

Annual Examinations for Secondary Schools 2022

YEAR 10 **SCIENCE AND TECHNOLOGY** **TIME: 1 hour**

Name: _____ Class: _____

1. The list below includes some statements that are examples of good health practices and others that are examples of bad health practices.

- Wearing a heavy shoulder school bag.
- Avoiding second-hand smoke.
- Washing one's hands regularly.
- Staying in a closed room with many friends for a long time.

Place each statement under the correct column in the table below.

Good Practices	Bad Practices	
		(1)
		(1)

Total 2 marks

2. The heart pumps blood to all organs around the body.

- a. Name the tube structures through which blood travels.

(1)

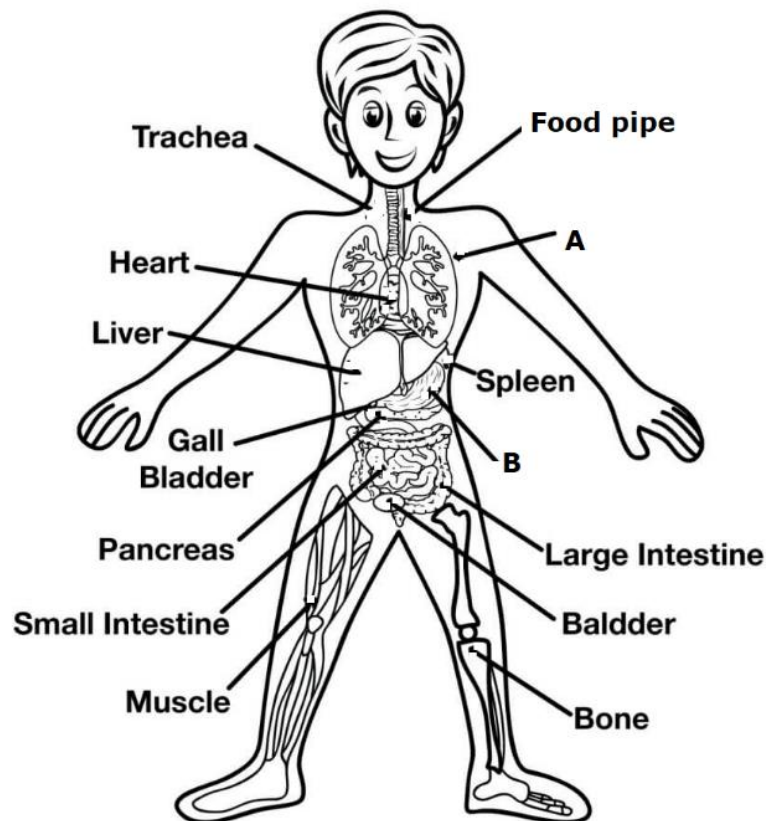
- b. Oxygen (in air) is needed by all cells of the body and is carried from an organ to all the cells. Tick (✓) the organ through which oxygen enters from the surrounding air into the body.

☐☐☐

(1)

Total 2 marks

3. **Figure 1** shows the internal organs of a young man.



<https://easyscienceforkids.com/all-about-your-body/>

Figure 1

- a. Identify organs A and B.

A: _____ B: _____ (2)

b. All the bones of the body form an internal skeleton. Underline the correct function of the skeleton.

- breaks down waste substances produced by cells.
- protects organs and allows movement.
- pumps blood to all organs of the body.

(1)

c. Fill in the blanks using any of the words below.

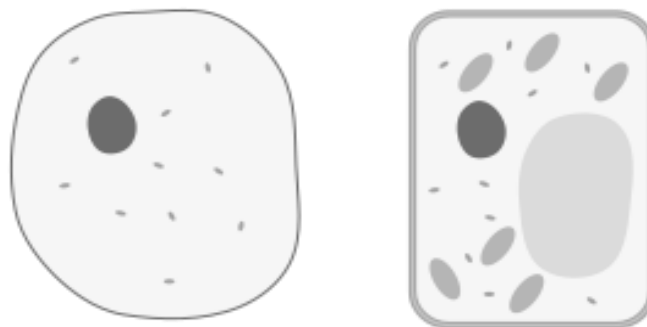
Cells	organs	function	structure	organisms	organelles
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i. Organs are groups of tissues that perform a specific _____. (1)

ii. Tissues are groups of _____ with similar structure and function. (1)

Total 5 marks

4. **Figure 2** shows a diagram of a plant and animal cell. Label on the diagram the nucleus of each cell.



(1)

Figure 2

Total 1 mark

5. James is packing his suitcase to go abroad.

His younger sister, Greta, asks him why the suitcase is fitted with rollers.



<https://www.samsonite.co.uk/luggage/>

- a. Write down the correct answer to Greta's question.

(2)

- b. Explain, giving a reason, what might happen to the rollers of the suitcase when used for a long time.

(2)

Total 4 marks

6. Christine carried out an experiment to see if leaves or sawdust are the better insulators of heat.

- a. Complete this sentence:

An insulator of heat is a material which does not _____

(1)

- b. In the experiment, Christine placed a bag of ice in a garbage bag full of leaves. She repeated the experiment by placing an identical bag of ice in a same sized garbage bag full of sawdust as shown in **Figure 3**. The bags of ice were completely covered by leaves or sawdust during the experiment.

