Q 2017 15 b

The vertebral column is part of the human axial skeleton and is composed of bones called vertebrae, with intervertebral discs.

* + 1. There are five regions in the vertebral column. Name any **two** of these regions **and**

state how many bones are found in **each** named region.

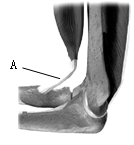
* + 1. What are the intervertebral discs made of **and** what is their function?
    2. Bone tissue is continually broken down and reformed during life.
       1. Name the cells that break down bone.
       2. Name the cells that build bone.
    3. Give **two** factors on which the continued renewal of bone depends.

**Q 2016 15 c i**

1. Long bones contain both yellow marrow and red marrow. Give **one** function of **each** type of marrow

**MS 2016 15 c i**

|  |  |  |  |
| --- | --- | --- | --- |
| (i) | *Yellow marrow:* | Stores fat **or** converts to red marrow | **3** |
|  | *Red marrow:* | Produces blood cells | **3** |

Q 2014 11 a

(i) Name the **type** of joint shown in the diagram.

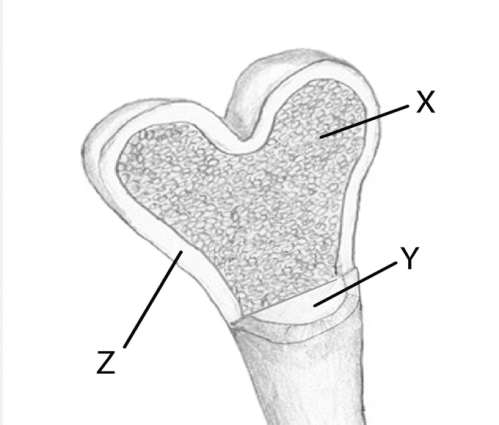
1. Name the structure labelled A, which attaches muscle to bone.
2. Explain what is meant by an *antagonistic muscle pair*. **(9)**

**MS 2014 11 a**

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | (i) | \*Hinge | **3** |
|  | (ii) | \*Tendon | **3** |
|  | (iii) | (A pair of muscles that) work with opposing actions |  |
|  |  | **or** explained. | **3** |

Q 2012 3

(a) The diagram shows the macroscopic structure of part of a long bone.



1. Name a long bone in the human body.
2. Name parts X, Y and Z in the diagram.

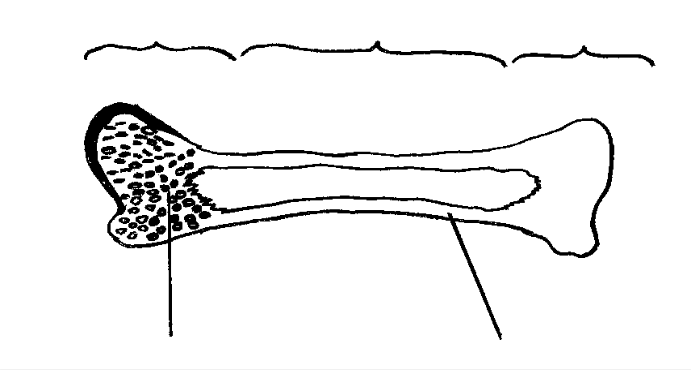
|  |  |  |
| --- | --- | --- |
|  | (iii) | State a function of X. |
| (iv) | State a function of Y. |
| (b) | (i)  (ii) | Show clearly on the diagram where you would expect to find cartilage.  State **one** role of **this** cartilage. |

MS 2012 3

|  |  |  |  |
| --- | --- | --- | --- |
| **3.** |  |  | **2(7) + 6(1)** |
|  | (a) | (i) | Name of long bone e.g. femur, tibia, fibula, humerus, radius, ulna |
|  |  | (ii) | X = spongy bone **or** marrow; Y = medullary cavity **or** marrow; Z = compact bone |
|  |  | (iii) | X: Strength (or rigidity) **or** lowers density **or** makes blood cells (or named) **or** makes marrow |
|  |  | (iv) | Y: Makes (yellow) marrow **or** stores fat **or** makes blood cells (or named) |
|  | (b) | (i) | Indication of cartilage on diagram |
|  |  | (ii) | Prevents bone damage **or** friction free movement **or** shock absorption |

Q 2009 4

1. (a) The diagram shows a longitudinal section of a long bone.



