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: **Wednesday 15 November 2023**
Time allowed: **1 hour 30 minutes**
Time: **9.00am – 10.30am**

Learner instructions

- Use black 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:

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 sacrum region?

[1 mark]

A Cervical

B Coccyx

C Lumbar

D Thoracic

Answer _____

2 Which type of joint is found at the hip?

[1 mark]

A Ball and socket

B Condyloid

C Gliding

D Saddle

Answer _____

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3 What is 'vital capacity'?

[1 mark]

A The amount of air left in the lungs following maximal exhalation

B The amount of air that enters the lungs during normal inspiration at rest

C The maximum amount of air you can exhale after taking the deepest inspiration

D The maximum amount of air you inhale when doing exercise

Answer _____

4 Which **one** of the following occurs during vasoconstriction?

[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 _____

5 What is 'stroke volume'?

[1 mark]

A The volume of blood that enters the heart during each contraction

B The volume of blood that leaves the heart during each contraction

C The volume of blood the heart can pump out

Answer _____

6 In the pathway of air through the respiratory system, which **one** of the following comes **after** the larynx when breathing in?

[1 mark]

A Mouth

B Nose

C Pharynx

D Trachea

Answer _____

7 Veins are one type of blood vessel in the human body.

Which **one** of the following statements is true?

[1 mark]

A Veins assist with gaseous exchange

B Veins contain valves to ensure blood flows in one direction

C Veins have elastic walls

D Veins have thick walls

Answer _____

8 Which **one** of the following activities would be best suited to Type 2 muscle fibres?

[1 mark]

A Cycling 10 miles

B Jogging for 15 minutes

C Sprinting for 20 metres

D Swimming 1500 metres

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

Figure 1

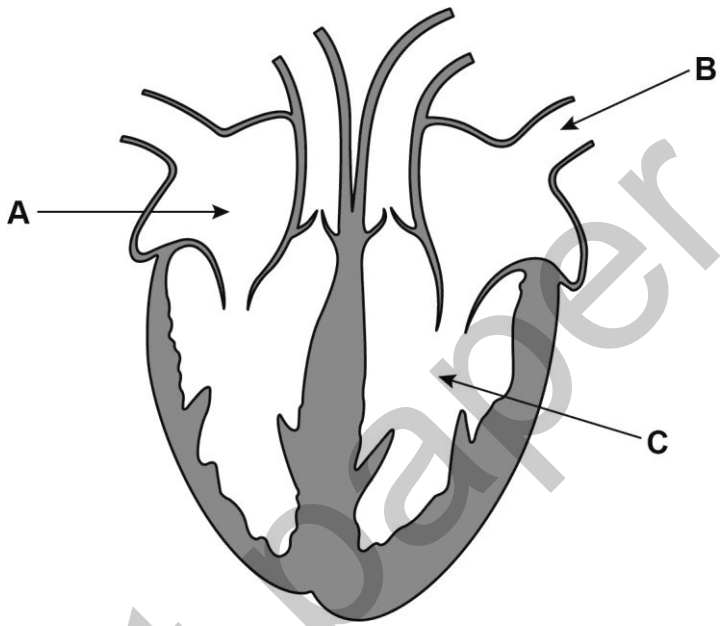

Figure 1 shows a cross section of the heart.

Identify the structures of the heart labelled **A**, **B** and **C** in **Figure 1.**

[3 marks]

A _____

B _____

C _____

10 (a) Give **one** example of **each** of the following types of bones:

1. flat
2. irregular
3. short.

[3 marks]

Flat _____

Irregular _____

Short _____

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10 (b)

Figure 2

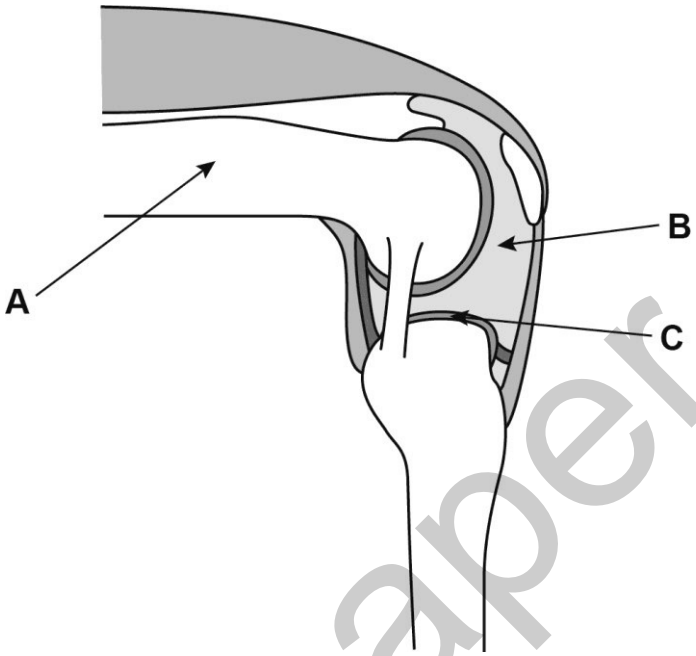

Figure 2 shows a knee joint.

