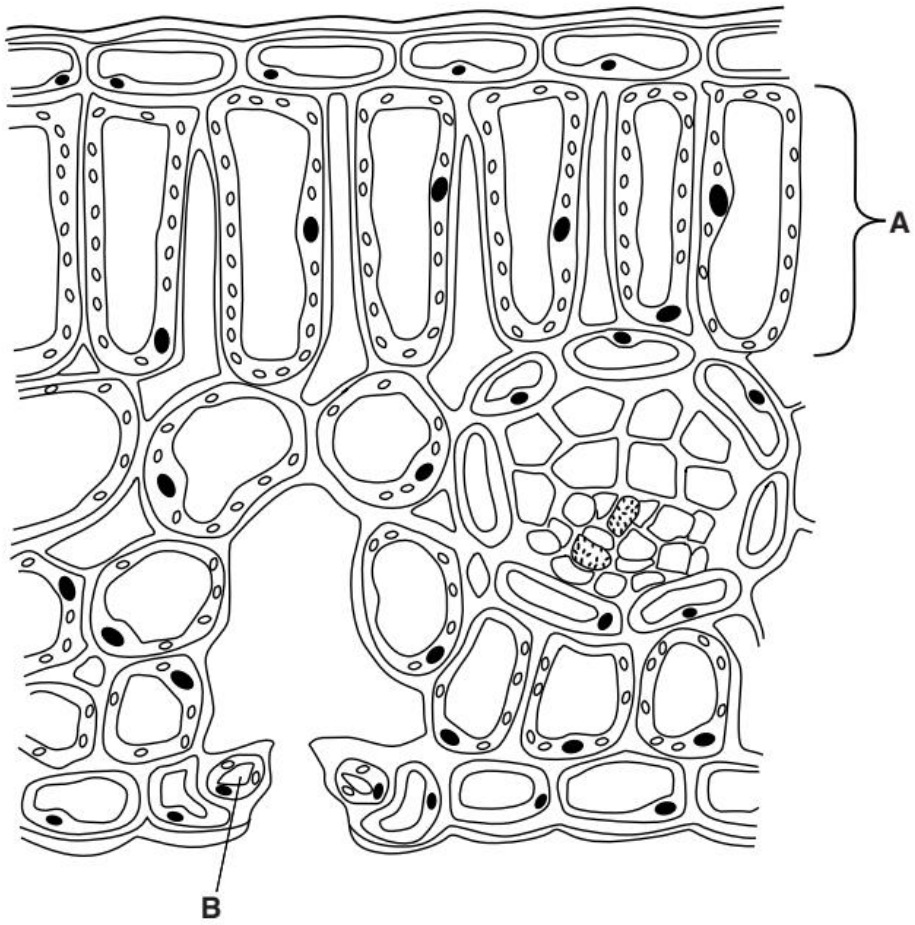


Fig. 1.1

(a) (i) Name tissue **A** and cell **B**.

A .....

B ..... [2]

(ii) Describe **two** ways in which tissue **A** is adapted for maximum photosynthesis.

1 .....

.....

2 .....

..... [2]

(b) Plants use carbon dioxide for photosynthesis.

(i) Describe where and how carbon dioxide enters a leaf.

.....

.....

.....

.....

.....

.....

..... [3]

(ii) State the **two** products of photosynthesis.

..... [1]

[Total: 8]

2. Fig. 3.1 shows the human respiratory system.

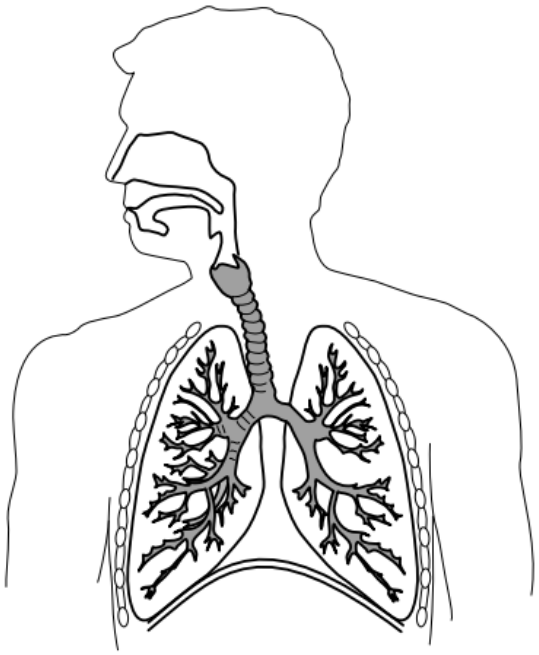


Fig. 3.1

(a) On Fig. 3.1 use label lines to identify:

