Support, Movement and Locomotion

Question Paper

Level	O Level
Subject	Biology
Exam Board	Cambridge International Examinations
Topic	Support, Movement and Locomotion
Sub Topic	
Booklet	Question Paper

Time Allowed: **33 minutes**

Score: **/27**

Percentage: **/100**

1 Which statement about the elbow joint is true?

A If the biceps contracts, the triceps must relax.

B The biceps and triceps can both be partially contracted.

C When the biceps relaxes it returns at once to its original length.

D When the biceps contracts it straightens the arm at the elbow.

2 How do the biceps and triceps muscles cause movement at the elbow joint?

	biceps		triceps	
	action	effect	action	effect
A	contracts	arm bends up	contracts	arm straightens
B	contracts	arm straightens	contracts	arm bends up
C	relaxes	arm bends up	relaxes	arm straightens
D	relaxes	arm straightens	relaxes	arm bends up

3 Which bones form a joint at the shoulder?

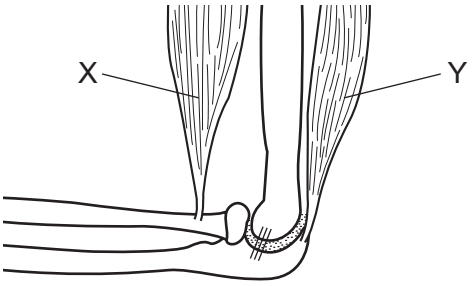
A humerus and scapula

B humerus and ulna

C radius and ulna

D radius and scapula

4 The diagram shows part of the elbow joint.



Why are the muscles labelled X and Y described as antagonistic?

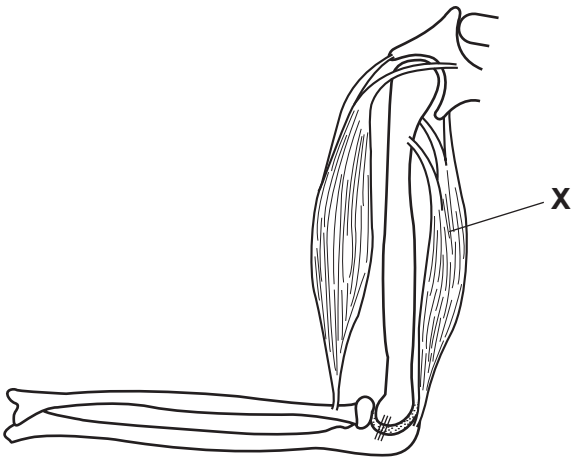
A They both affect the same bone.

B They have the same bending effect on two different bones.

C They have opposite effects on the same joint.

D They have opposite effects on different joints.

5 The diagram shows the main muscles and bones of the arm.



What happens when muscle **X** contracts?

A The lower arm is extended.

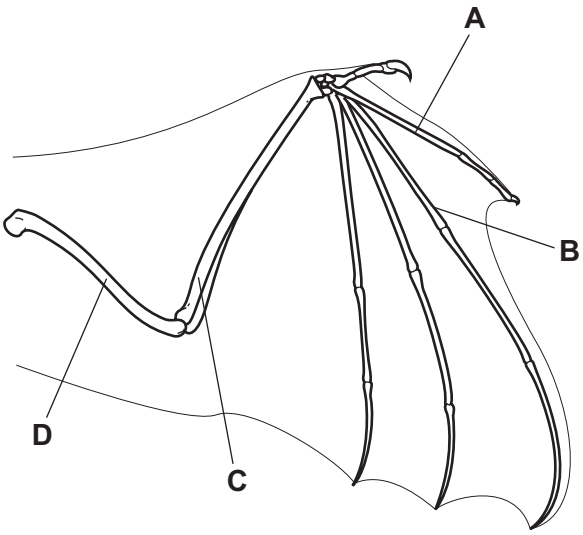
B The lower arm is raised.

C The upper arm is lowered.

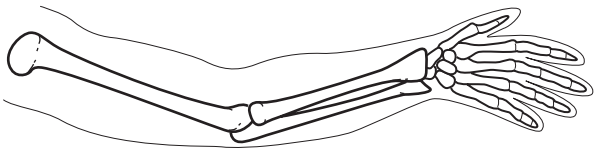
D The upper arm is raised.

6 The diagrams show the bones of the forelimb in a bat and in a human.

Which structure in the forelimb of the bat can be identified as the humerus?

