

Biology

Question 1

(52)

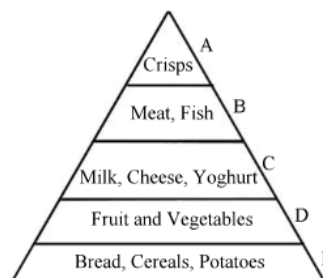
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(a) The diagram is of a food pyramid.

(i) Name one other food from level B.

Food Eggs

(ii) What is the dietary reason why the area of level A is much less than the area of level E in the food pyramid?

Why? We should eat more from E than A

(1)

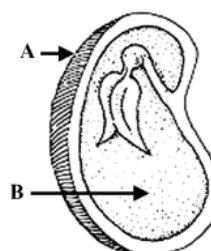
(2)

(b) Complete the word equation for photosynthesis.

carbon dioxide + water → glucose + oxygen

(c) The diagram is of a section through a seed showing its structure.

Name the parts labelled A and B in the diagram.

Name of A Testa (seed coat)Name of B Food (Endosperm)

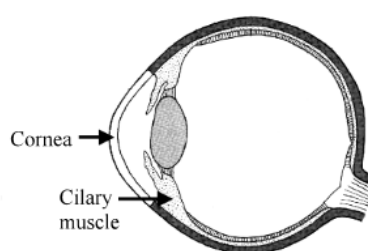
(d) The diagram shows the human eye.

Give the functions of the cornea and of the ciliary muscle.

Function of cornea _____

Protects eye

Function of ciliary muscle _____

control lens shape for focus

- (e) The diagram shows an animal cell. Name part A.

Name of A Membrane

What important structures are located in B?

What? Chromosomes (Genes / DNA)

- (f) The diagram shows the inside of a human mouth. Give the name of tooth type A.

Name Incisor

What is the function of tooth type B?

Function Chew food

- (g) Name one invertebrate animal and one vertebrate animal.

Invertebrate lobster

Vertebrate Human

- (h) Four methods of waste management are: **composting, incineration, landfill and recycling.**

- (i) Pick **two** from the list and state how each works. The name of the selected method must be given with each.

First name Landfill

How it works rubbish is put in a hole in the ground.

Second name Incineration

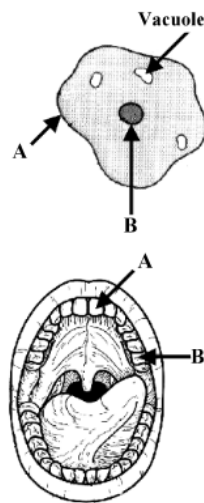
How it works rubbish is burnt

- (ii) Give **one** advantage and **one** disadvantage of a named method.

Method Incineration Advantage It gets rid of rubbish

Disadvantage May release harmful gases

(7 × 6 + 1 × 10)



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(1) (2)

Question 2

(a) The simplified diagram shows the flow of blood through the lungs, heart and the rest of the body.

(i) Name the blood vessels labelled A and B.

A Aorta

B Vena Cava

Capillaries are small blood vessels.

(ii) Describe **two** changes in the composition of blood after it has passed through the capillaries of the lungs shown.

1 Blood will have more O_2

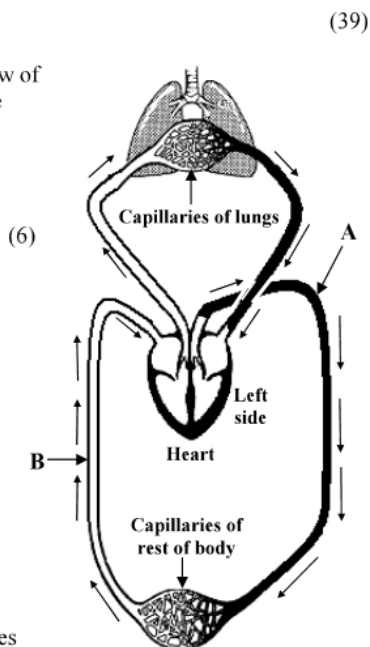
2 Blood will have less CO_2
(also less H_2O)

What feature of capillaries allows these changes to happen? (3)

Thin membrane allows gases pass through.

