BIOLOGY CHECKPOINT EXAM PAST PAPERS NOTES WITH ANSWER KEY

Compiled by

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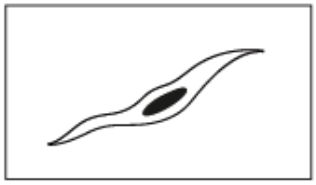
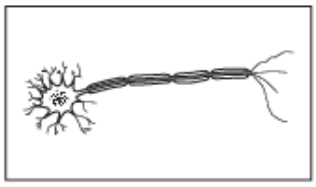
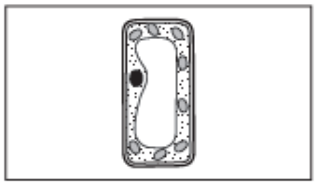
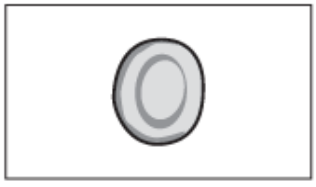
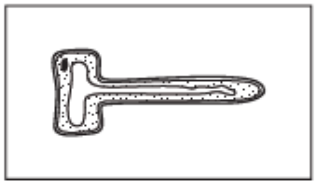
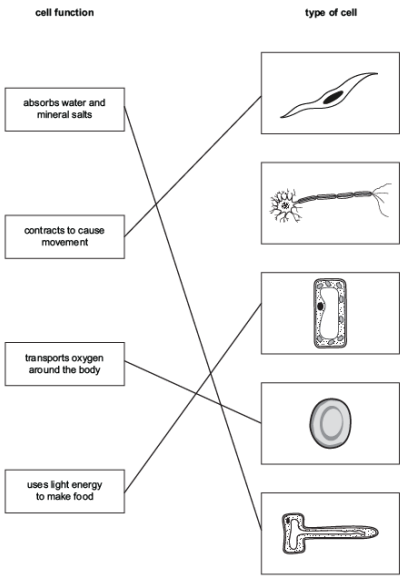
1 Different cells have different functions.

Draw lines from the **cell function** to the correct **type of cell**.

Draw **four** lines only.

cell function	**type of cell**
absorbs water and mineral salts	
contracts to cause movement	
transports oxygen around the body	
uses light energy to make food	
	

[4]

Question	Answer	Marks	Further Information
1		4	each correct line = 1 mark **Note** if 2 lines from one 'function box' or 2 lines to one 'cell type box' then award no marks for the 2 lines even if one is correct.

Mike investigates different rocks.

He uses different objects to try and scratch the surface of the rocks.

Mike records his observations in a table.

rock	is the rock scratched by			
	finger nail	copper coin	knife blade	steel file
A	yes	yes	yes	yes
B	no	no	yes	yes
C	no	no	no	no
D	no	no	no	yes
E	no	yes	yes	yes

(a) A rock can only be scratched by a substance that is harder than the rock.

Which rock is the **softest**?

Choose from **A**, **B**, **C**, **D** or **E**.

.....

[1]

(b) Mike finds this information about the hardness of rocks.

relative hardness	scratch test
1	easily scratched by finger nail
2	scratched by finger nail
3	scratched by copper coin
4	easily scratched by knife blade
5	scratched by knife blade
6	scratched by steel file
7	scratches glass
8	scratches quartz
9	easily scratches quartz
10	cannot be scratched

Use the information to answer these questions.

(i) What is the relative hardness of rock E?

..... [1]

(ii) A rock can be scratched with a steel file.

This rock will not scratch glass.

What is the relative hardness of this rock?