a bronchiole;

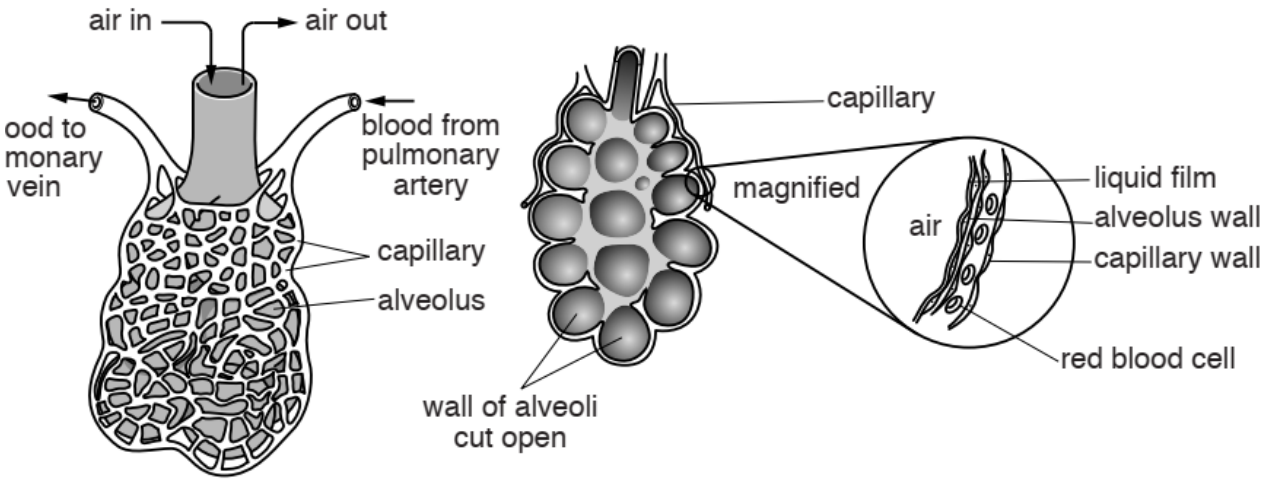
the larynx;

the trachea.

[3]

(b) Fig. 3.2 shows:

a group of alveoli and the capillaries surrounding them in a human lung;
a section through this group of alveoli with most of the capillaries removed;
a magnified section of part of the wall of an alveolus and its capillary.



group of alveoli and capillaries surrounding them

section through alveoli with most of the capillaries removed

magnified section of the wall of an alveolus and its capillary

Fig. 3.2

Use Fig. 3.2 to describe **three** features of gas exchange surfaces in animals.

feature 1 .....

.....

feature 2 .....

.....

feature 3 .....

.....

[3]

(c) In an investigation a student recorded the volume of air inspired in one minute. The measurement was taken while the student was resting and again when the student had run an 800 m race.

The results are shown in Table 3.1.

Table 3.1

	volume of air inspired / dm^3 per min
before the race	5.80
at the end of the race	88.75

(i) Calculate the increase in the volume of air inspired by the student at the end of the race.

.....dm^3 per min [1]

(ii) State **two** changes that the body makes to increase the volume of air inspired.

1 .....

.....

2 .....

.....

[2]

(iii) Suggest **one** reason why the body needs more air during exercise.

.....

.....