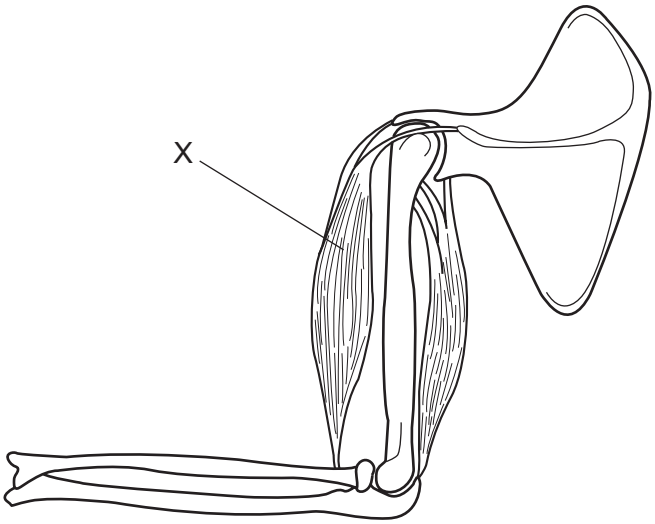


bat



human

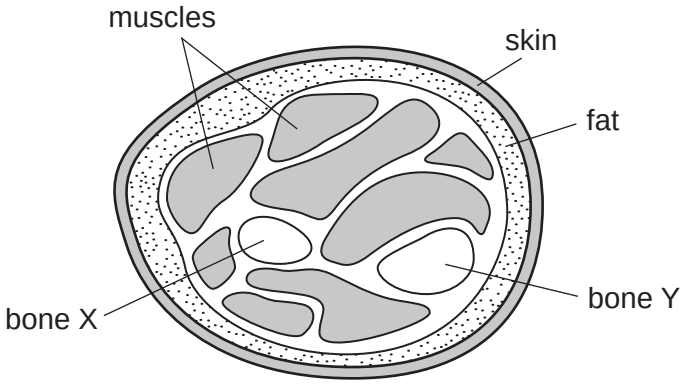
7 The diagram shows parts of the human forelimb.



What will happen if a nerve impulse stimulates X?

	muscle contracted	effect
A	biceps	arm bends
B	biceps	arm straightens
C	triceps	arm bends
D	triceps	arm straightens

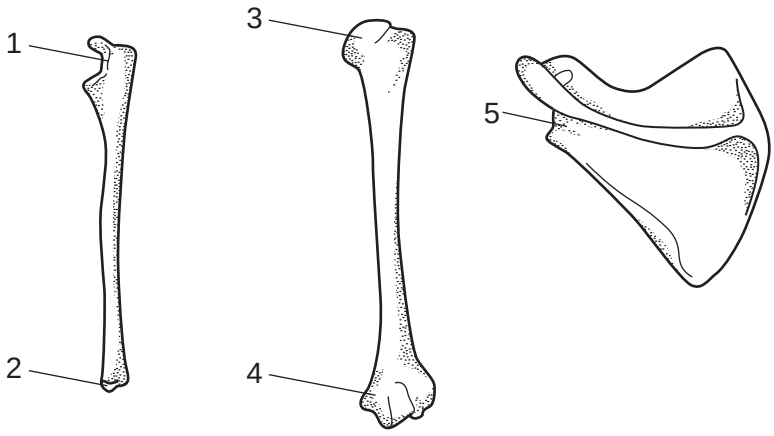
8 The diagram shows a section through the lower arm of a human.



What are bones X and Y?

	X	Y
A	humerus	radius
B	humerus	ulna
C	radius	humerus
D	radius	ulna

9 The diagrams represent three bones from the forelimb of a human skeleton not drawn to scale.



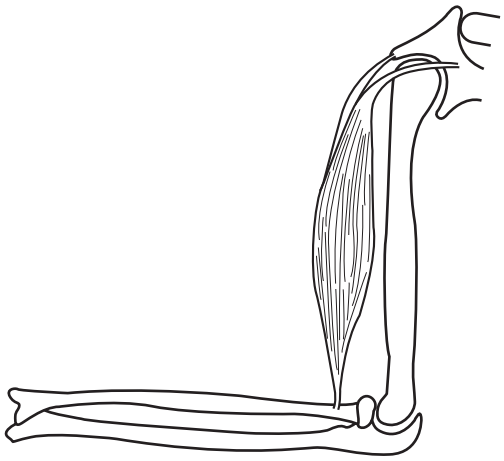
Between which parts will a ball and socket joint be formed?

