

To be completed by the examiner	MARK
Section 1	
Section 2	
Section 3	
TOTAL MARK	

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: **SAMPLE**

Sample 2018

9.30am – 11.00 am

Time allowed: 1 hour 30 minutes

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.
- 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.

Please complete the details below clearly and in BLOCK CAPITALS.

Learner name _____

Centre name _____

Learner number

Centre number

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

Section 1

This section has a possible 8 marks.

We recommend that you spend 10 minutes on this section.

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

1 Which **one** of the following bones is located in the upper leg?

[1 mark]

- A Femur
- B Fibula
- C Radius
- D Tibia

Answer _____

2 What type of bone is the sternum?

[1 mark]

- A Flat
- B Irregular
- C Long
- D Short

Answer _____

3 Which **one** of the following is a long-term effect of health and fitness activities?

[1 mark]

- A Increased body temperature
- B Increased breathing rate
- C Increased flexibility
- D Increased heart rate

Answer _____

4 Which **one** of the following is a skill-related component of fitness? [1 mark]

- A Body composition
- B Cardiovascular endurance
- C Coordination
- D Flexibility

Answer _____

5 Which **one** of the following muscles causes extension at the knee? [1 mark]

- A Hamstrings
- B Latissimus Dorsi
- C Quadriceps
- D Trapezius

Answer _____

6 Noah is returning to training after an injury. Before his injury he could perform 20 squats in a row, on his return to training, he can perform 15 squats in a row.

Which **one** of the following principles of training has occurred? [1 mark]

- A Progression
- B Reversibility
- C Specificity
- D Tedium

Answer _____

7 Air flows through the **nose/mouth**, the **pharynx**, the **larynx** and then the... [1 mark]

- A Alveoli
- B Bronchi
- C Lungs
- D Trachea

Answer _____

8 Which **one** of the following muscles can be located in the lower leg? [1 mark]

- A Deltoid
- B Gluteus Maximus
- C Rectus Abdominus
- D Soleus

Answer _____

Please turn over for the next section.

Section 2

This section has a possible 51 marks.

We recommend that you spend 50 minutes on this section.

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

9 The human skeleton can be divided into two.

Name **two** bones that can be found in the axial skeleton.

[2 marks]

1 _____

2 _____

10 Identify and describe **two** functions of the skeletal system.

[4 marks]

1 _____

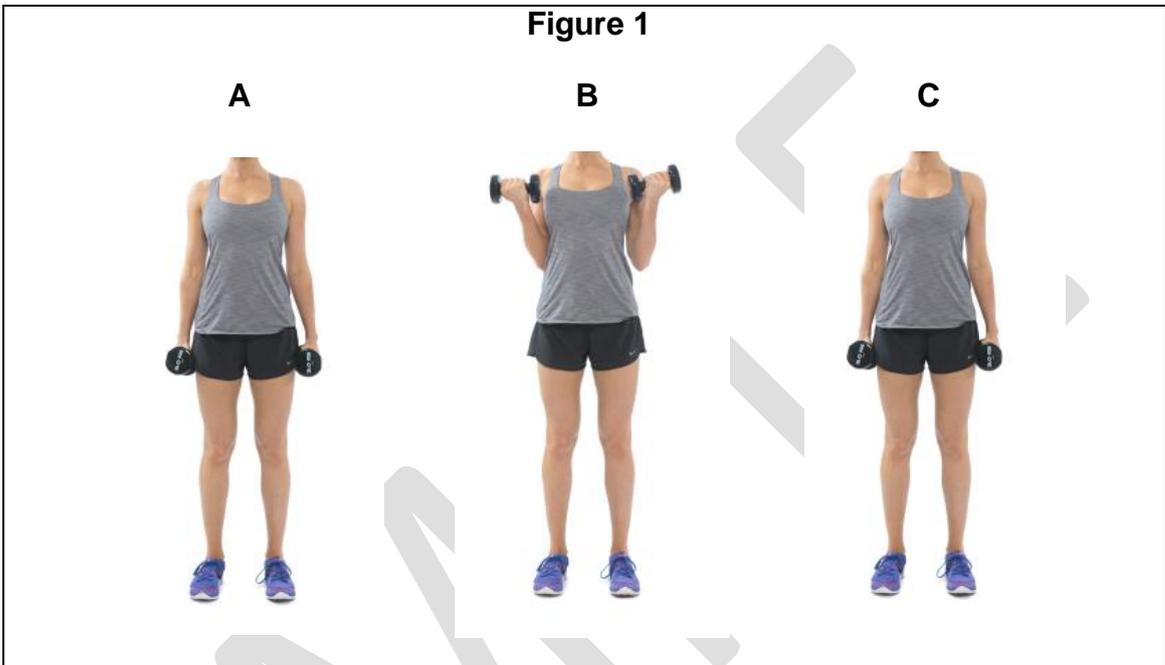
2 _____

Please turn over

11 (a) Define the term 'antagonist'.

