

INSTRUCTIONS

Use black ink. You can use an HB pencil, but only for graphs and diagrams.

Write your answer to each question in the space provided. If you need extra space use the lined pages at the end of this booklet. The question numbers must be clearly shown.

Answer ALL the questions.

Where appropriate, your answer should be supported with working. Marks might be given for using a correct method, even if your answer is wrong.

INFORMATION

The total mark for this paper is 70.

The marks for each question are shown in brackets [].

Quality of written communication will be assessed in questions marked with an asterisk (*).

ADVICE

Read each question carefully before you start your answer.

SECTION A

Put a tick (✓) in the box next to the **ONE** correct answer for each question.

1 Which ONE of these describes the function of platelets? [1]

(a) Aid clotting of blood

☐

(b) Carry oxygen

☐

(c) Fight infections

☐

(d) Transport nutrients

☐

2 Which type of bone are the phalanges? [1]

(a) Flat

☐

(b) Irregular

☐

(c) Long

☐

(d) Short

☐

3 Which ONE of these is a typical value for an untrained individual's stroke volume at rest? [1]

(a) 7 ml

☐

(b) 70 ml

☐

(c) 700 ml

☐

(d) 7000 ml

☐

4 Which muscle contracts to cause FLEXION of the vertebral column? [1]

(a) Erector spinae

☐

(b) Pronator teres

☐

(c) Rectus abdominus

☐

(d) Supinator

☐

5 Which pair of bones are part of the AXIAL skeleton? [1]

(a) Cranium and clavicle

☐

(b) Cranium and sacrum

☐

(c) Sacrum and scapula

☐

(d) Scapula and clavicle

☐

6 Which ONE of these is a long-term effect of exercise on the MUSCULAR system? [1]

(a) Improved storage of lactic acid

☐

(b) Increased minute ventilation

☐

(c) Increased resistance to fatigue

☐

(d) Increased stroke volume

☐

7 Which of these is an example of HORIZONTAL ABDUCTION? [1]

(a) Performing lunges during a warm-up

☐

(b) Preparing to play a forehand drive shot in tennis

☐

(c) The downward phase of a biceps curl

☐

(d) Turning the head to breathe when swimming

☐

8 What is the alternative name for cartilaginous joints?

_____ [1]

9 Describe the role of the aorta.

_____ [1]

10 Other than carbohydrates, name ONE TYPE of food fuel for the AEROBIC energy system.

_____ [1]

SECTION B

11

- (a) Shape, support and movement are three functions of the skeleton.

Name TWO other functions of the skeleton.

1 _____

2 _____

[2]

- (b) Explain how ligaments provide stability and mobility at a joint.

Stability _____

Mobility _____

[2]

12 Regular training can have both positive and negative long-term effects.

(a) Describe TWO POSITIVE long-term effects of regular training on the SKELETAL system.

1 _____

2 _____

[2]

(b) Describe ONE NEGATIVE long-term effect of regular training on the SKELETAL system.

_____ **[1]**

- 13 The image opposite shows the major muscles of the upper leg viewed from both the front and back. Two muscles have been named.**

Name the muscles labelled A, B, C and D.

