

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	

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

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	

Section 1

This section has a possible 8 marks.

You should spend about 10 minutes on this section.

Ans

swer all	ques	stions in the spaces provided.	
1	Whi	ich one of the following bones is part of the axial skeleton?	[1 mark]
	A	Carpal	
	В	Pelvis	
	С	Scapula	
	D	Sternum	
	Ans	swer	
2		ich one of the following statements best describes the term 'abduction' and socket joint?	
			[1 mark]
	A	The movement of a limb away from the midline of the body	
	В	The movement of a limb in a complete circle	
	С	The movement of a limb towards the midline of the body	
	D	The movement of a limb which increases the angle of a joint	
	Ans	swer	
3		ich one of the following statements best describes eccentric muscle traction?	[4 a.ul-1
			[1 mark]
	Α	The muscle lengthens as it contracts	
	В	The muscle remains the same length as it contracts	
	С	The muscle shortens as it contracts	
	Ans	swer	

4	Follo	owing the pathway of air through the respiratory system, which structed after the larynx?	cture is
	ioui	id ditor the larytist.	[1 mark]
	Α	Mouth	
	В	Nose	
	С	Pharynx	
	D	Trachea	
	Ans	swer	
5	Wha	at type of bones are vertebrae?	[1 mark]
	A	Flat	
	В	Irregular	
	С	Long	
	D	Short	
	Ans	swer	
6	Seb	eastian has predicted that his maximum heart rate (MHR) is 183.	
	Wha	at age is Sebastian likely to be?	[1 mark]
	Α	17	
	В	27	
	C	37	
	D	47	
	Ans	swer	

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]

- Α Overload
- В Progression
- C Reversibility
- Tedium D

Answer

Which **one** of the following would be in the ideal range of blood pressure? [1 mark] 8

- Α 70/60mmhg
- В 80/60mmhg
- C 100/70mmhg
- 150/90mmhg D

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)	Define the term rotation.	[1 mark]
9 (b)	Give an example of rotation.	[1 mark]
10	Synovial joints are a type of joint.	
	Identify two other types of joint and state a location in the body found.	where they are
		[4 marks]
	Joint 1	
	Joint 2	

11 (a) Figure 1

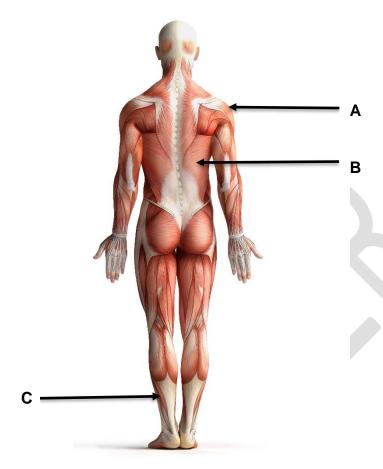


Figure 1 shows muscles in the human body.

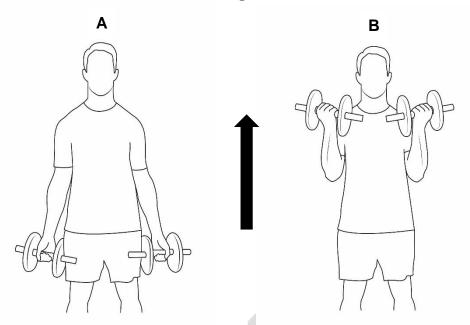
Identify the muscles labelled A, B and C in Figure 1.

[3 marks]

В

C





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

[4 marks]

11 (c)	Discuss why someone with a high percentage of Type 1 slow-twitch fibres would have an advantage when running a marathon.
	[4 marks]

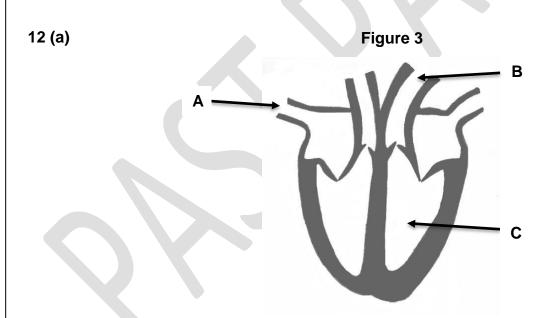


Figure 3 shows a cross section of the heart.

Identify the structures of the heart labelled A, B and C in Figure 3.

\$]	marks	[3	
\$]	marks	[3	

Α_	
В	
С	

12 (b)	Outline the structure of veins, explaining how it helps them to perform their function.
	[4 marks]
13 (a)	Define inspiration and exhalation.
	[2 marks]
	Inoniration
	Inspiration
	Exhalation

Please turn over for the next question.

	to help the breathing
	[4 mark
Describe the process of gaseous exchange.	
	[4 marl
	Explain how the diaphragm and intercostal muscles work process. Describe the process of gaseous exchange.

14 (a) Figure 4

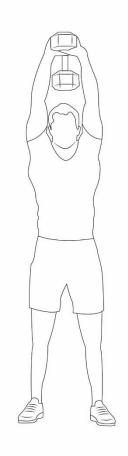


Figure 4 shows a heavy weight being held.

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

Justify your choice.

Saciny year energy	[3 marks]
Type of Strength	
Justification	

	Suggest a health and fitness activity that would be suited to the following energy systems:
•	Aerobic Anaerobic
ı	Explain your choices.
	[4 marks]
/	Aerobic Activity
E	Explanation
_	
_	Anaerobic Activity
	Explanation
_	
_	
ı	dentify a health and fitness activity that the following body types may be suitable
	or:
•	Ectomorph
•	Mesomorph
	Justify your choices. [4 marks]
	[entail #]
	Ectomorph
,	Ectomorph Justification
_	lustification
	lustification
_	lustification
- -	Justification
- -	Justification

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.

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.

As part of a fitness training programme Mia performs a timed sprint drill which requires her to go in and out of cones. To reduce her time, she is trying to improve her power.

mprove if Mia wants to be successful in reducing her time.	oneni io
mprovo minus manno to de cascoca minus cada ang men anno	[6 marks

18

nealth and fitness		[6 mark
		[o man

15

9	A reduced resting heart rate, muscle hypertrophy and changing body shape are all long-term effects of exercise on the body.		
	Discuss the ways that other long-term effects of exercise on the body will		
	improve the performance of an individual taking part in a five-mile run. [9 marks		

This is the end of the external assessment.