

## NCFE Level 1/2 Technical Award in Health and Fitness (603/2650/5)

Unit 01 Introduction to body systems and principles of training in health and fitness

Paper number: **Past Paper**  
Assessment date: **Monday 27 June 2022**

Time allowed: **1 hour 30 minutes**  
Time: **9.00am – 10.30am**

### Learner instructions

- Use black or blue ink.
- Answer **all** questions.
- Read each question carefully.
- You **must** write your responses in the spaces provided.
- You may do rough work in this answer book. Cross through any work you do not wish to be marked.
- If you use a supplementary answer booklet, you must add your learner name, learner number and centre number to the front cover of the booklet. Insert your supplementary answer booklet inside this question paper at the end of your test.
- All of the work you submit **must** be your own.

### Learner information

- The marks available for each question are shown in brackets.
- The maximum mark for this paper is 80.
- You may use a calculator.

**Do not turn over until the invigilator tells you to do so.**

**Please complete / check your details below**

Learner Name:

Centre Name:

Learner Number:

Centre Number:



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## Section 1

This section has a possible 8 marks.

You should spend about 10 minutes on this section.

Answer **all** questions in the spaces provided.

- 1 Which **one** of the following regions of the spine is positioned directly **above** the lumbar region?

[1 mark]

- A Cervical
- B Coccyx
- C Sacrum
- D Thoracic

Answer \_\_\_\_\_

- 2 In the pathway of air through the respiratory system, which structure comes after the pharynx when breathing in?

[1 mark]

- A Larynx
- B Mouth
- C Nose
- D Trachea

Answer \_\_\_\_\_



3 What is tidal volume?

[1 mark]

- A The amount of air left in the lungs following a maximal exhalation
- B The amount of air that enters the lungs during normal inspiration at rest
- C The maximum amount of air that can be exhaled after taking the deepest inspiration
- D The maximum amount of air inhaled when doing exercise

Answer \_\_\_\_\_

4 Which **one** of the following is associated with a thin body shape?

[1 mark]

- A Ectomorph
- B Endomorph
- C Mesomorph

Answer \_\_\_\_\_

5 Which **one** of the following is a by-product of the body using the anaerobic energy system?

[1 mark]

- A Carbon dioxide
- B Lactic acid
- C Oxygen
- D Water

Answer \_\_\_\_\_



6 Which **one** of the following occurs when breathing in?

[1 mark]

- A The chest contracts and the diaphragm contracts
- B The chest expands and the diaphragm contracts
- C The diaphragm relaxes and the chest contracts
- D The diaphragm relaxes and the chest expands

Answer \_\_\_\_\_

7 Which **one** of the following is a characteristic of Type 2 muscle fibres?

[1 mark]

- A They produce fast contractions
- B They are red in colour
- C They are resistant to fatigue
- D They need a rich supply of oxygen

Answer \_\_\_\_\_

8 Which **one** of the following receives deoxygenated blood from the right ventricle?

[1 mark]

- A Aorta
- B Left atrium
- C Pulmonary artery
- D Right atrium

Answer \_\_\_\_\_



**Section 2**

This section has a possible 51 marks.

You should spend about 50 minutes on this section.

Answer **all** questions in the spaces provided.

**9 (a)** Name **one** bone in the axial skeleton.

[1 mark]

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**9 (b)** Irregular bones are a type of bone.

Identify **two other** types of bone **and** state their primary function.

[4 marks]

Type of bone 1 \_\_\_\_\_

Primary function \_\_\_\_\_

Type of bone 2 \_\_\_\_\_

Primary function \_\_\_\_\_

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**Please turn over for the next question.**



10 (a) Give the meaning of the term 'joint'.

[1 mark]

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10 (b) Fixed joints are a type of joint.

Identify **two other** types of joint **and** state a location in the body where **each** is found.