A _____

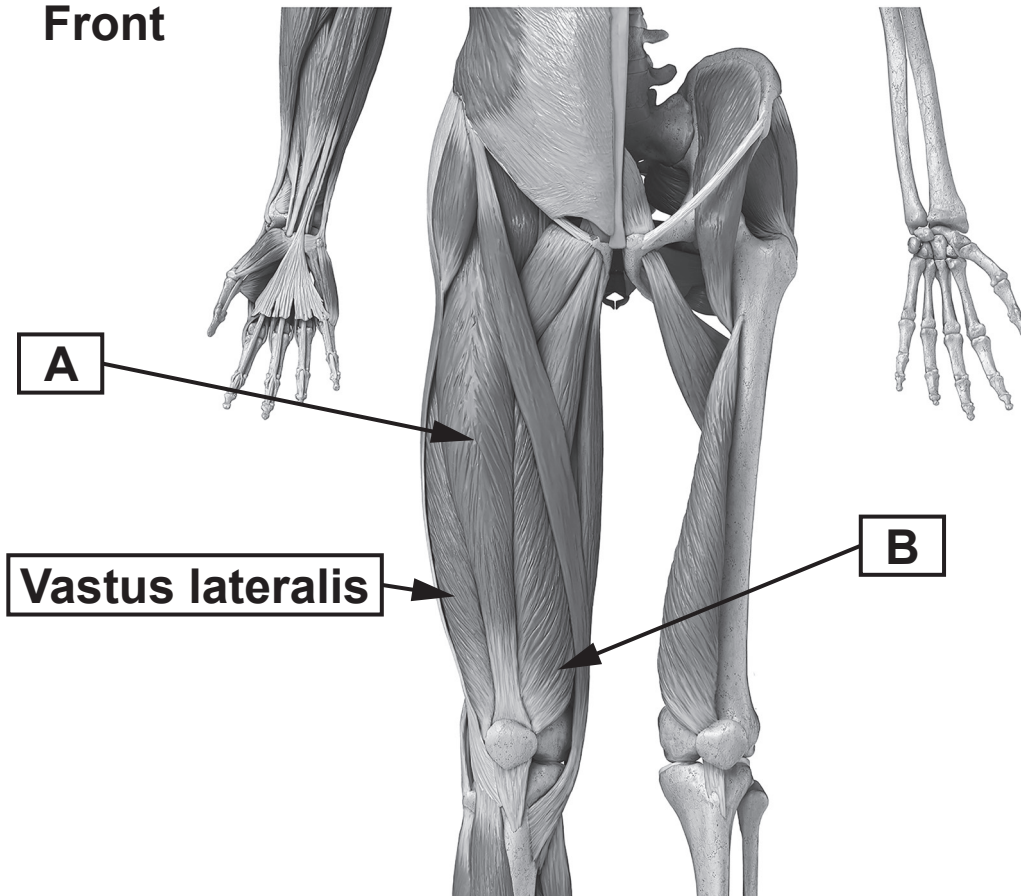
B _____

C _____

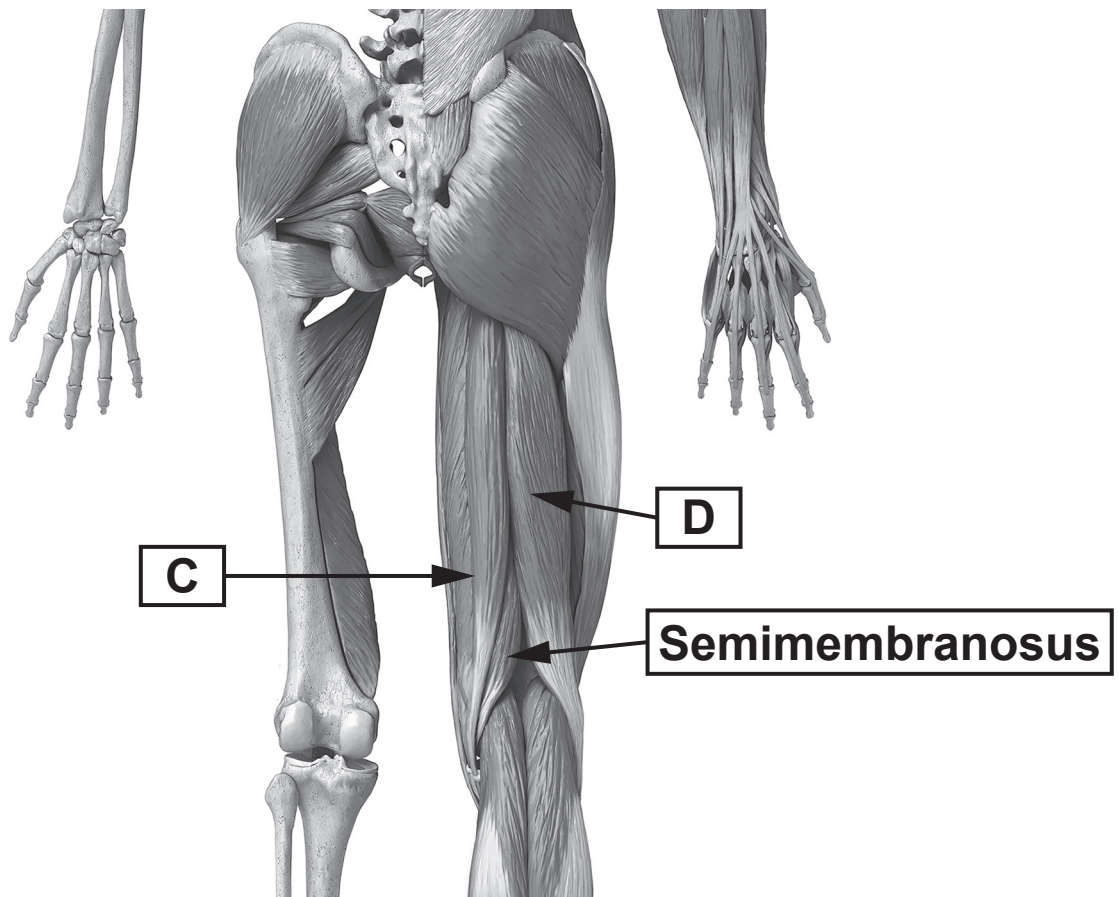
D _____

[4]

Front



Back



14 Explain how the mix of muscle fibre types used during exercise changes as intensity increases.

[3]

15 As blood flows through the heart it passes through various structures.

(a) Fill in the spaces to name the chamber, valves and blood vessel that blood passes through between the right atrium and the lungs. [4]

