

**Biology**

**Question 1**

(52)

For  
examiner  
use only

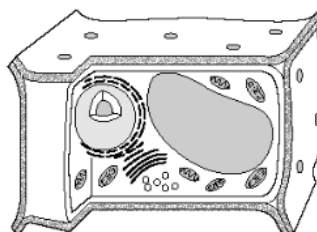
(1) (2)

- (a) The diagram shows a sketch of a cell.  
Is this a plant cell or an animal cell?

Plant

Give a reason for your answer.

It has a cell wall



- (b)(i) State the function of white blood cells.

To fight infection

- (ii) State the function of red blood cells.

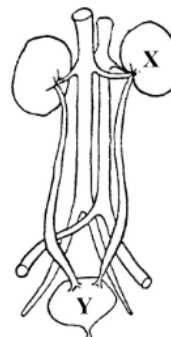
To carry O<sub>2</sub> around the body

- (c)(i) In the diagram of the human urinary system, state the function of the organ labelled X.

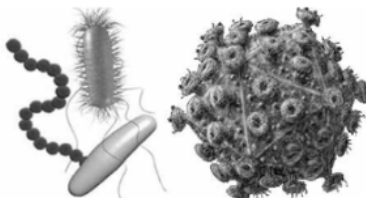
filter blood

- (ii) Name a product of excretion which is stored in the organ labelled Y.

Urine



- (d) Both bacteria and viruses can cause illness in humans and other animals.



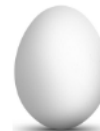
- (i) Name one illness caused by bacteria.

T.B.

- (ii) Name one illness caused by viruses.

Ebola

(e) In an experiment to test for the presence of protein in egg-white (albumen), chemicals are added to the egg-white.



(i) Name a chemical used.

Na OH and Copper Sulfate Solution

(ii) What colour would confirm the presence of protein in the egg-white?

Violet

(f) The picture shows a raven. The raven is classified as a vertebrate.



(i) Explain why the raven is classified as a vertebrate.

It has a backbone

(ii) In ecological terms, is the raven classified as a producer, a consumer or a decomposer?

Consumer

(g) The genetic information of an organism is contained in chromosomes that are located in the nucleus of every cell of the organism.

(i) How many pairs of chromosomes are in most human cells?

23

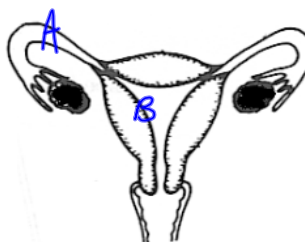
(ii) What are the major chemical components of chromosomes?

DNA

(h) The diagram is of the human female reproductive system.

(i) Mark with the letter **A** the place where fertilisation most commonly occurs.

(ii) Mark with the letter **B** the place where successful implantation of the zygote occurs.



(iii) Explain how one named form of contraception prevents conception.

Named form of contraception Condom

Explanation Prevents sperm from entering the woman's body

(7 × 6 + 1 × 10)

For  
examiner  
use only

(1) (2)

**Question 2**

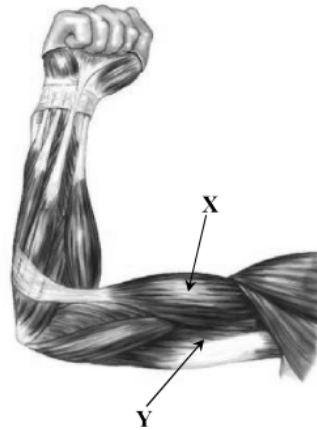
(39)

For  
examiner  
use only

(a) Important parts of the human arm include muscles, bones, ligaments, tendons and joints. (24)

(i) Name the two major bones found in the lower part of the human arm, i.e. between the elbow and the wrist.

Bone 1 Radius  
Bone 2 Ulna



(ii) The muscles labelled X and Y in the diagram form an antagonistic pair of muscles, which work together to move the lower arm up and down.

With reference to these muscles, explain how the lower arm is raised.

Biceps (X) contracts  
Triceps (Y) relaxes

With reference to these muscles, explain how the lower arm is lowered.

Biceps (X) relaxes  
Triceps (Y) contracts

(iii) Distinguish between ligaments and tendons.

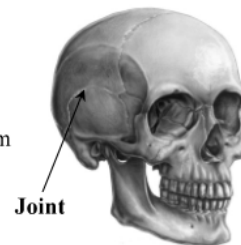
Ligaments join bone to bone  
tendons join muscle to bone

(iv) Name the type of joint that is located at the human elbow.

Hinge joint

(v) Name the type of joint that is indicated on the diagram of the human skull.

Fused joint

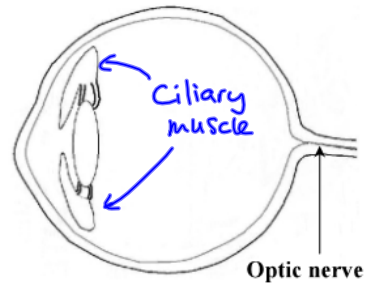


(1) (2)

(b) The diagram is of the human eye. (15)

(i) Mark on the diagram the locations of the ciliary muscle.

(ii) Explain how the ciliary muscle works to help eyesight.



It changes the lens shape to focus image

(iii) Describe the function of the pupil.

It allows light through to the retina.

(iv) The optic nerve, labelled on the diagram, carries information from the eye to the brain.

Is the optic nerve an example of a sensory nerve or a motor nerve?

Sensory nerve

For examiner use only	
(1)	(2)