..... [1]

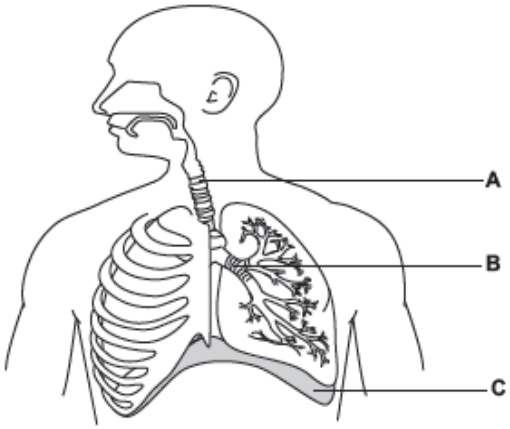
(c) Rocks form in different ways.

Which type of rocks form when lava from a volcano cools down?

..... [1]

Question	Answer	Marks	Further Information
3(a)	**A**	**1**	more than **one** answer = 0 marks
3(b)(i)	3	**1**	more than **one** answer = 0 marks **Accept** scratched by copper coin
3(b)(ii)	6	**1**	more than **one** answer = 0 marks **Accept** scratched by steel file
3(c)	igneous (rock)	**1**	**Accept** magmatic (rock) **Accept** pumice / basalt / granite / obsidian **Ignore** intrusive or extrusive **Ignore** magma

4 The diagram shows part of the human respiratory system.



Name the structures labelled **A**, **B** and **C**.

Choose words from the list.

air sac **bronchus** **diaphragm** **lung** **rib cage** **trachea**

A .....

B .....

C .....

[3]

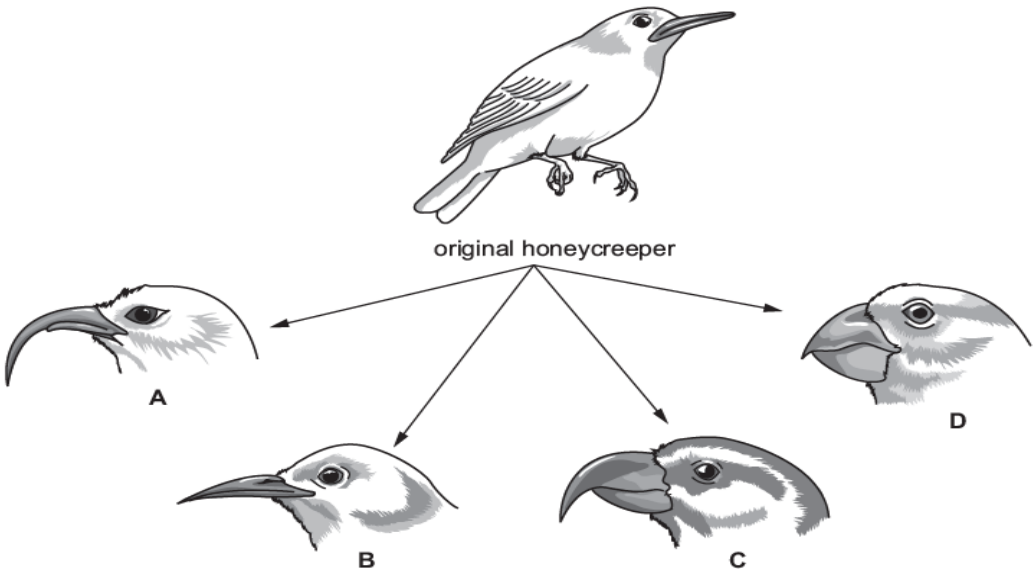
Question	Answer	Marks	Further Information
4	**A** = trachea **B** = bronchus **C** = diaphragm	3	

The islands of Hawaii are home to around 40 species of birds called honeycreepers.

They have descended from an original species of honeycreeper which is now extinct.

Look at the diagram.

It shows five species of honeycreeper.



