

Write your name here

Surname					Other names				
Centre Number					Learner Registration Number				
Pearson BTEC Level 3 Nationals Diploma									

Sport and Exercise Science

Unit 2: Functional Anatomy

Thursday 25 January 2018 – Afternoon Time: 1 hour 30 minutes	Paper Reference 31814H
--	----------------------------------

You do not need any other materials.	Total Marks
---	-------------

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and learner registration number.
- Answer **all** questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*

Information

- The total mark for this paper is 60.
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

P54138A

©2018 Pearson Education Ltd.

1/1/1/1/1/1/1/1




Pearson

Answer ALL questions. Write your answers in the spaces provided.

1 State **two** functions of the respiratory system.

- (i)
-
- (ii)
-

(Total for Question 1 = 2 marks)

2 Give the meaning of the following anatomical terms.

(a) posterior

(1)

(b) inferior.

(1)

(Total for Question 2 = 2 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



3 Describe the function of platelets.

.....

.....

.....

.....

(Total for Question 3 = 2 marks)

The skeletal system has many functions, including blood cell production, providing a supportive framework, storage of minerals, and protection.

4 Explain, using examples, **two other** functions of the skeletal system.

(i)

.....

.....

.....

(ii)

.....

.....

.....

(Total for Question 4 = 4 marks)



5 Explain the importance of the skeleton in red blood cell production.

.....
.....
.....
.....
.....
.....
.....
.....

(Total for Question 5 = 3 marks)

6 Describe the neural control of the cardiac cycle.

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

(Total for Question 6 = 5 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



The main function of a capillary is gaseous exchange.

7 Explain how **two** characteristics of a capillary are related to gaseous exchange.

(i)

.....

.....

.....

(ii)

.....

.....

.....

(Total for Question 7 = 4 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



Figure 1 shows the respiratory system.