A 1 and 3 **B** 1 and 4 **C** 2 and 5 **D** 3 and 5

10 Which row describes the shoulder joint of an arm?

	shoulder joint		
	bones	joint type	action
A	radius ulna	ball and socket	flexion and extension
B	scapula humerus	ball and socket	rotation
C	radius ulna	hinge	rotation and extension
D	scapula humerus	hinge	flexion and extension

11 The diagram shows the position of a muscle in the forelimb of a human.

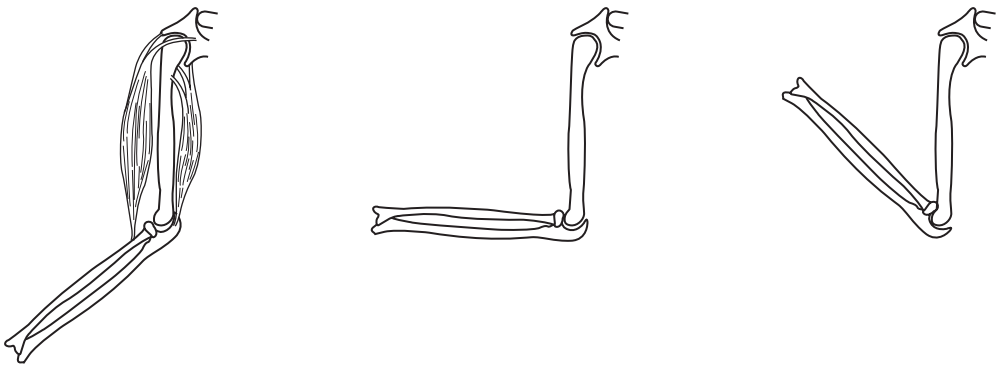


To which bones is the muscle attached?

	origin (bone **not** moved)	extensor or flexor
A	humerus	radius
B	radius	ulna
C	scapula	radius
D	scapula	ulna

12 The diagrams show the positions of the bones of the forearm as it is raised. The muscles which move the bones are only shown in the first diagram.

1 2 3



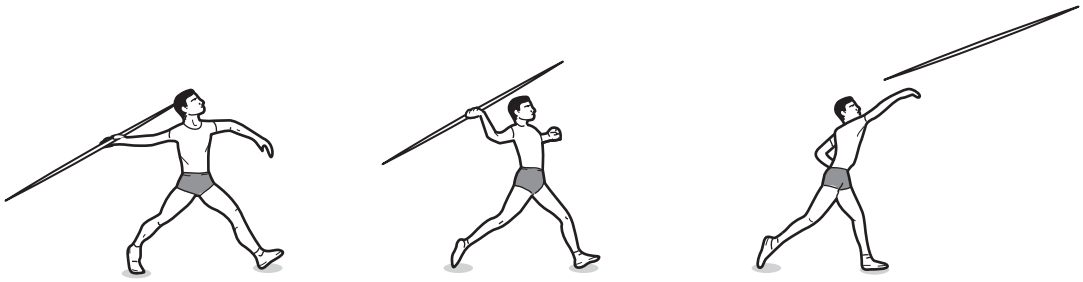
What is the action of the muscles as the arm moves from the first position to the second and then to the third?

	between 1 and 2		between 2 and 3	
	biceps	triceps	biceps	triceps
A	contracts	contracts	contracts	relaxes
B	contracts	relaxes	contracts	relaxes
C	relaxes	contracts	relaxes	contracts
D	contracts	relaxes	relaxes	relaxes

