



# 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

Wednesday 11 March 2020 9.00 am–10.30 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

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

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

**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 bones is part of the axial skeleton?

[1 mark]

- A Carpal
- B Pelvis
- C Scapula
- D Sternum

Answer \_\_\_\_\_

2 Which **one** of the following statements best describes the term 'abduction' at a ball and socket joint?

[1 mark]

- A The movement of a limb away from the midline of the body
- B The movement of a limb in a complete circle
- C The movement of a limb towards the midline of the body
- D The movement of a limb which increases the angle of a joint

Answer \_\_\_\_\_

3 Which **one** of the following statements best describes eccentric muscle contraction?

[1 mark]

- A The muscle lengthens as it contracts
- B The muscle remains the same length as it contracts
- C The muscle shortens as it contracts

Answer \_\_\_\_\_

- 4 Following the pathway of air through the respiratory system, which structure is found after the larynx?

[1 mark]

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

Answer \_\_\_\_\_

- 5 What type of bones are vertebrae?

[1 mark]

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

Answer \_\_\_\_\_

- 6 Sebastian has predicted that his maximum heart rate (MHR) is 183.

What age is Sebastian likely to be?

[1 mark]

- A 17
- B 27
- C 37
- D 47

Answer \_\_\_\_\_

- 7 Sarah has been carrying out the same training session 3 times a week for 3 months. She has started to miss some of the training sessions due to not being motivated.

Which **one** of the following principles of training has occurred?

[1 mark]

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

Answer \_\_\_\_\_

- 8 Which **one** of the following would be in the ideal range of blood pressure?

[1 mark]

- A 70/60mmhg
- B 80/60mmhg
- C 100/70mmhg
- D 150/90mmhg

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.

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**9 (a)** Define the term rotation.

[1 mark]

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**9 (b)** Give an example of rotation.

[1 mark]

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**10** Synovial joints are a type of joint.

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

[4 marks]

Joint 1

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Joint 2

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11 (a)

Figure 1

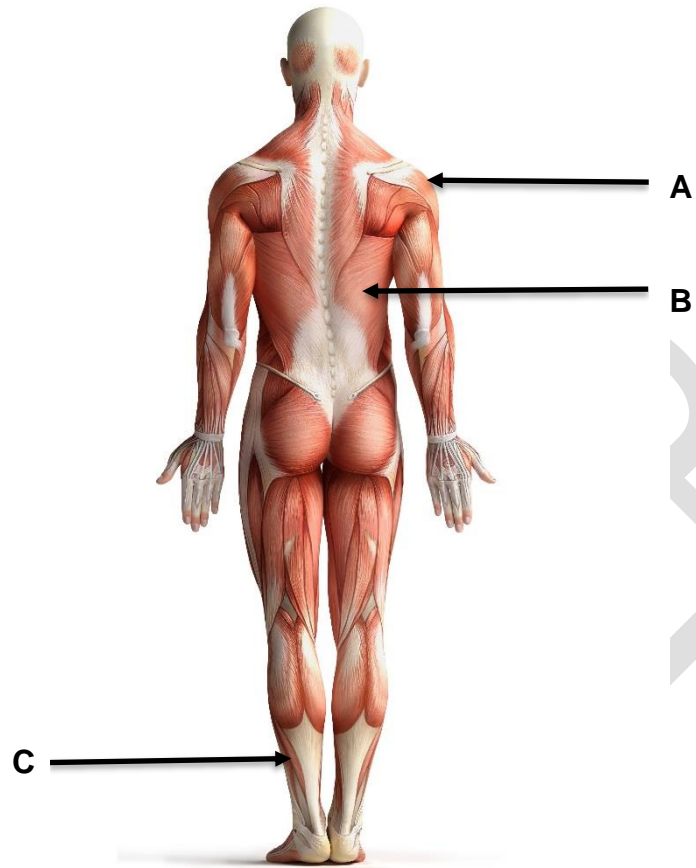


Figure 1 shows muscles in the human body.

Identify the muscles labelled **A**, **B** and **C** in **Figure 1**.