Identify the structures of the knee joint labelled **A**, **B** and **C** in **Figure 2.**

[3 marks]

A _____

B _____

C _____

10 (c) Identify **one** type of movement that occurs at the knee joint.

Give **two** different examples from health and fitness activities of when this type of movement occurs.

[3 marks]

Movement _____

Example 1 _____

_____

Example 2 _____

_____

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11 (a)

Figure 3

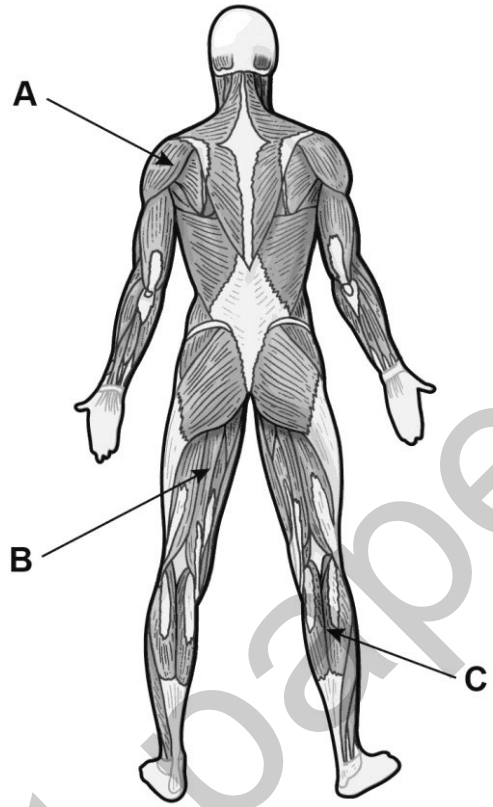

Figure 3 shows muscles in the human body.

Identify the muscles labelled **A**, **B** and **C** in **Figure 3.**

[3 marks]

A _____

B _____

C _____

11 (b) Skeletal muscle is a type of muscle in the body.

Name the **two other** types of muscles in the body.

Explain how their function in the body supports an individual participating in health and fitness activities.

[4 marks]

Muscle type 1 _____

Function _____

_____

Muscle type 2 _____

Function _____

_____

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

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

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

[6 marks]

Table 1

Muscle Contraction	Example of health and fitness activity	Justification
Eccentric.	Downward phase of a squat.	The quadriceps are contracting and lengthening to control the movement.

Please turn over for the next question.

12 Define the following components of fitness:

1. flexibility
2. muscular endurance
3. power.

Give **one** example of when you would use **each** in a health and fitness activity.

[6 marks]

1. Definition of flexibility _____

_____

Example _____

_____

2. Definition of muscular endurance _____

_____

Example _____

_____

3. Definition of power _____

_____

Example _____

_____

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13 Identify the type of muscular strength that is needed when completing a standing long jump.

Justify your choice.

[3 marks]

Type of muscular strength needed _____

_____

Justification _____

_____

_____

_____

14 State which energy system will be the main energy provider when swimming 800 m.

Justify your choice.

[3 marks]

Energy system _____

_____

Justification _____

_____

_____

_____

15 Identify a different health and fitness activity that each of the following body types may be suitable for:

1. ectomorph
2. endomorph
3. mesomorph.

Justify your choices.

[6 marks]

1. Ectomorph

Activity _____

Justification _____

_____

_____

2. Endomorph

Activity _____

Justification _____

_____

_____

3. Mesomorph

Activity _____

Justification _____

_____

_____

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16 An increase in flexibility and changing body shape are two long-term effects of exercise on the body.

Identify **two other** long-term effects of exercise on the body.

Explain how **each** long-term effect you have identified will help improve the performance of someone taking part in health and fitness activities.

[4 marks]

Effect 1 _____

Explanation _____

_____

_____

Effect 2 _____

Explanation _____

_____

_____

17 Discuss the importance of posture when taking part in health and fitness activities.

[4 marks]

_____

_____

_____

_____

_____

_____

_____

_____

Section 3

This section has a possible 21 marks.

You should spend about 30 minutes on this section.

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

18 Jacob can currently run 1 mile in 10 minutes.

Explain how Jacob could use the FITT (Frequency, Intensity, Time and Type) principles to try and run 1 mile in a quicker time.

[6 marks]

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19 Jessica has been to the doctor and her blood pressure has been measured at 150/100 mmHg.

Discuss whether this blood pressure level is healthy **and** give reasons why it may be at this level.

[6 marks]

20 Support is one function of the skeleton.

Analyse how the **other** functions of the skeletal system assist someone taking part in health and fitness activities.

[9 marks]

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This is the end of the external assessment.

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