

## 9B Fit and Healthy

### Assessment for learning...year 9 (level 3-6)

Answer all questions:

Total marks	26
Time allowed	25 mins.

#### Question 1:

The information below shows the recommended daily amounts of nutrients and energy for four different people.

person	protein	calcium	iron	energy
15-year-old girl	45 g	800 mg	15 mg	8 830 kJ
15-year-old boy	55 g	1000 mg	11 mg	11 510 kJ
computer operator	56 g	700 mg	9 mg	10 700 kJ
bricklayer	56 g	700 mg	9 mg	13 000 kJ

(a) Suggest **one** reason why the bricklayer needs a higher energy diet than the computer operator.

.....

.....

1 mark

(b) Explain why the 15-year-olds need more calcium than the adults.

.....  
.....  
.....

2 marks

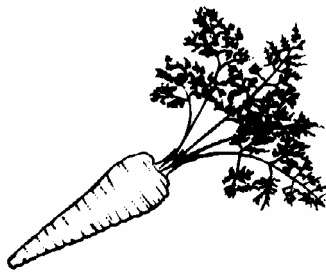
(c) Iron is needed to make red blood cells. Why do 15-year-old girls need more iron than 15-year-old boys?

.....  
.....

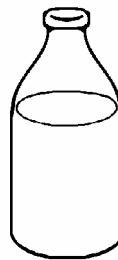
1 mark

(d) A balanced diet contains a variety of foods which provide nutrients and energy.

The drawings show four different foods. Choose from these to answer the questions which follow.



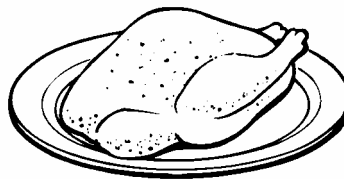
carrot



milk



vegetable oil



chicken

Which of these foods is the best source of:

fibre? .....

calcium? .....

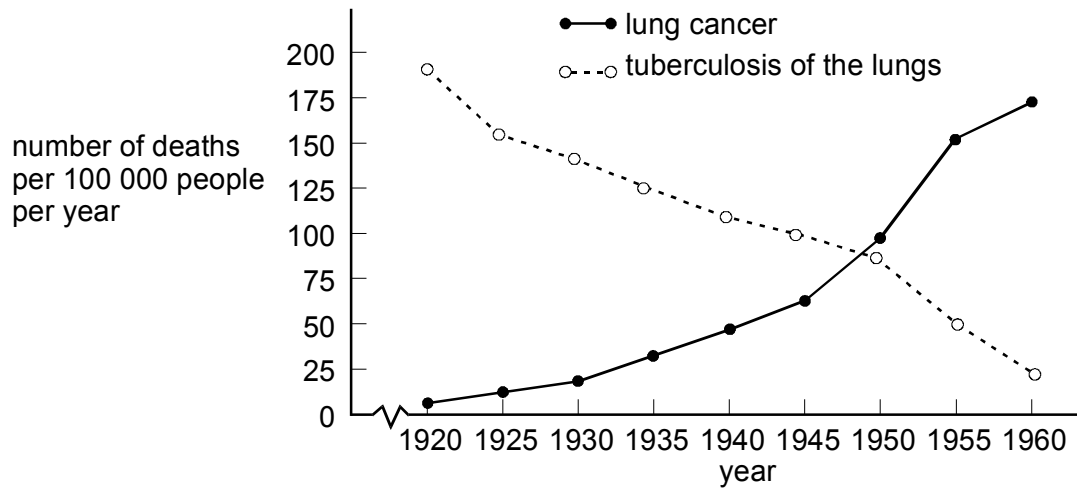
protein? .....

3 marks

Maximum 7 marks

**Question 2:**

(a) The graphs show the number of deaths from lung cancer and from tuberculosis of the lungs, in England and Wales, between 1920 and 1960.



(i) Between which two dates on the graph did the number of deaths from lung cancer rise fastest?

..... and .....

1 mark

(ii) Lung cancer may be caused by cigarette smoking.

What substance in cigarette smoke causes lung cancer?

.....

1 mark

(b) The number of deaths from tuberculosis of the lungs went down because of better medical treatment and preventive medicine.

What type of treatment is given to young people nowadays to prevent them from getting tuberculosis?

.....  
 .....