[4 marks]

Type of joint 1 \_\_\_\_\_

Location \_\_\_\_\_

Type of joint 2 \_\_\_\_\_

Location \_\_\_\_\_

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10 (c)

Figure 1

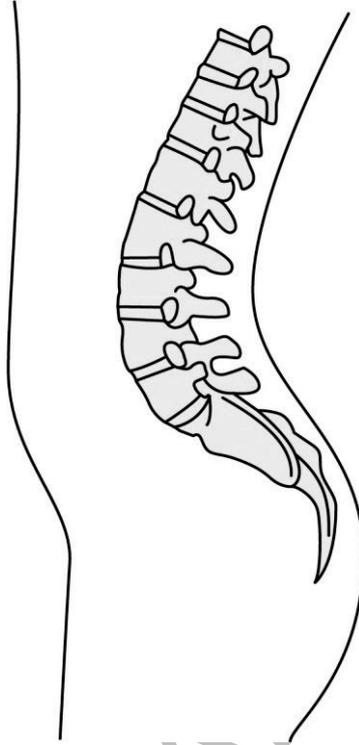


Figure 1 shows a diagram of the spine.

State the postural condition shown.

[1 mark]

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Figure 2

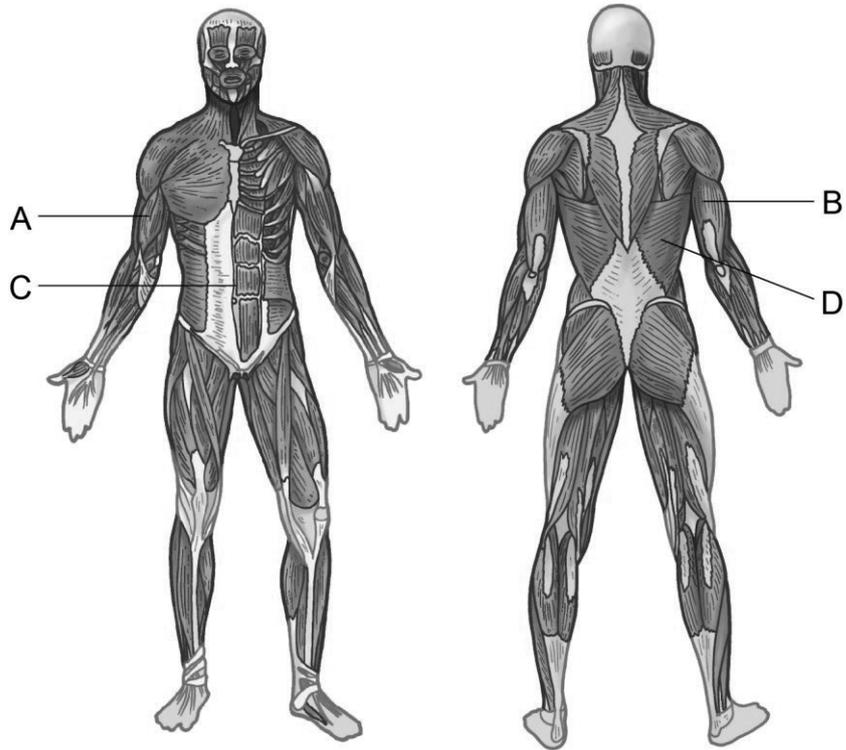


Figure 2 shows muscles in the human body.

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

[4 marks]

- A \_\_\_\_\_
- B \_\_\_\_\_
- C \_\_\_\_\_
- D \_\_\_\_\_

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**13** State **two** types of muscle **and** explain how **each** type helps an individual doing health and fitness activities. **[4 marks]**

Type of muscle 1 \_\_\_\_\_

Explanation \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Type of muscle 2 \_\_\_\_\_

Explanation \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**14** Explain how the structure of capillaries helps them perform their function. **[4 marks]**

\_\_\_\_\_

\_\_\_\_\_

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**15** Analyse how the vascular shunt helps an individual taking part in health and fitness activities.

**[4 marks]**

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**16** Describe the relationship between stroke volume, heart rate, and cardiac output during exercise.

**[4 marks]**

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**17 (a)** Marco has blood pressure of 140/100mmHg.

State Marco's systolic and diastolic blood pressures.