[1 mark]

11 (b) Figure 1 shows an individual performing a bicep curl.



Using Figure 1, complete Table 1 by showing the **joint action** occurring at the elbow from position A to position B (raising) and from position B to position C (lowering) and the **agonist muscle** that causes this action.

[4 marks]

Table 1

	A to B	B to C
Joint action		
Agonist muscle		

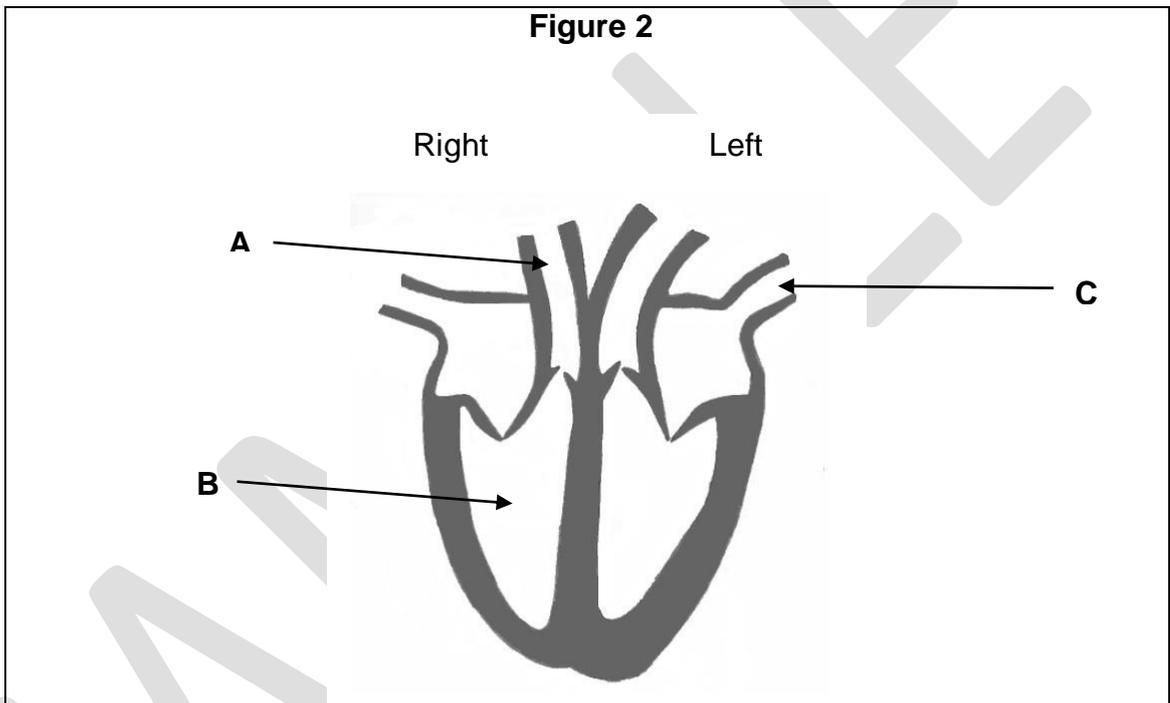
11 (c) Identify the type of muscle contraction occurring at the agonist from position **B** to position **C**. Justify your choice.

[2 marks]

Type of muscle contraction _____

Justification _____

12 **Figure 2** shows a cross section of the heart.



12 (a) Identify the structures of the heart labelled **A**, **B** and **C**.

[3 marks]

A _____

B _____

C _____

Please turn over

12 (b) Outline the structure of capillaries **and** explain how the structure helps them perform their function.

[4 marks]

13 **Figure 3** shows an individual performing a plank.