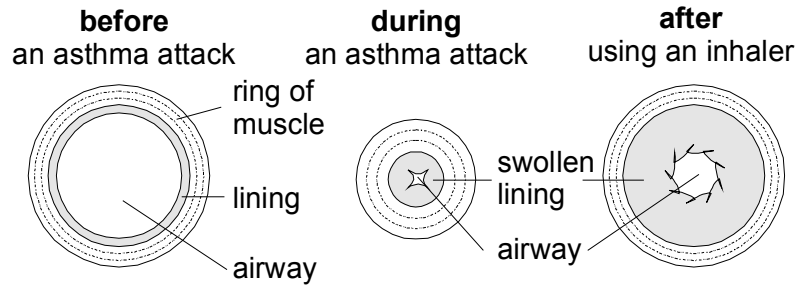
1 mark

Maximum 3 marks

**Question 3:**

A person who has an asthma attack finds it difficult to breathe. An inhaler helps the person breathe more easily.

The diagrams show a cross section of one of the small tubes (bronchioles) in the lungs.



Use the information above to help you answer the following questions.

(a) Describe the way the airway changes when the inhaler is used, and how this change makes it easier to breathe.

.....

.....

.....

2 marks

(b) The wall of the tube contains a ring of muscle. During an asthma attack, this muscle contracts and the airway becomes narrower. How does using the inhaler affect this muscle?

.....

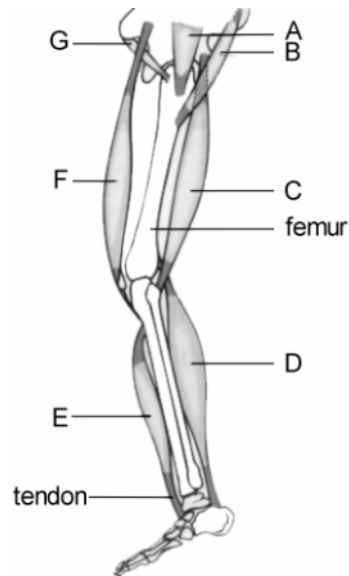
.....

1 mark

Maximum 3 marks

**Question 4:**

(a) Diagram 1 is a simplified drawing of bones and muscles in a left leg viewed from the outer side.



(i) Muscle A contracts. What effect does this have on the leg?

.....  
.....

1 mark

(ii) Muscles are found in antagonistic pairs. Write the letters of the pair of muscles which control the bending and straightening of the leg at the knee.

.....

1 mark

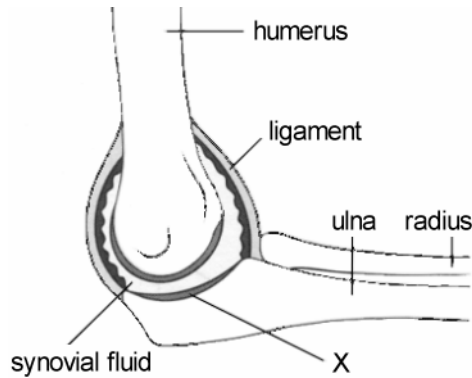
(iii) When one muscle of an antagonistic pair contracts the other muscle does not relax completely, but maintains some tension.

What is the advantage of maintaining tension in both muscles.

.....  
.....

1 mark

(b) Diagram 2 shows the elbow joint. Tissue X covers the ends of the bones at the joint.



(i) Give the name of tissue X. ....

1 mark

(ii) Osteoarthritis is a very painful condition. In the joints of people with osteoarthritis small pieces of tissue X break off. Suggest **two** effects this could have on the joint.

.....  
 .....  
 .....

2 marks

(c) Tendons are shown in diagram 1 and ligaments are shown in diagram 2. Ligaments can stretch much more than tendons.

(i) Explain why ligaments at the elbow need to stretch.

.....  
 .....

1 mark

(ii) Explain why it is necessary that tendons hardly stretch at all when a muscle contracts.