[3 marks]

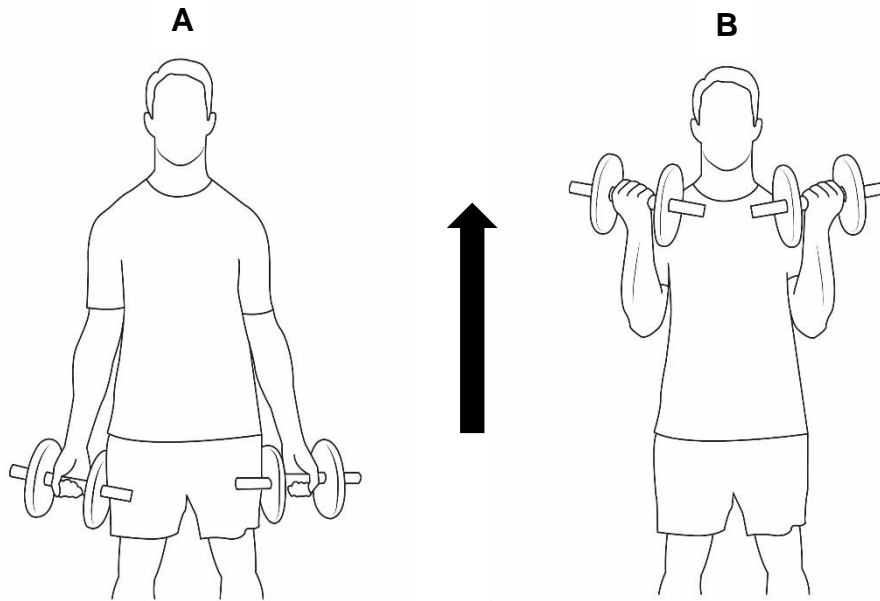
**A** \_\_\_\_\_

**B** \_\_\_\_\_

**C** \_\_\_\_\_

11 (b)

Figure 2



Explain how the muscles help bones to produce the movement **A to B** shown in **Figure 2**.

[4 marks]

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DO NOT WRITE IN THIS SPACE









14 (a)

Figure 4

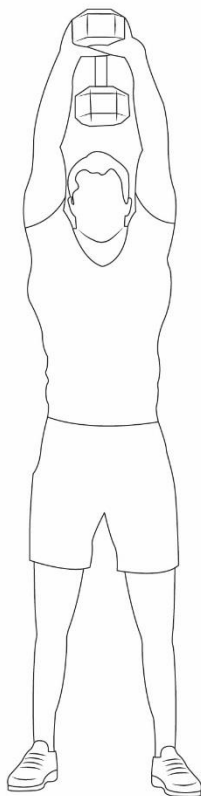


Figure 4 shows a heavy weight being held.

Identify the type of strength that is needed to hold the weight safely in this position.

Justify your choice.

[3 marks]

Type of Strength \_\_\_\_\_

Justification \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

DO NOT WRITE IN THIS SPACE

**14 (b)** Suggest a health and fitness activity that would be suited to the following energy systems:

- Aerobic
- Anaerobic

Explain your choices.

**[4 marks]**

Aerobic Activity \_\_\_\_\_

Explanation \_\_\_\_\_

\_\_\_\_\_

Anaerobic Activity \_\_\_\_\_

Explanation \_\_\_\_\_

\_\_\_\_\_

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

- Ectomorph
- Mesomorph

Justify your choices.

**[4 marks]**

Ectomorph \_\_\_\_\_

Justification \_\_\_\_\_

\_\_\_\_\_

Mesomorph \_\_\_\_\_

Justification \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

DO NOT WRITE IN THIS SPACE

**16 (a)** Define heart rate **and** cardiac output.

Explain how **each** helps an individual when they are performing health and fitness activities.

**[4 marks]**

Heart rate \_\_\_\_\_

Explanation \_\_\_\_\_

Cardiac output \_\_\_\_\_

Explanation \_\_\_\_\_

**16 (b)** At the start of a 6-month health and fitness training programme Jack's resting heart rate was 77 beats per minute (bpm). At the end of the 6-month programme his resting heart rate was 68 beats per minute (bpm).

Identify what has happened to Jack's resting heart rate **and** suggest a reason why this may have occurred.

**[2 marks]**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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