RIGHT ATRIUM



_____ **(valve)**



_____ **(chamber)**



_____ **(valve)**



_____ **blood vessel)**



LUNGS

(b) Describe the role of valves in the heart.

_____ **[1]**

16

(a) Define these terms:

Heart rate _____

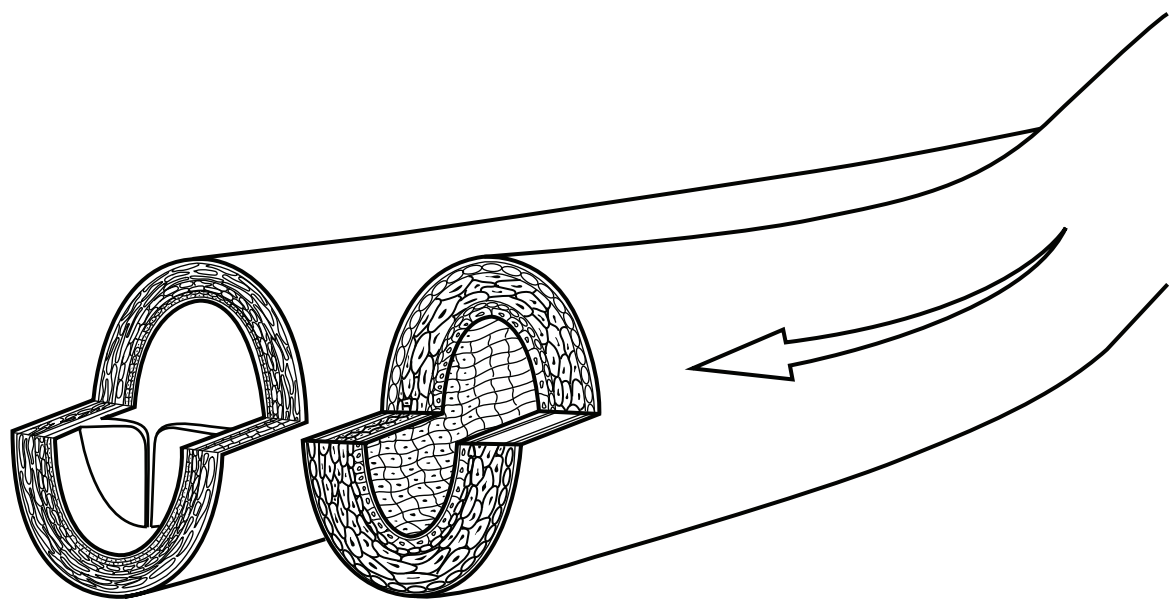
Cardiac output _____

[2]

(b) Explain how heart rate and cardiac output increase during exercise.

