

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**

Time allowed: **1 hour 30 minutes**

Assessment date: **Wednesday 16 November 2022**

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 thoracic region?

[1 mark]

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

Answer _____

- 2 Which **one** of the following occurs during exhalation?

[1 mark]

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

Answer _____



3 Which **one** of the following muscles is closest to the foot in the human body? [1 mark]

- A Deltoid
- B Gluteus Maximus
- C Hip flexors
- D Soleus

Answer _____

4 Which **one** of the following blood vessels surround the alveoli in the lungs? [1 mark]

- A Arteries
- B Capillaries
- C Veins

Answer _____

5 Which **one** of the following comes **before** the larynx in the pathway of air through the respiratory system during inspiration? [1 mark]

- A Bronchi
- B Bronchioles
- C Pharynx
- D Trachea

Answer _____



6 Which **one** of the following occurs during vasodilation?

[1 mark]

- A Narrowing of the blood vessels
- B Narrowing of the lungs
- C Widening of the blood vessels
- D Widening of the lungs

Answer _____

7 Which **one** of the following is in the **ideal** range of blood pressure?

[1 mark]

- A 80/50mmhg
- B 110/80mmhg
- C 130/80mmhg
- D 140/90mmhg

Answer _____

8 Lily has predicted that her maximum heart rate (MHR) is 179.

What age is Lily?

[1 mark]

- A 21
- B 29
- C 41
- D 49

Answer _____



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Please turn over for Section 2.**

Past Paper



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 **two** bones that are in the appendicular skeleton.

[2 marks]

1 _____

2 _____

9 (b) Long bones are one type of bone in the body.

State **three other** types of bones.

[3 marks]

1 _____

2 _____

3 _____

Past Paper



9 (c)

Figure 1

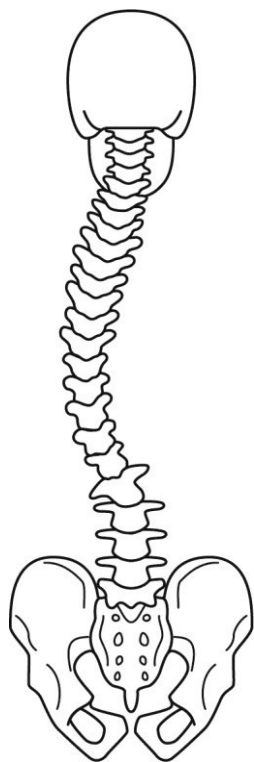


Figure 1 shows a diagram of the spine.

State the postural condition shown.

[1 mark]



10 (a) Identify a location in the body where **each** of the following types of joints are found:

1. gliding
2. saddle
3. ball and socket.

[3 marks]