..... [1]

[Total: 10]

3. A student cut a section of a root and made an outline drawing of the distribution of tissues as shown in Fig. 3.1.

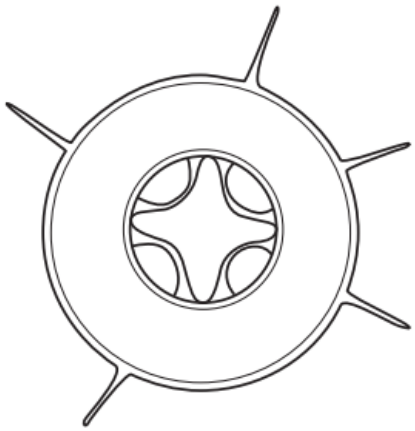


Fig. 3.1

(a) (i) Identify the position of the xylem tissue by drawing a label line and the letter **X** on Fig. 3.1. [1]

(ii) State why xylem is a tissue.

.....

.....

.....

.....[2]

(b) Water absorbed by the roots moves through the stem and enters the leaves. Most of this water is lost in transpiration.

Explain how the internal structure of leaves results in the loss of large quantities of water in transpiration.

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.....

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.....[3]

[Total: 6]

4. Fig. 3.1 is a scanning electron micrograph of a vertical section through part of the leaf of a broad bean plant, *Vicia faba*.

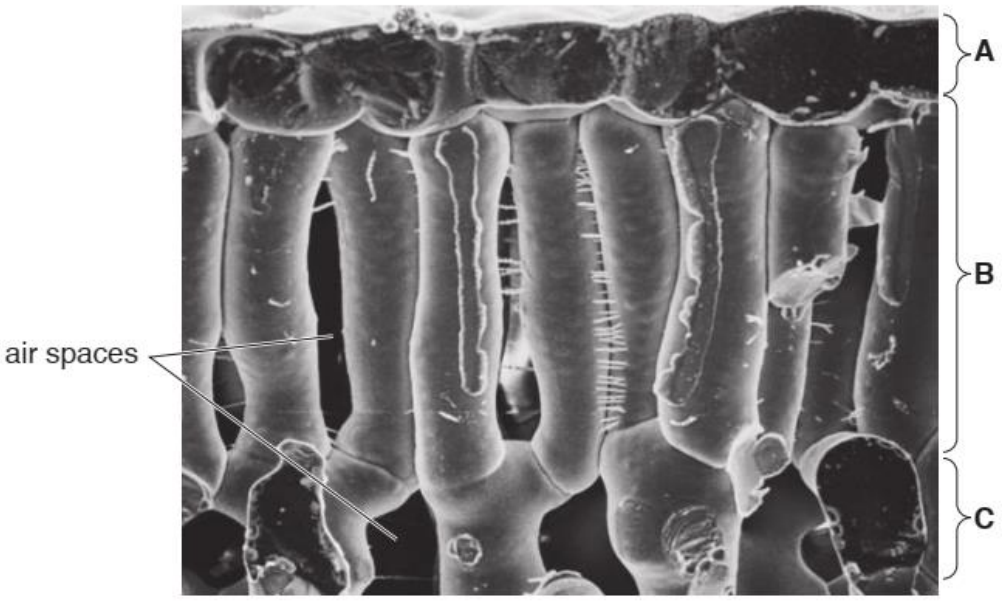

Fig. 3.1

(a) (i) State the names of the tissues labelled **A** and **B**.

A .....

B .....

[2]

(ii) The cells in regions **B** and **C** in Fig. 3.1 have a large surface area.

Explain why this is necessary for the functioning of the leaf cells.

.....

.....

.....

.....

.....

.....[3]

(iii) Explain why there are many interconnecting air spaces within the leaf.

.....

.....

.....

.....[2]

(b) When water is in short supply, plants can wilt as shown in Fig. 3.2.

Fig. 3.2

(i) State **two** conditions that are likely to increase the chances of wilting.

1 .....

2 .....

[2]

(ii) Explain what happens to the cells of a leaf to cause wilting.

.....

.....

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.....

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.....

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.....

.....

.....[4]

(iii) Wilting may look harmful, but it is often a strategy for survival.

Suggest the advantages to a plant of wilting.

.....

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.....

.....

..... [3]

[Total: 16]