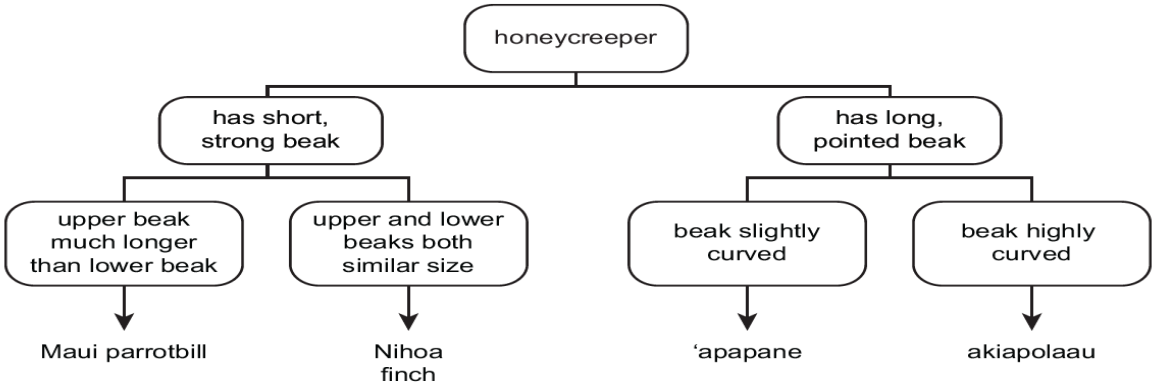
(a) (i) Which process causes the gradual change from one species to another?

..... [1]

(ii) Name the scientist who developed the theory to explain how this process could happen.

..... [1]

(b) This key can be used to identify four species of honeycreeper.



Use the key to identify species **A** and species **D**.

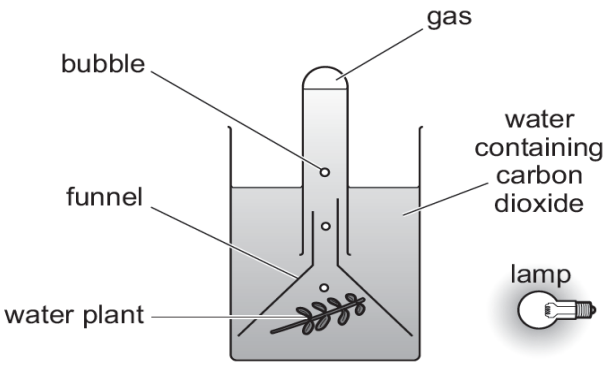
species **A** .....

species **D** ..... [2]

Question	Answer	Marks	Further Information
10(a)(i)	natural selection	1	**Accept** evolution
10(a)(ii)	(Charles) Darwin	1	
10(b)	species **A =** akiapolaau species **D =** Nihoa finch	2	

Oliver investigates the effect of light on photosynthesis.

Oliver is given the apparatus shown.



Write down two **variables** which Oliver needs to control during his investigation.

1 .....

2 .....

[2]

Question	Answer	Marks	Further Information
14	**any two from** light **source** / lamp the same type of water plant size of the water plant temperature time taken (for experiment)	2	 **Accept** light intensity / distance from beaker or light **Accept** same number of leaves / same mass of water plant **Accept** the **amount** of carbon dioxide / **concentration** of carbon dioxide / **mass** of carbon dioxide **Accept volume** of water / **amount** of water / **mass** of water / **level** of water

April 2018 Paper 1

1 Pierre plays a sport called rugby.

To keep fit he eats a special diet and exercises often.

(a) To improve his strength, Pierre eats lots of chicken.

(i) Name the **main nutrient** present in chicken.

..... [1]

(ii) Explain how this nutrient improves Pierre's strength.

..... [1]

(b) To prepare for a game of rugby, Pierre eats lots of starchy foods such as pasta.

Explain why it is important for Pierre to eat **starchy** food before a strenuous game of rugby.

.....