_____ **[4]**

17 The image below shows a vein and an artery.



Describe **THREE** differences between arteries and veins.

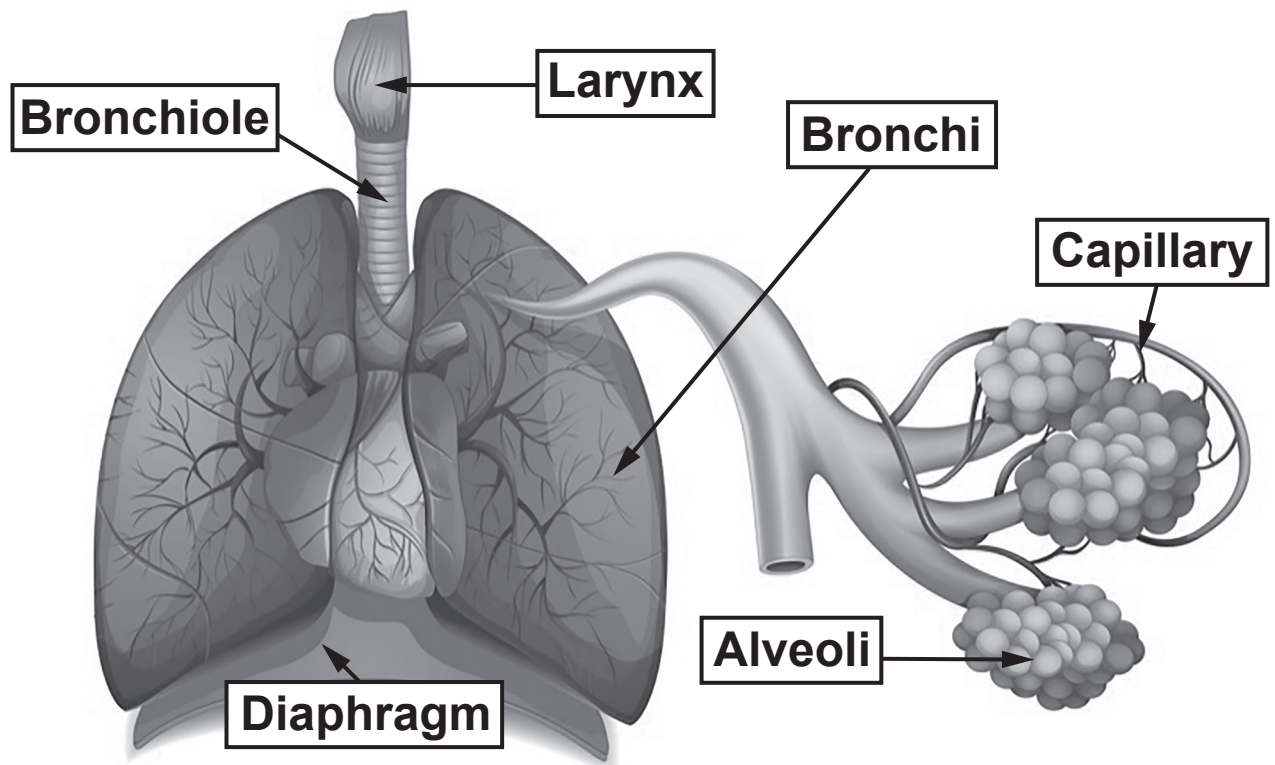
1 _____

2 _____

3 _____

[3]

- 18 The image below shows structures of the lungs. TWO structures are labelled INCORRECTLY.