13 How many planes of movement are possible at the elbow and shoulder?

	elbow	shoulder
A	one	two
B	one	three
C	two	three
D	two	two

14 The diagrams show an athlete throwing a javelin.



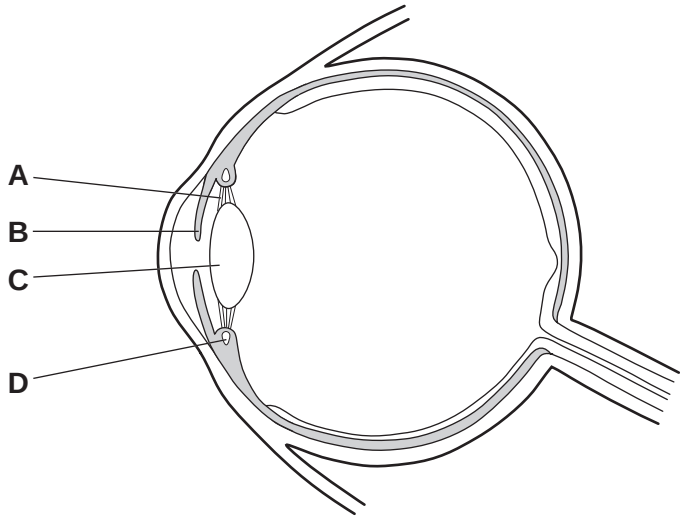
1 2 3

Which row describes the change in position of the right arm, and the action of the muscles involved, between stages 2 and 3?

	position of arm	biceps	triceps
A	flexes	contract	relax
B	flexes	relax	contract
C	straightens	contract	relax
D	straightens	relax	contract

15 The diagram shows a section through a human eye.

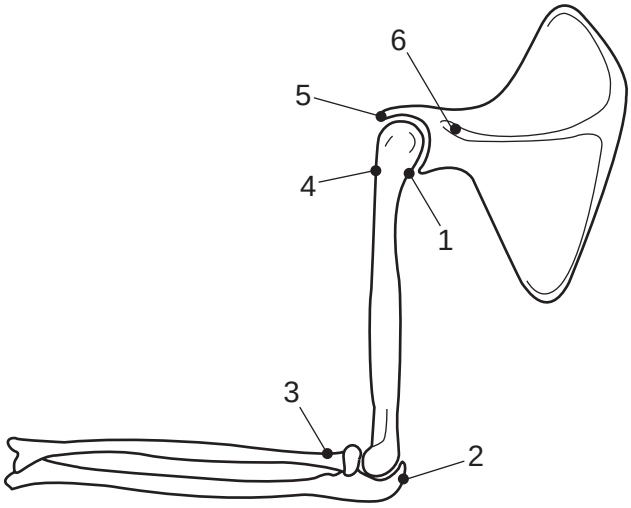
Which structure contains muscle fibres that contract in response to sudden changes in light intensity?



16 What is the correct sequence of the bones in the arm of a mammal, from the hand to the shoulder?

	hand →		shoulder
A	humerus	radius	scapula
B	humerus	scapula	radius
C	radius	humerus	scapula
D	scapula	radius	humerus

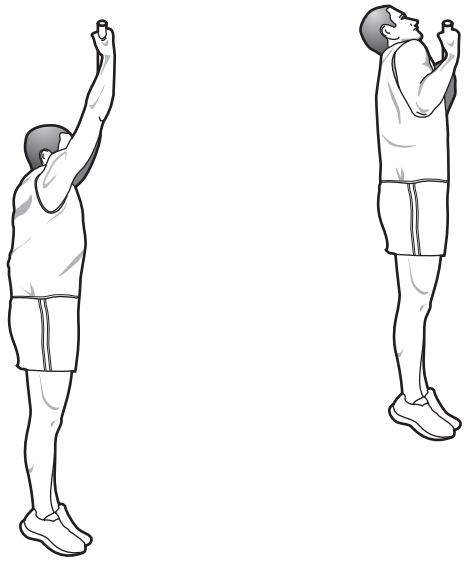
17 The diagram shows the bones of the forelimb.



Which labels show where the muscle that straightens the hinge joint is attached?