1. Gliding
example

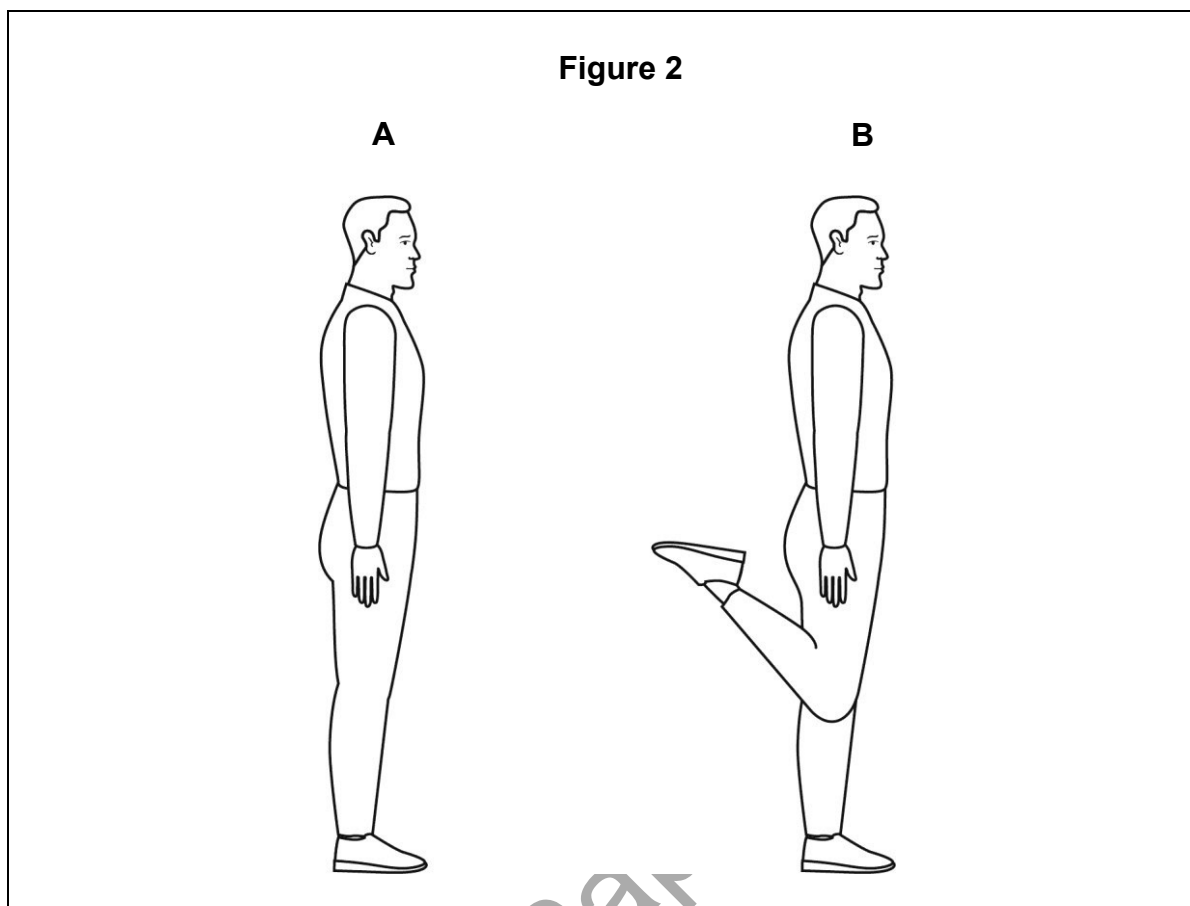
2. Saddle
example

3. Ball and
socket example

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10 (b)



Identify the joint action taking place at the knee from position **A** to **B** in **Figure 2**.
[1 mark]

10 (c) Explain how the muscles help bones to produce the movement **A** to **B** in **Figure 2**.
[3 marks]



- 11 (a)** State **one** factor that can affect blood pressure **and** explain how the factor could affect the performance of an individual in health and fitness activities. **[2 marks]**

Factor _____

Explanation _____

- 11 (b)** **Table 1** shows a type of muscle contraction.

Complete the table to show **two other** types of muscle contraction.

Give an example **and** justification for each.

[6 marks]

Table 1

Muscle contraction.	Example of physical action when this occurs.	Justification.
Concentric	Bicep curl	The bicep muscle shortens as it contracts to bend the elbow.



12 (a) Identify the type of muscle strength a performer would need to row on a rowing machine for 10 minutes?

Justify your choice.

[3 marks]

Type of muscle strength

Justification

Please turn over for the next question.

Past Paper



12 (b) Define **each** of the following components of skill-related fitness **and** give **one** example of when you would use each in a health and fitness activity:

1. agility
2. coordination
3. speed.

[6 marks]

1. Definition of
agility

Example

2. Definition of
coordination

Example

3. Definition of
speed

Example

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- 13** Identify a health and fitness activity that would be suitable for Type 1 slow twitch muscle fibres.

Justify your choice.

[3 marks]

Health and fitness
activity

Justification

- 14 (a)** Define heart rate **and** stroke volume.

[2 marks]

Definition of
heart rate

Definition of
stroke volume

- 14 (b)** Name **three** structures of the heart where oxygenated blood can be found.

[3 marks]

Structure 1

Structure 2

Structure 3



15 Reversibility is a principle of training.

State **three other** principles of training **and** explain how **each** of these can be applied in health-related fitness activities.

[6 marks]

Example 1

Explanation

Example 2

Explanation

Example 3

Explanation

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- 16** State which energy system will be the main energy provider when sprinting 100m.
Justify your choice. **[3 marks]**

Energy system _____

Justification _____

- 17** It is essential to be in good health if you want to take part in health and fitness activities.

Discuss whether you think this statement is true or false. **[4 marks]**



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[6 marks]

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Discuss how the long-term effects of exercise on the body may help the performance of an individual taking part in a marathon.

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This is the end of the external assessment.

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

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