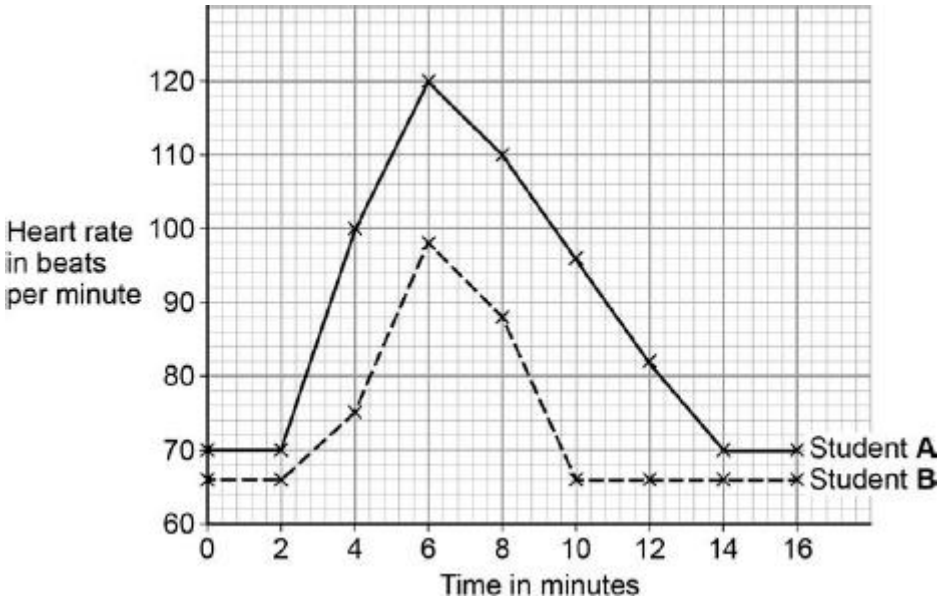
Name of the Student:_____
Max. Marks : 23 Marks **Time : 23 Minutes**

Q1.

Some students investigated how exercise affects heart rate.

The figure below shows their results.



(a) What was Student **B**'s resting heart rate?

Resting heart rate = _____ beats per minute

(1)

(b) The students started running at 2 minutes.

What evidence for this is in the figure above?

_____

_____

(1)

(c) For how many minutes did the students run?

Tick **one** box.

2 ☐

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4 ☐

6 ☐

14 ☐

(1)

(d) Student **B** is fitter than Student **A**.

Use the figure above to give **two** pieces of evidence that support this statement.

1. _____

_____

2. _____

_____

(2)

(e) There are other changes in the body during exercise.

Explain why these changes occur.

_____

_____

_____

_____

_____

_____

_____

_____

(4)

(Total 9 marks)

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Q2.

Pathogens cause infectious diseases in animals and plants.

(a) Draw **one** line from each disease to the type of pathogen that causes the disease.

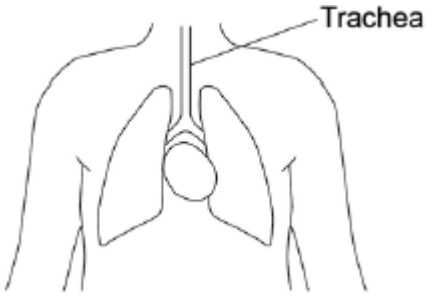
Disease	Type of pathogen
Gonorrhoea	Bacterium
Malaria	Fungus
Measles	Protist
	Virus

(3)

(b) Some parts of the human body have adaptations to reduce the entry of live pathogens.

Look at **Figure 1**.

Figure 1



Explain how the trachea is adapted to reduce the entry of live pathogens.

_____

_____

_____

_____

_____

_____

_____

_____

_____

(4)

(c) Malaria is a serious disease that can be fatal.