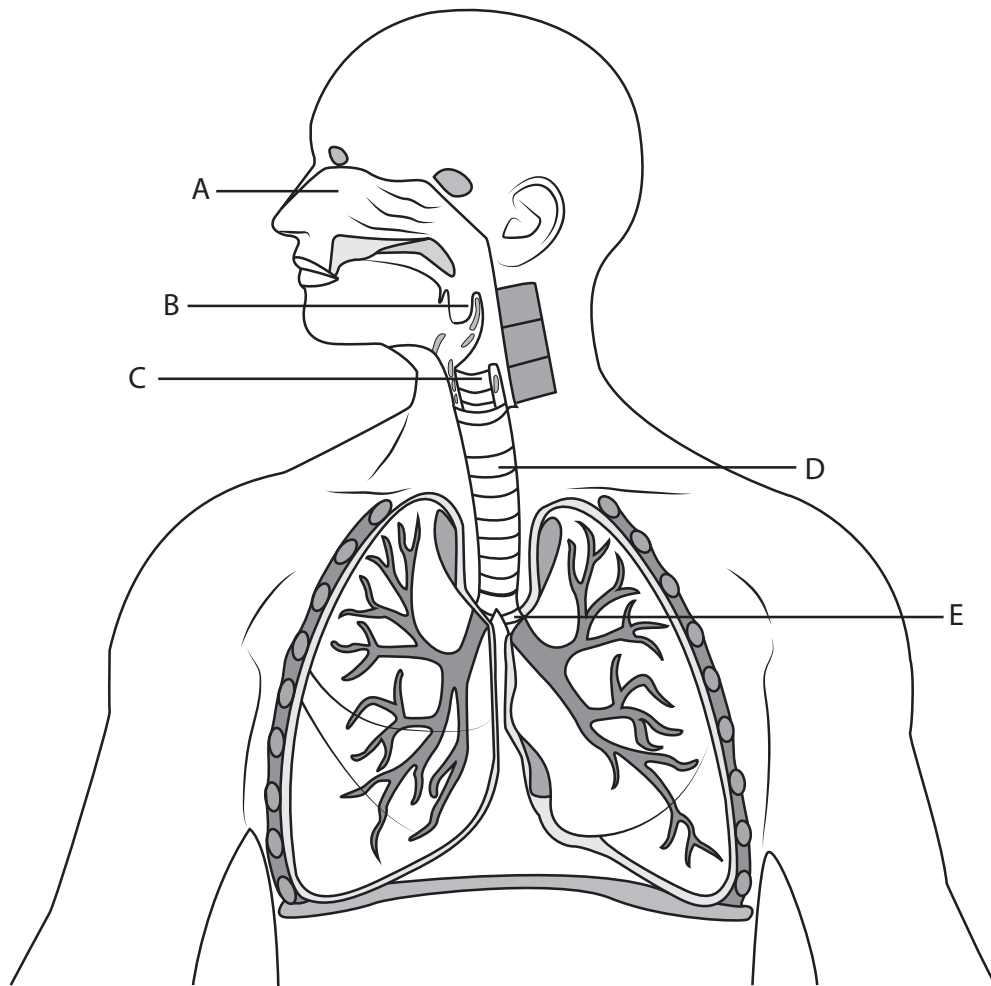


Figure 1

- 8 (a) Identify the letters in **Figure 1** that show the location of the nasal cavity and the epiglottis.

(2)

Nasal cavity

Epiglottis

- (b) Explain the function of the epiglottis.

(2)

(Total for Question 8 = 4 marks)



Figure 2 shows the downward phase of a press-up.

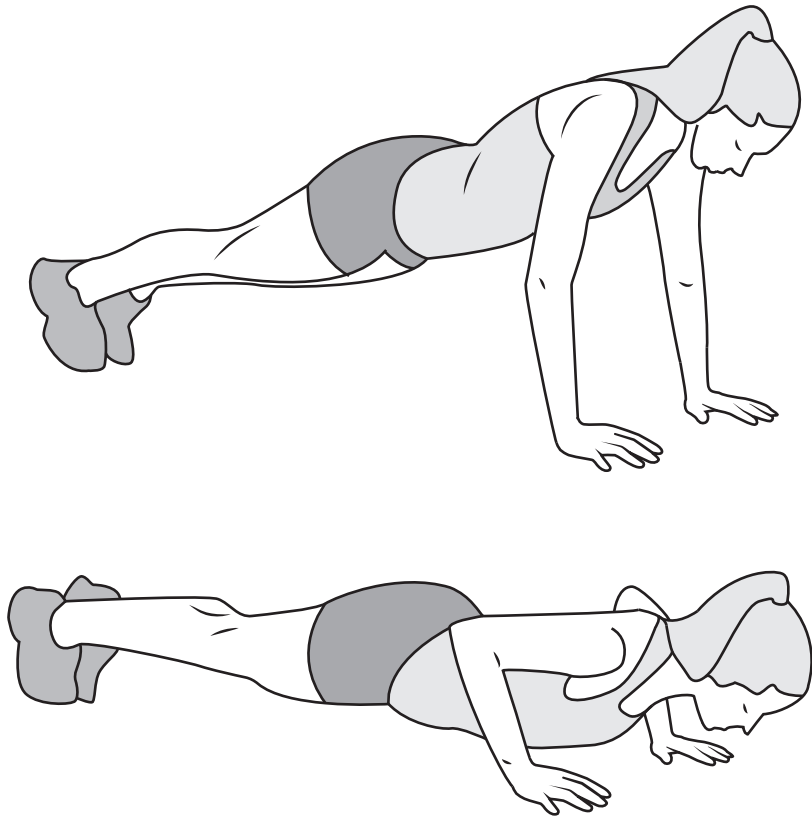


Figure 2

9 Explain how **eccentric** muscle contraction allows movement at the elbow during the downward phase of a press-up.

.....

.....

.....

.....

.....

.....

.....

.....

.....

(Total for Question 9 = 4 marks)



Table 1 shows a person's percentage of blood flow to skeletal muscles at rest and during exercise.

	Blood flow at rest	Blood flow during exercise
Skeletal muscles	5%	80%

Table 1

10 Analyse how the percentage of blood flow to the skeletal muscle changes from when a person is at rest to during exercise.

(8)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

Handwriting practice area with 15 horizontal dotted lines.

(Total for Question 10 = 8 marks)



Figure 3 shows an athlete performing a forward bend.