..... [2]

Question	Answer	Marks	Further Information
1(a)(i)	protein	1	**Note** if more than one food group given = 0 for the question
1(a)(ii)	muscle is made of protein / needed for growth / needed for repair	1	**Accept** develops muscle / strengthens muscles / for muscles **Accept** for cell division / make new cells / regenerate muscles quicker
1(b)	**any two from** (idea of) contains carbohydrate provides (lots of) energy needed for respiration	2	 **Accept** contains carbs / (starch) broken down into glucose or sugar

5

The drawing shows a mammal called the Philippine tarsier.

Tarsiers live in rainforests, jumping from tree to tree.

They rarely touch the ground.

They sleep during the day and hunt for insects at night.

(a) Use the drawing to suggest **three** ways tarsiers are adapted to their habitat.

1 .....

2 .....

3 .....

[3]

(b) Philippine tarsiers are an endangered species.

Tourists have to pay to photograph these tarsiers in special nature reserves.

Suggest **two** ways this can help to increase the number of these tarsiers in the wild.

1 .....

2 .....

[2]

Question	Answer	Marks	Further Information
4(a)	**any three from** large eyes / wide eyes (to gather max light) forward facing eyes (for 3D vision) large ears / ears on side of head (for sensitive hearing) long fingers (to grasp trees) large snout / large nose (suggesting a keen sense of smell) big legs / strong legs / long legs long tail (for balance)	3	features must be visible in the diagram **Accept** large hands / large paws **Accept** muscular legs

4(b)	**any two from** (money can be used to:) maintain the nature reserve / improve the nature reserve / money used to build more reserves for a breeding program / can release more into the wild / help improve chances of breeding idea that can improve the health of the tarsiers / can provide food create new habitats / avoids habitat destruction / control (number of people) destroying wild habitats increase education / idea of increase awareness / increase publicity to prevent poaching research into causes of decline reduce tourism in unprotected areas	**2**	

The dodo became extinct in the 17th century.

- The dodo was a flightless bird which lived on the island of Mauritius.
- The dodos built their nests on the ground.
- Dodos had never met humans before humans arrived on the island. The dodos were not afraid of the humans.
- Humans brought new animals to the island, such as cats, dogs and rats.
- The humans removed most of the forest where the dodos lived to build new homes and to create farmland.

Write down **two** reasons why you think that the dodo became extinct.

1 .....

.....

2 .....

.....

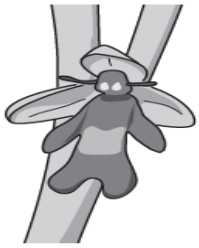
[2]

Question	Answer	Marks	Further Information
7	**any two from** (idea of) they were not afraid of humans so they were easy to catch (idea of) the new animals ate their food (idea of) the new animals ate their eggs / attacked their nests (idea of) they were hunted by humans (idea that) new animals were predators of dodo (idea that) they lost their habitat / no nesting sites (idea of) it couldn't fly to escape the new animals that were introduced / it could not fly to move to a new habitat (idea that) animals the humans brought had diseases	**2**	each correct answer = 1 mark **Accept** new animals or humans destroy eggs **Accept** humans killed dodos

Diagram **A** shows the flower of a fly orchid.

Diagram **B** shows a fly orchid flower being visited by insects.

A



B

(a) The flowers of this orchid release chemicals which smell like a female fly.

Suggest **two** reasons why male flies travel great distances to visit these flowers.

1 .....

2 .....

[2]

(b) The orchid is pollinated by insects.

What is meant by the term **pollination**?

.....

.....

..... [2]

Question	Answer	Marks	Further Information
10(a)	**any two from** they are looking for a mate (idea that) smell carried (long distances) in air currents flowers look like (female) fly (from a distance) attracted to the scent / attracted to the smell	**2**	 **Accept** they think the flowers are (female) flies
10(b)	transfer of pollen (grains from the anther) pollen (grains) going to the **stigma** of a flower	**2**	**Accept** the transfer of pollen from one flower to another flower = 1 mark **Accept** to transfer pollen from anther to the stigma = 2 marks

April 2018 Paper 2

The list contains the names of different parts of a cell.

cell membrane

cell wall

cytoplasm

nucleus

chloroplast

(a) The table shows where different parts of a cell are found.