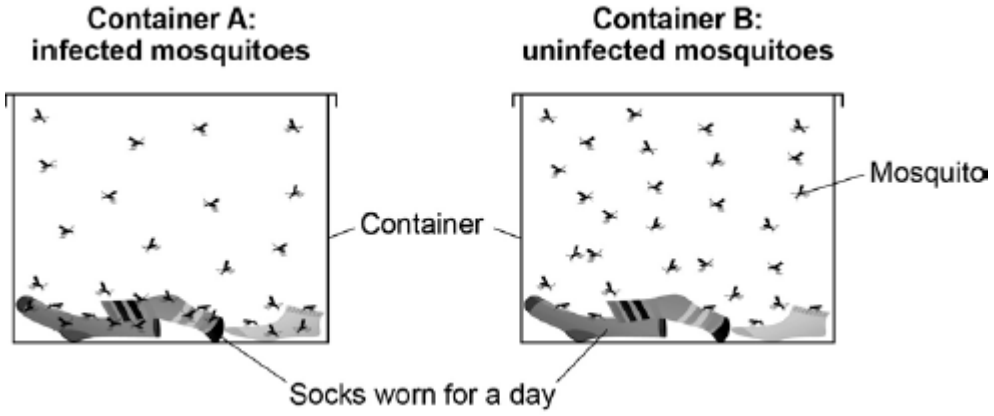
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Malaria is spread to humans by infected mosquitoes.

Scientists investigated the behaviour of mosquitoes to understand how the spread of malaria could be controlled.

Figure 2 shows the equipment the scientists used.

Figure 2



This is the method used.

1. 30 mosquitoes **infected with malaria** were placed in Container **A**.
2. 30 **uninfected** mosquitoes were placed in Container **B**.
3. The total number of times the mosquitoes landed on the socks was recorded.

Name the dependent variable and suggest **one** control variable in this investigation.

Dependent variable _____

_____

Control variable _____

_____

(2)

(d) Infected mosquitoes landed on the socks three times more often than uninfected mosquitoes.

Explain how this information can be used to reduce the spread of malaria.

_____

_____

_____

_____

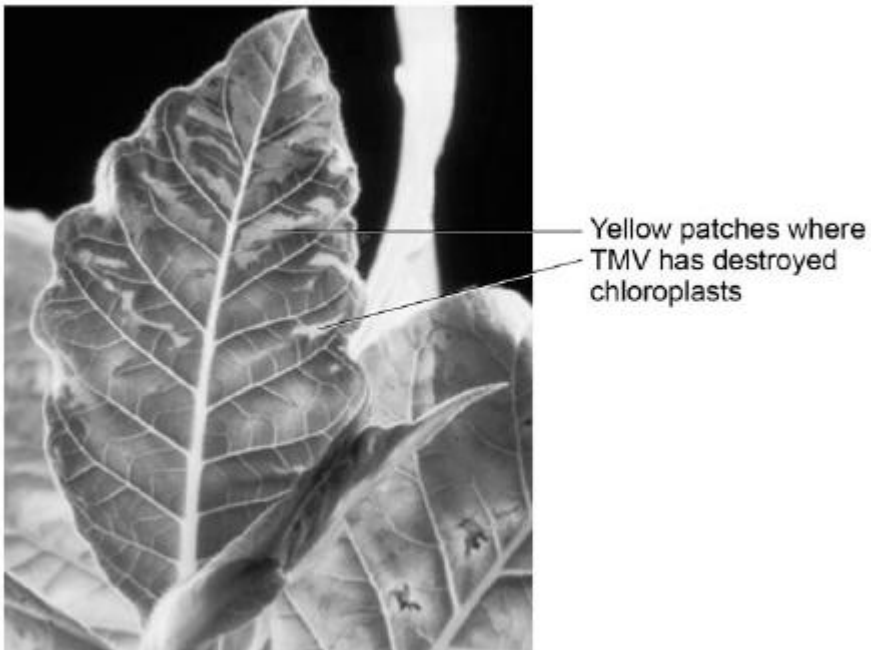
(2)

(e) Tobacco mosaic virus (TMV) affects many species of plant.

Figure 3 shows a leaf infected with TMV.

Figure 3

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© Nigel Cattlin/Getty Images

TMV destroys chloroplasts in the leaf.

Explain how this could affect the growth of the plant.

_____

_____

_____

_____

_____

_____

(3)

(Total 14 marks)

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