A 1 and 2 **B** 3 and 4 **C** 4 and 5 **D** 4 and 6

18 The diagram shows a person doing 'pull ups' on a horizontal bar.

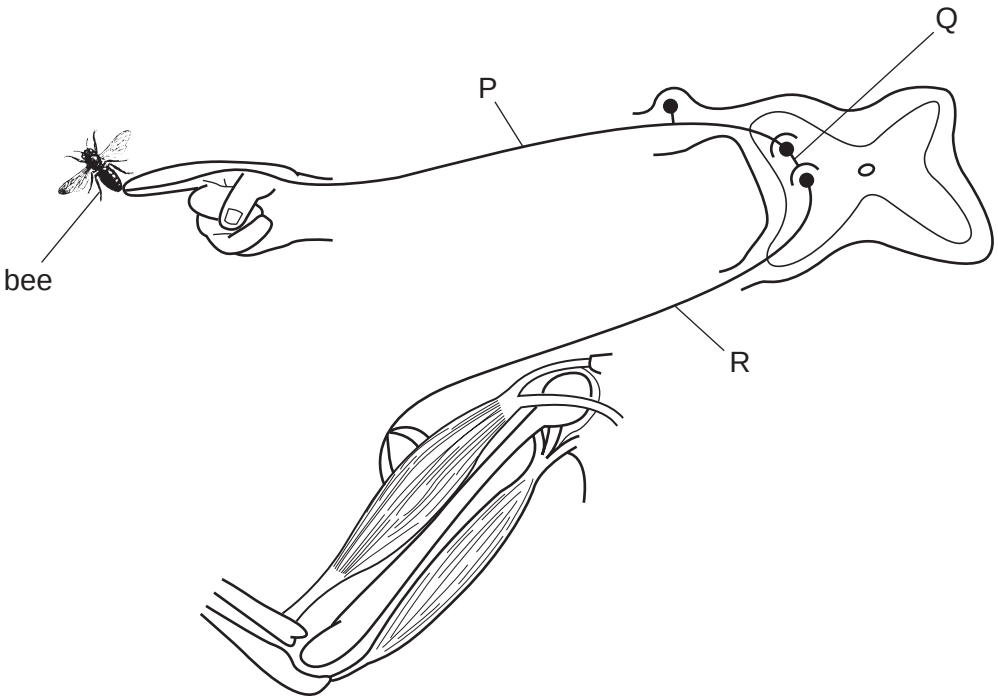


X Y

In moving from the lower position X to the upper position Y, which muscles and joint movements occur?

	biceps	triceps	ball and socket joint
A	contracts	relaxes	rotates
B	contracts	relaxes	extends
C	relaxes	contracts	rotates
D	relaxes	contracts	flexes

19 The diagram shows a reflex arc in which a bee sting causes the arm to be moved quickly.



If the relay neurone at Q is damaged, how will the transmission of nerve impulses in the reflex arc be affected?

A They cannot pass from P to Q.

B They cannot pass from P to R.

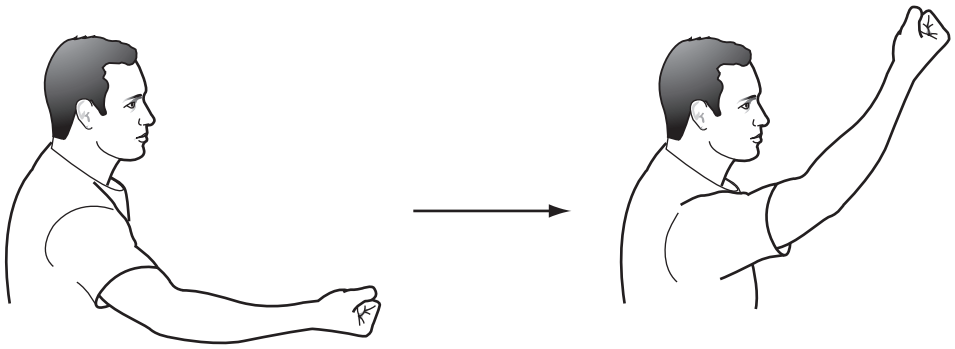
C They cannot pass from Q to P.

D They cannot pass from R to Q.

20 Which bones meet at the elbow joint and what kind of movement do they allow?

	bones	movement
A	humerus and scapula	in one plane only
B	humerus and scapula	in three planes
C	ulna and humerus	in one plane only
D	ulna and humerus	in three planes

21 The diagram shows an arm movement.



Which joint is working to allow this movement?