Complete the table by placing ticks (✓) in the correct boxes.

One has been done for you.

part of a cell	where the part of the cell is found		
	only in animal cells	only in plant cells	in both animal and plant cells
cell membrane			
cell wall		✓	
cytoplasm			
nucleus			
chloroplast			

[3]

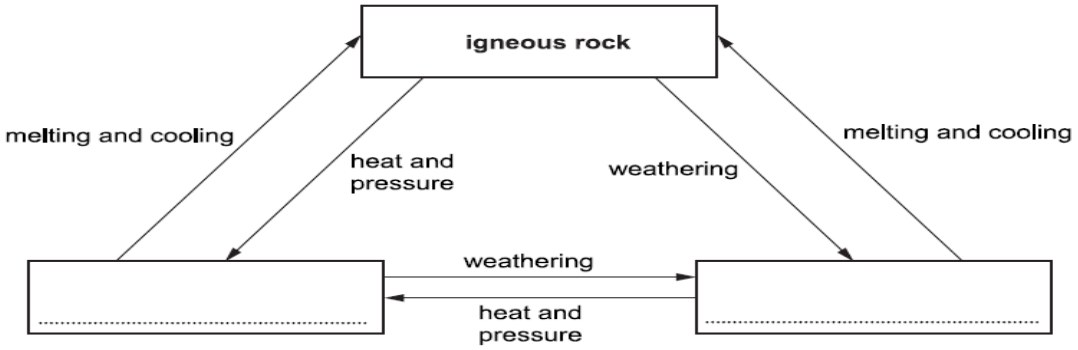
(b) Which part of a cell contains the genetic material?

.....

[1]

Question	Answer	Marks	Further Information
1(a)	<table><tr><th>part of a cell</th><th>only in animal cells</th><th>only in plant cells</th><th>in both animal and plant cells</th></tr><tr><td>cell membrane</td><td></td><td></td><td>✓</td></tr><tr><td>cell wall</td><td></td><td>(✓)</td><td></td></tr><tr><td>cytoplasm</td><td></td><td></td><td>✓</td></tr><tr><td>nucleus</td><td></td><td></td><td>✓</td></tr><tr><td>chloroplast</td><td></td><td>✓</td><td></td></tr></table>	3	**all** four correct = 3 marks **three** correct = 2 marks **two** correct = 1 marks **one** correct = 0 marks
1(b)	nucleus	1	

The diagram shows part of the rock cycle.



(a) Complete the diagram by writing in the **two** missing types of rock. [2]

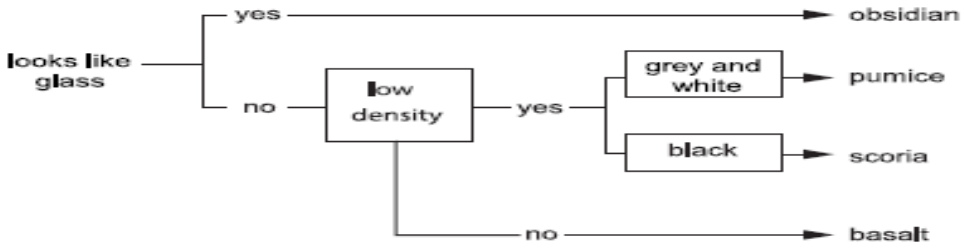
(b) Pierre investigates rocks.

He describes the rocks he investigates.

Here is a table of his observations.

rock	observation
A	grey and white rock that has a low density
B	black rock that has a high density
C	shiny black rock that looks like glass
D	black rock that has a low density

Use this key to identify the four rocks.



A .....

B .....

C .....