- (a) Identify which TWO structures are labelled INCORRECTLY.

Give the CORRECT name for each of these structures. [4]

Incorrect label _____

Correct name _____

Incorrect label _____

Correct name _____

(b) Describe how the mechanics of breathing cause INSPIRATION at rest.

[4]

(c) Describe the role of the rectus abdominus as a respiratory muscle during exercise.

[2]

19 Fill in the paragraph to describe gaseous exchange at the alveoli. [7]

In the alveoli the partial pressure of oxygen is _____ and the partial pressure of carbon dioxide is _____ .

In the capillaries the partial pressure of oxygen is _____ and the partial pressure of carbon dioxide is _____ .

The difference between the pressures of gases is known as a diffusion _____ .

Gases move from an area of _____ pressure to an area of _____ pressure.

The greater the difference in pressures, the _____ the rate of gaseous exchange.

20

(a) Name the TWO ANAEROBIC energy systems.

1 _____

2 _____ [2]

(b) State the TWO by-products of the AEROBIC system.

1 _____

2 _____ [2]

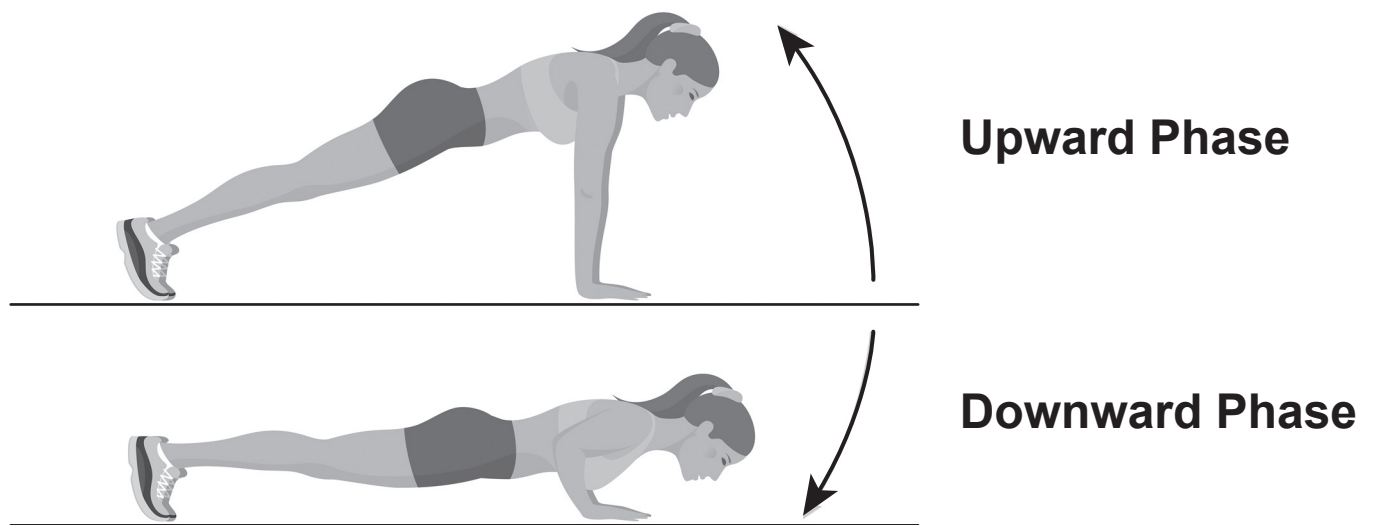
(c) Two factors determine which energy system is used.
One factor is DURATION of exercise.

What is the other factor?

_____ [1]

SECTION C

21* The image shows the performance of a press up.



Analyse the movements of the elbow joint during BOTH PHASES of the press up.

Your answer should include:

Type of joint

Articulating bones

Main muscles acting and their roles in the movements. [10]

[illegible]

[illegible]

END OF QUESTION PAPER

EXTRA ANSWER SPACE

If you need extra space use these lined pages. You must write the question numbers clearly in the margin.



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