[2 marks]

Systolic \_\_\_\_\_

Diastolic \_\_\_\_\_

**17 (b)** Identify where Marco's blood pressure is in relation to the ideal range.

[1 mark]

\_\_\_\_\_  
\_\_\_\_\_

**17 (c)** Identify **and** explain **two** factors that could have affected Marco's blood pressure.

[4 marks]

Factor 1 \_\_\_\_\_

Explanation \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Factor 2 \_\_\_\_\_

Explanation \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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**18 (a)** Exercise affects breathing rate and hydration levels.  
Complete **Table 2** by identifying the short-term effects.  
Explain why these effects occur.

[4 marks]

**Table 2**

	<b>Short-term effect of exercise.</b>	<b>Why this short-term effect occurs?</b>
<b>Breathing rate</b>		
<b>Hydration levels</b>		

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**18 (b)** Explain **four** possible long-term effects on the body if an individual jogs two miles five times per week for a period of three months.

**[4 marks]**

1 \_\_\_\_\_

\_\_\_\_\_

2 \_\_\_\_\_

\_\_\_\_\_

3 \_\_\_\_\_

\_\_\_\_\_

4 \_\_\_\_\_

\_\_\_\_\_

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Figure 4

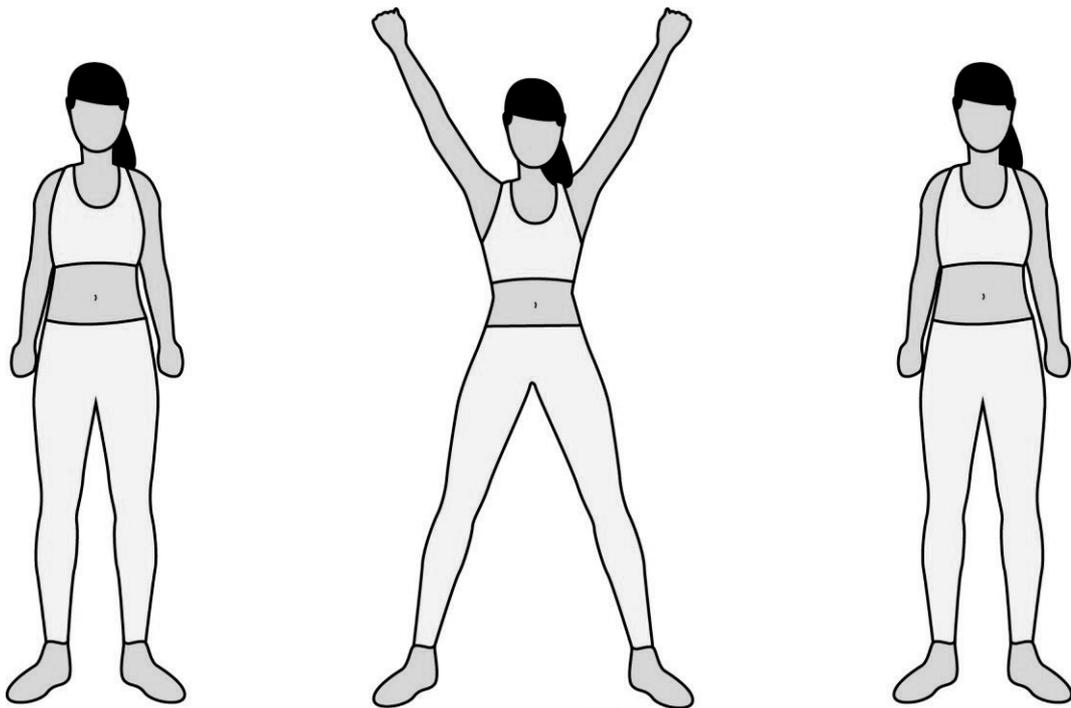


Figure 4 shows an individual completing a star jump.

Analyse the different joint actions that enable the individual to complete the star jump effectively.

[6 marks]

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To be completed by the examiner			
Question	Mark	Question	Mark
1		12	
2		13	
3		14	
4		15	
5		16	
6		17 (a)	
7		17 (b)	
8		17 (c)	
9 (a)		18 (a)	
9 (b)		18 (b)	
10 (a)		19	
10 (b)		20	
10 (c)		21	
11		TOTAL MARK	

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