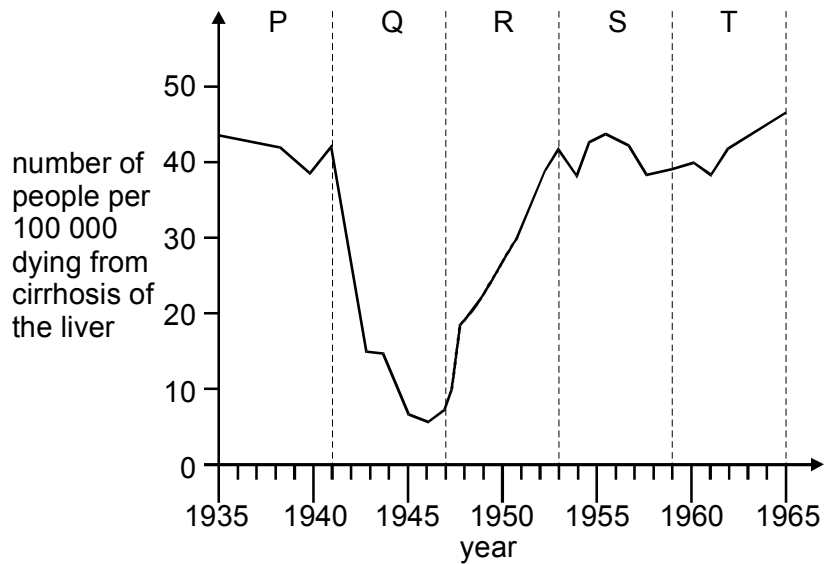
.....  
 .....

1 mark

Maximum 8 marks

**Question 5:**

(a) Drinking large amounts of alcohol every day can damage the liver. The type of damage is called cirrhosis, and it can kill a person quickly. The graph below shows the number of people dying from cirrhosis of the liver, in Paris, between 1935 and 1965.



During which period of time, P, Q, R, S or T, was it difficult to get alcohol?

.....

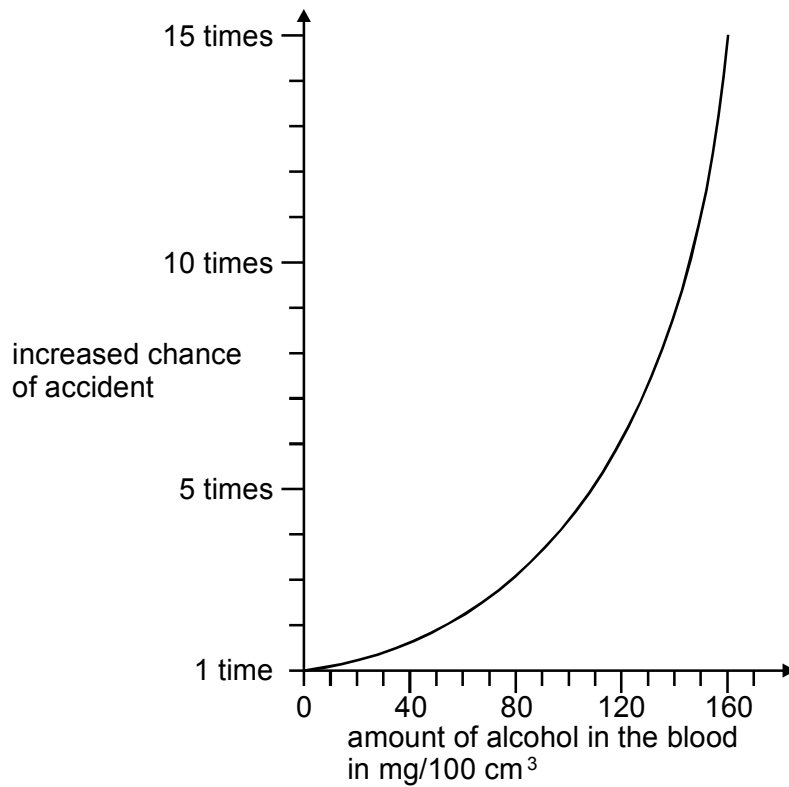
1 mark

(b) Alcohol is a drug. Which property makes alcohol a drug? Tick the correct box.

- It is soluble in water.
- It is a chemical.
- It can provide energy.
- It affects the nervous system.

1 mark

(c) Look at the graph below.



(i) Using the graph, describe how increasing the amount of alcohol in the blood affects the chance of having an accident.

.....  
.....  
.....  
.....

2 marks

(ii) Which of the following statements could be used to explain why alcohol in the blood could cause accidents?

Tick the correct box.

Alcohol cools the body.

Alcohol increases the time a person takes to react.

Alcohol is a stimulant.

Alcohol makes a person happy.

1 mark

Maximum 5 marks