(iii) Name the chamber of the heart that pumps blood to the lungs. (3)

Right Ventricle



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(1) (2)

- (b) The diagram shows a baby in the womb. The placenta and umbilical cord are labelled.

- (i) Give **two** functions of the placenta. (6)

1 Transports
O₂ to baby
(also nutrients)

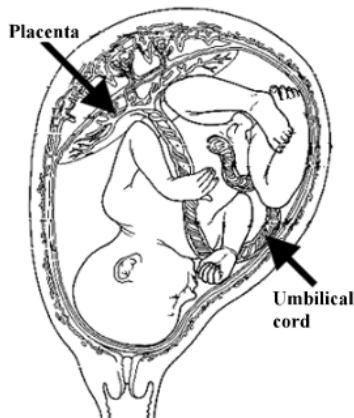
2 Transports waste (eg.. CO₂)
out to mother

- (ii) What is the function of the umbilical cord, which connects the baby to the placenta? (3)

What? Connects placenta to baby
to transport O₂, CO₂, nutrients, waste

- (iii) Describe, briefly, **four** events that occur at the end of pregnancy (i.e. just before birth, at birth and just after birth). (12)

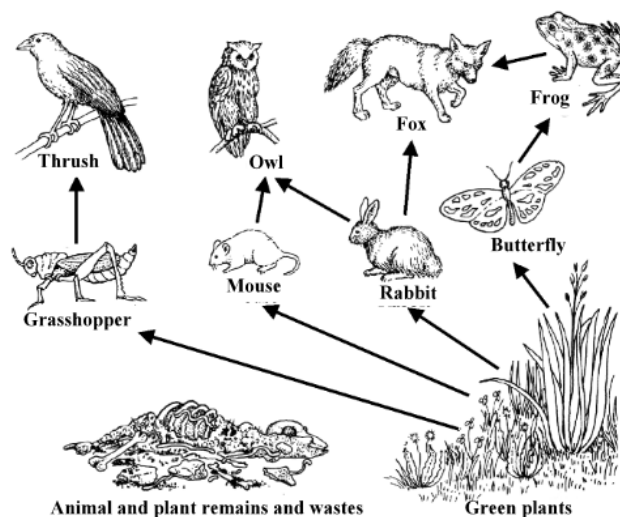
1 • Contractions (Labour)
• Cervix opens
2 • Water breaks
• Baby passes down birth canal
3 • Umbilical chord cut
• Placenta passes
4 • Mother produces Colostrum



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(1) (2)

(b) The diagram shows a simplified food web from a mixed habitat.



Answer the following questions using only items from the diagram above in your answers.

(21)

(i) Write a food chain with three members.

Green Plant → Rabbit → Fox

(ii) Decomposers are not shown in the diagram.
What would decomposers feed on?

Animal & plant remains and wastes

(iii) Give **one** example of adaptation.

Birds have wings to fly

(iv) Name **two** animals that might be in competition.

1 Owl 2 Fox

(v) What is meant by the term interdependence?
Give an example of interdependence.

Organisms depend on each other for survival. eg. Butterfly get food from flowers, plants get pollinated by butterfly

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(1)

(2)

Chemistry

Question 4

(52)

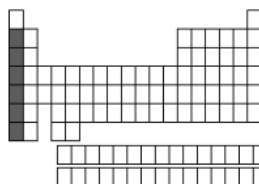
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(1)

(2)

- (a) The diagram is an outline periodic table. One area, a group of elements, is shaded.

Name this group of elements and give one chemical property that they have in common.



Group Alkali metals

Property Very reactive

- (b) Describe how to measure the pH of lemon juice.

Describe use pH meter



- (c) What are isotopes?

What? Same atom (element)
with different number of
neutrons.

- (d) The photograph shows severe rusting of the steel body of a motorcar. Give one condition necessary for rusting to occur. Describe one method of preventing rust happening.



Condition presence of O₂
(and H₂O)

Method paint