A

B

A

C

D

1. Name the parts of the diagram labelled A, B, C, D.
   1. B.

C. D.

1. Where are the discs in the human backbone?
2. What is the function of the discs in the human backbone?

(b) Give a role for **each** of the following in the human body:

1. Yellow bone marrow.
2. Red bone marrow.

MS 2009 4

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **4.** | (a) | (i) | A = Head (epiphysis) | **2** |
|  |  |  | B = Shaft (diaphysis) | **2** |
|  |  |  | C = Spongy bone | **2** |
|  |  |  | D = Compact bone | **2** |
|  |  | (ii) | Between the vertebrae | **3** |
|  |  | (iii) | Shock absorption **or** friction-free movement **or** prevention of wear and tear | **3** |
|  | (b) | (i) | Fat storage **or** can convert to red marrow | **3** |
|  |  | (ii) | Blood cell formation | **3** |

Q 2008 15 a

* 1. Answer the following questions in relation to the human musculoskeletal system.
     1. Give **three** roles of the skeleton.
     2. Explain what is meant by the axial skeleton.
     3. Give a function for each of the following:
        1. Red marrow, 2. Cartilage, 3. Tendon.
     4. Explain what is meant by an antagonistic muscle pair and give an example in the human body.
     5. Suggest a treatment for a named disorder of the musculoskeletal system.

MS 2008 15 a

|  |  |  |  |
| --- | --- | --- | --- |
| (a) | (i) | support / movement / protection / anchorage for muscle / gives shape / blood production | **3(3)** |
|  | (ii) | vertebral column and skull (and rib cage) | **3** |
|  | (iii) | 1. formation of blood cells 2. protection (absorbs shock) **or** reduces friction **or** allows bone elongation 3. joins muscle to bone | **3** |
|  | **3** |
|  | **3** |
|  | (iv) | pair of muscles that have opposite effects **or** explained | **3** |
|  | biceps and triceps **or** other example | **3** |
|  | (v) | treatment of named disorder | **3** |

Q 2006 15 a

1. (i) Draw a diagram to show the structure of a synovial joint. Label **three**

parts of the joint that you have drawn, other than bones.

1. Explain the functions of the three parts that you have labelled.
2. Name a disorder of the musculoskeletal system.
3. Give a possible cause of the disorder that you have named in (iii) and suggest a treatment for it.

MS 2006 15 a

1. (i) diagram **6, 3, 0**

labels (*cartilage, fluid, capsule* ***or*** *membrane, ligament*) **3(2)**

* 1. cartilage: absorbs shock **or** reduces wear **or** protection

**or** reduces friction

synovial fluid: friction-free movement **or** absorbs shock ligaments: hold bones together

synovial membrane **or** capsule: secretes **or** contains synovial fluid

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | *any three* | **3(3)** |
| (iii)  (iv) | osteoporosis **or** arthritis  *Disorder:*  *cause:* genetic / hormonal / dietary / injury **or** wear and tear *treatment:* anti-inflamatory drugs / hormonal **or** named / dietary supplements / pain killers / muscle relaxants / physiotherapy / exercise | **3**  **3**  **3** |

Q 2005 14 c iii

* 1. Name a disorder other than cancer for each of the following and indicate a possible cause and a means of treatment:
     + 1. Musculoskeletal system

MS 2005 14 c

(iii)1. **Name 3**

Arthritis / osteoporosis

**Cause 3**

Arthritis – injury / hormonal imbalance / genetic /immune response

Osteoporosis- hormonal imbalance / lack of exercise / genetic / dietary /menopause

[**Treatment 3**](#_TOC_250000)

arthritis – anti-inflammatory drugs/ analgesics/ rest / exercise/ replacement of joint / steroids or named/ immuno-suppressants

osteoporosis: HRT / exercise / diet / dietary supplements or named