13 (a) Identify the type of muscular strength that is needed to perform a plank. Justify your choice.

[2 marks]

Type of muscular strength _____

Justification _____

13 (b) Define flexibility and muscular endurance **and** give **one** example of when you would use each in a health and fitness activity.

[4 marks]

Flexibility _____

Muscular endurance _____

14 Blood pressure is measured in millimetres of mercury (mmHg).

Table 2 shows blood pressure measurements for Chris, Oscar and Chloe.

Table 2

Chris	Oscar	Chloe
115/75 mmHg	145/95 mmHg	85/55 mmHg

14 (a) Analyse the data in **Table 2** to identify whose blood pressure is within the **ideal** range. Justify your choice.

[2 marks]

14 (b) Analyse **one** factor that could cause an individual's blood pressure classification to move from ideal to high.

[3 marks]

15 Lisa is 39 and has just started a health and fitness programme.

To improve her cardiovascular endurance, Lisa is going on a 20 minute run at a moderate pace, twice a week, for 6 weeks.

Her resting heart rate at the beginning of the health and fitness programme was 72 beats per minute (bpm).

15 (a) Calculate Lisa's maximal heart rate (MHR).

[3 marks]

15 (b) (i) Identify and briefly explain what will happen to Lisa's heart rate once she starts to run.

[2 marks]

15 (b) (ii) After completing her health and fitness programme, Lisa's resting heart rate is 68 beats per minute (bpm).

Identify and explain what has happened to Lisa's resting heart rate.

[3 marks]

15 (c) Is the energy produced for Lisa's 20 minute run aerobic **or** anaerobic? Justify your answer.

[3 marks]

15 (d) (i) Describe the **four** principles of FITT.

[4 marks]

Frequency _____

Intensity _____

Time _____

Type _____

15 (d) (ii) Describe how Lisa could use the principles of FITT to improve her health and fitness programme.

[4 marks]

Frequency _____

Intensity _____

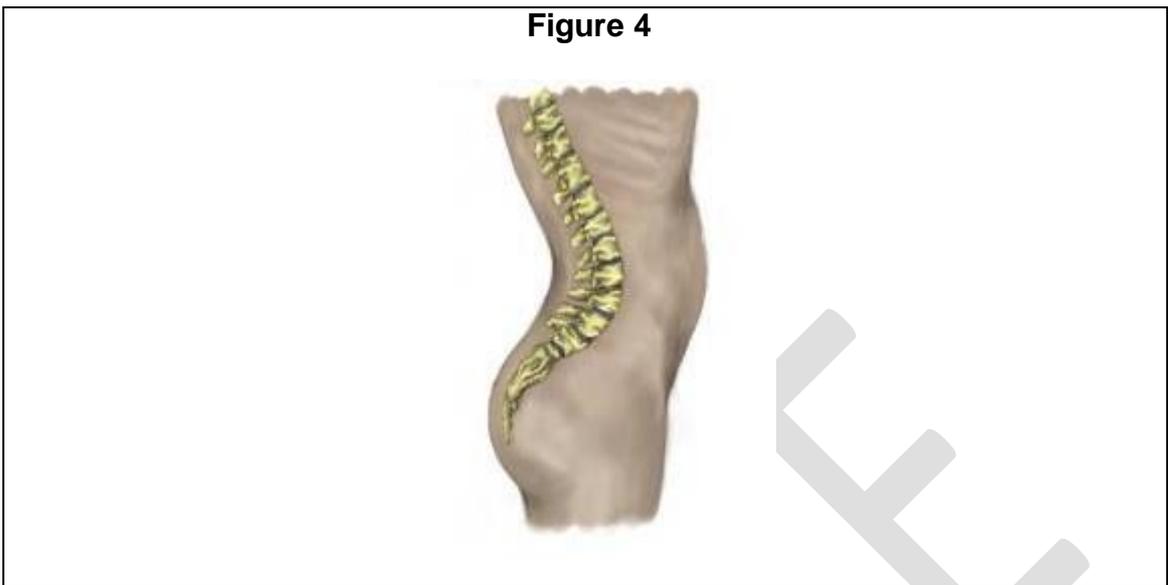
Time _____

Type _____

Please turn over

16

The individual in **Figure 4** has kyphosis of the spine.



Is this statement true **or** false?

[1 mark]

Answer _____

Please turn over for the next section.