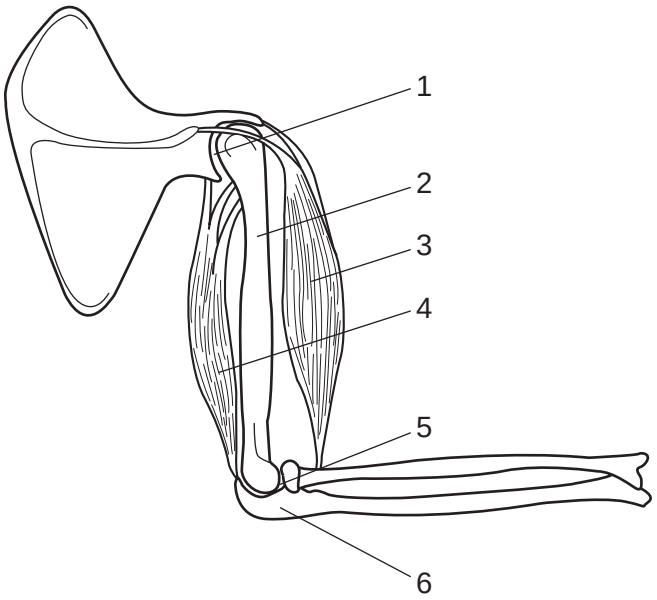
A a ball and socket joint at the elbow

B a ball and socket joint at the shoulder

C a hinge joint at the elbow

D a hinge joint at the shoulder

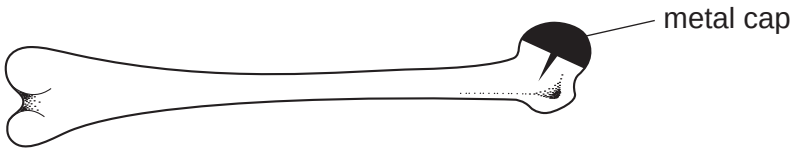
22 The diagram shows the main muscles and bones of the arm.



Which lines correctly identify the biceps muscle, the humerus and a hinge joint?

	biceps	humerus	hinge joint
A	3	6	1
B	4	2	5
C	3	2	5
D	4	6	1

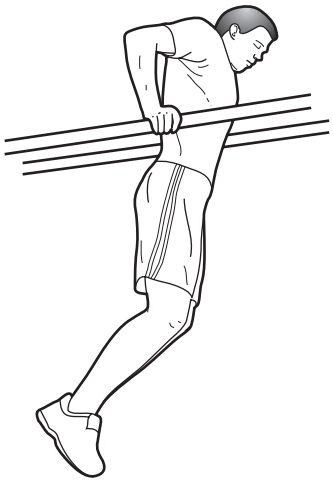
23 The diagram shows a bone from the forelimb. One end of the bone has been replaced with a metal cap.



Which bone is this, and which joint does the metal cap repair?

	bone	joint
A	humerus	elbow
B	humerus	shoulder
C	ulna	elbow
D	ulna	shoulder

24 The diagrams show an athlete holding a 'dippeposition.



What are the actions of the biceps and the triceps while holding this position?

	action of the biceps	action of the triceps
A	contracted	contracted
B	contracted	relaxed
C	relaxed	contracted
D	relaxed	relaxed

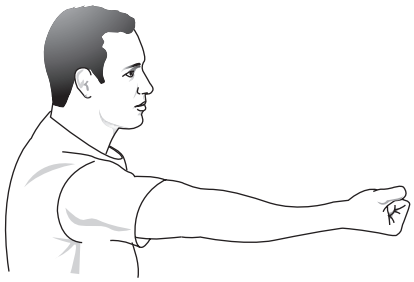
25 The diagram shows a person holding out their arm.

The ball and socket joint rotates and the hinge joint extends.

Which diagram shows the arm after these movements?

A

B



C

D

26 Which two bones form a ball and socket joint?

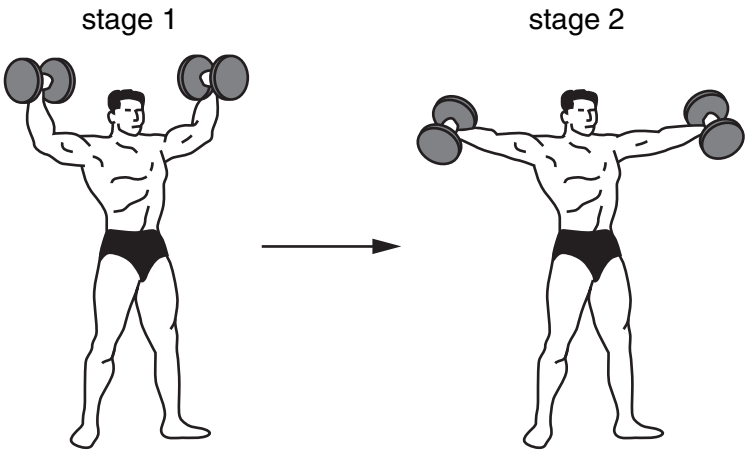
A humerus and ulna

B radius and scapula

C radius and ulna

D scapula and humerus

27 The diagrams show two stages in weightlifting.



What are the actions of the muscles and elbow joints in moving from stage 1 to stage 2?

	biceps	triceps	elbow joints
A	contract	relax	move in 1 plane
B	contract	relax	rotate
C	relax	contract	move in 1 plane
D	relax	contract	rotate