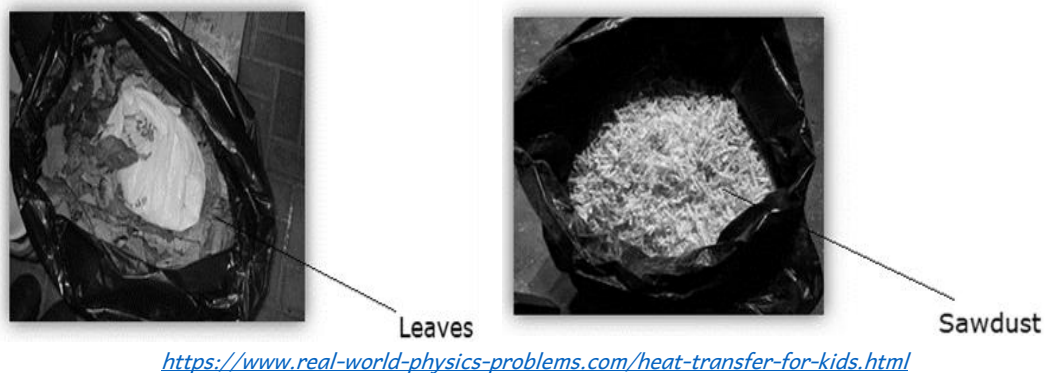


Figure 3

Christine obtained the following results:

Insulating material	Time taken for ice to melt completely
Leaves	3 days
Sawdust	5 days

- i. Name the material which is the better insulator.

_____ (1)

- ii. The two bags of ice used in the experiment must be of the same size. Even the two garbage bags used must be identical. Give **one** reason why this is important.

_____ (2)

- iii. Both leaves and sawdust contain trapped air. Explain why trapped air helps both materials to be good insulators.

_____ (2)

Total 6 marks

7. **Figure 4** shows **two** simple electronic keychains. Keychain 'A' has a light bulb output controlled by switch 1. Keychain 'B' has a sound output controlled by switch 2 and a light output controlled by switch 3.

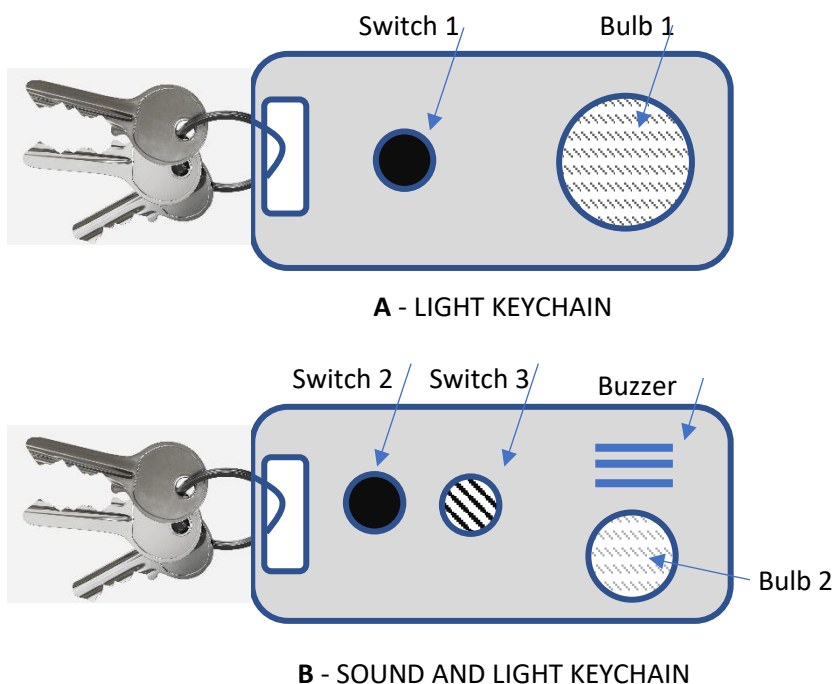


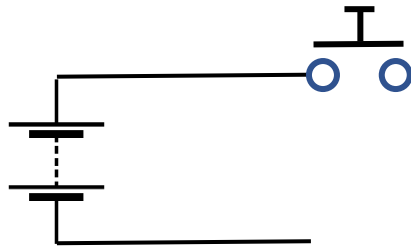
Figure 4

- a. Both keychains need a device to give them power. Tick (✓) the symbol that shows a power source.



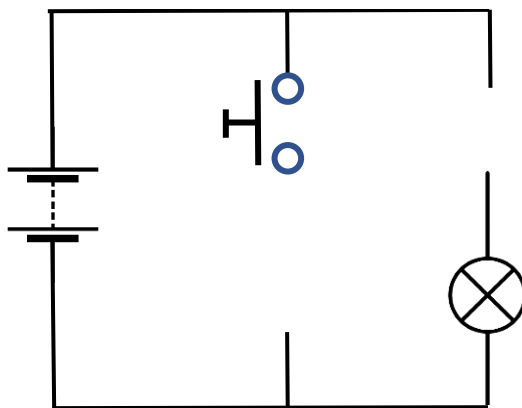
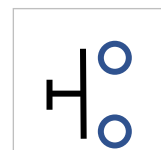
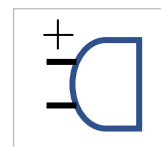
(1)

- b. Look at the Light Keychain 'A' and complete its simple circuit below, showing the missing light component.



(2)

- c. Look at the Sound and Light Keychain 'B' and complete the circuit. Remember that Switch 2 is for the buzzer sound and switch 3 is for the bulb. The missing symbols are given on the right. Label each switch with its full name.



(3)

Total 6 marks

8. a. Sort the energy sources given below into 'renewable' and 'non-renewable' by placing them in the correct column, in the following table.

Solar energy	Fossil fuels	Gas	Wind energy
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Renewable	Non-renewable

(1)

(1)

- b. In the space provided, draw and label a sketch of a renewable energy device that we can use in a home.

(2)

Total 4 marks

End of paper. Check your work again.