

UNIVERSITE DE OUAGADOUGOU
Office du Baccalauréat

Séries C et D

Année 2013
Session normale
Epreuve du 1^{er} tour
Durée : 2 heures
Coefficient : 2

EPREUVE ECRITE D'ANGLAIS

Cette épreuve comporte deux (2) pages

The Body Framework

Man and the other vertebrates, like the model air plane, have a very efficient system of support in the form of an internal skeleton, or endoskeleton. As for the arthropods, they have exoskeletons. Man's body framework gives him the greatest support with the least amount of weight. This framework also permits more efficient movement than any other type of framework. The animal with an internal skeleton is, however, at one great disadvantage. It lacks much of the protection against injury from the outside that is provided by an external skeleton. Many soft parts of body are exposed. Consequently, the organism must rely on its nervous system and sense organs to make up for the protection the skeleton does not provide.

We use the expression "dry as a bone" and assume that living bone is like a dried-out bone. Actually, living bone is far from dry. It is moist and active and requires nourishment just as any living organ does. True, part of what we call bone is non-living, for bone tissue is a special combination of living cells and their products and mineral deposits. [...]

Among some of the lower vertebrates, the skeleton is composed entirely of cartilage, which lasts throughout their lives and results in a tough, flexible skeleton. In the early stages of the human embryo, the skeleton is also composed almost entirely of cartilage. After about the second month of development, however, certain of the cartilage cells disappear and are replaced by bone cells. Such cells remove calcium phosphate and calcium carbonate from the blood and deposit these minerals to form the bone structure. This process is called ossification and occurs throughout childhood. Not all cartilage undergoes ossification. Permanent cartilage is found in the end of the nose, the external ear, and the walls of the voice box and trachea. The flat bones such as those of the skull and the sternum, are formed from membrane layers that later undergo ossification.

Adapted from Modern Biology. 1973 page 532-633,
James H. Otto and Albert Towel.

Vocabulary

Arthropods: classe d'animaux composée de crustacés (crabe, homard...)

Framework : charpente.

Moist : humid

To last : durer

To undergo: subir.

Guided commentary

- 1) Relying on the text and in your own words, state the difference between endoskeleton and exoskeleton. (3 points)
 - 2) Basing on the text, define 'ossification'. (3 points)
 - 3) According to the text, what are the advantages and disadvantages of endoskeleton? (4 points)
 - 4) What shows in the text that bones are not dead? (4 points)
 - 5) If you have a fracture, will you consult a modern doctor or a traditional doctor? Justify your answer. (6 points)
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