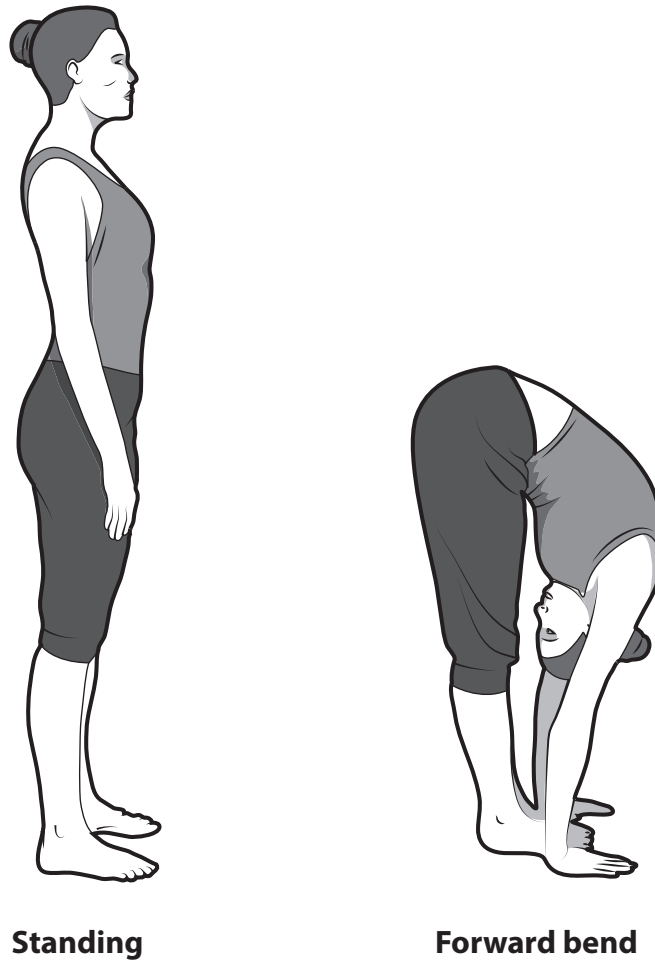


Figure 3

11 Analyse how the axial and appendicular skeleton allows the range of movement necessary at the:

- shoulder
- trunk
- wrist

to achieve the position shown from standing to forward bend.

(8)

.....

.....

.....

.....

.....

.....

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

Handwriting practice area with 20 horizontal dotted lines.

(Total for Question 11 = 8 marks)



Figure 4 shows an athlete completing a step up. The right leg and left arm have been shaded.

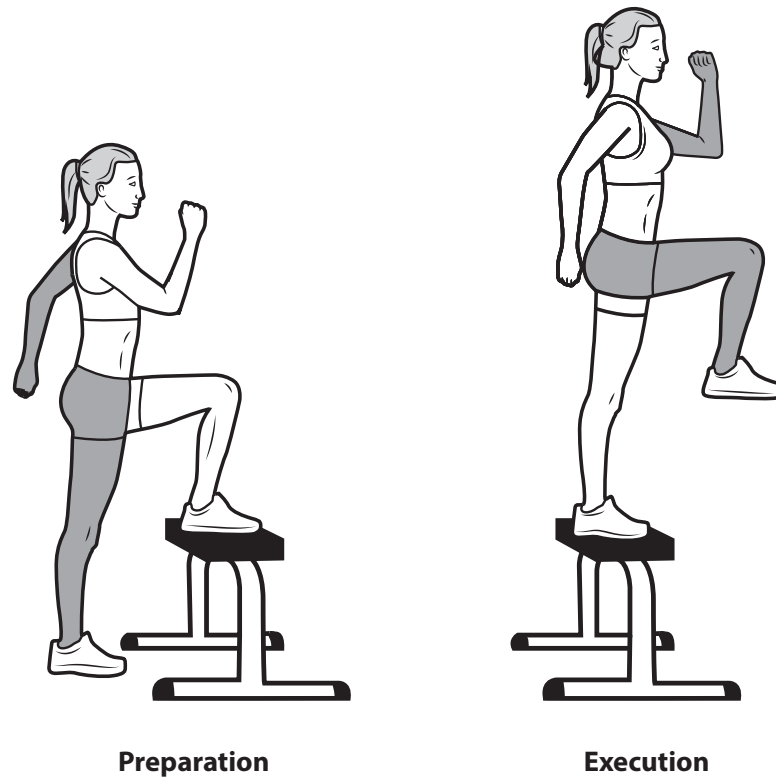


Figure 4

12 Analyse the required movement of the

- left elbow
- right hip
- right knee

to achieve the position shown from preparation to execution.

(14)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

Handwriting practice area with 28 horizontal dotted lines.

(Total for Question 12 = 14 marks)

TOTAL FOR PAPER = 60 MARKS



P 5 4 1 3 8 A 0 1 3 1 6



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

BLANK PAGE



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

BLANK PAGE



P 5 4 1 3 8 A 0 1 5 1 6

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

BLANK PAGE