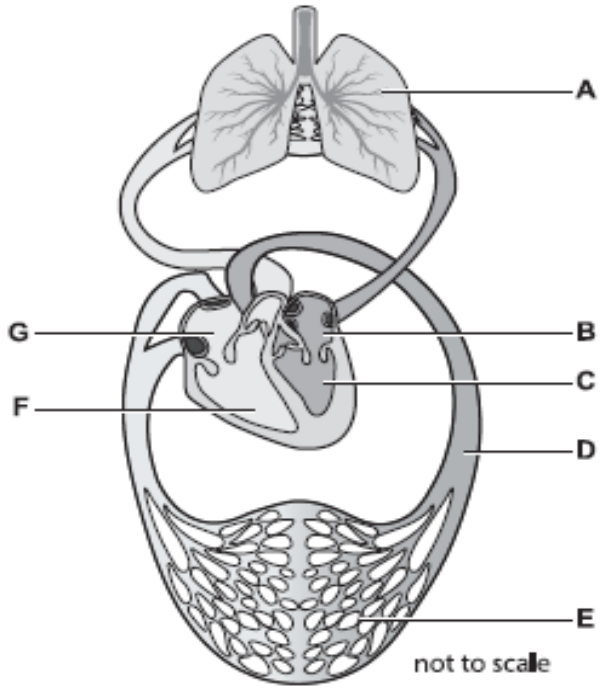
D .....

[2]

Question	Answer	Marks	Further Information
3(a)	metamorphic ⇄ sedimentary	2	each correct answer = 1 mark **Accept** one mark for both names given but reversed
3(b)	A **pumice** B **basalt** C **obsidian** D **scoria**	2	**all** correct = 2 marks **two** or **three** correct = 1 mark **one** correct = 0 marks

The diagram shows the human circulatory system.

Parts of the system are labelled with the letters **A** to **G**.



Use the diagram to identify parts of the circulatory system from their descriptions.

Write your answers in the table.

description	letter
the part that pumps blood to the lungs	
the part where oxygen leaves the blood	
the part where the blood is at its greatest pressure	
an artery that takes blood to the body	

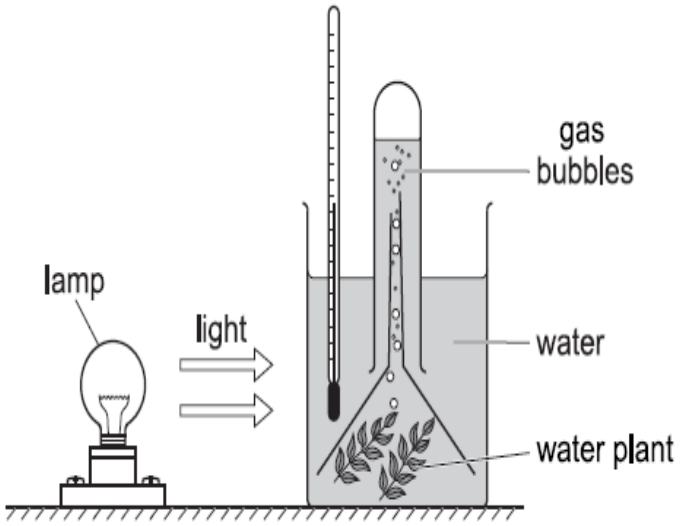
[4]

Question	Answer	Marks	Further Information
4	**F** **E** **C** **D**	4	each correct letter = 1 mark

Safia and Jamila investigate photosynthesis.

They use water plants.

Here is the apparatus they use.



(a) In their first experiment they measure the number of gas bubbles made in one minute.

(i) What is the name of the gas made in photosynthesis?

Circle the correct answer.

carbon dioxide **methane** **nitrogen** **oxygen** **water** [1]

(ii) What equipment does Safia use to measure one minute?

..... [1]

(b) Safia and Jamila do two more experiments.

They move the lamp further away from the plant for each experiment.

Here are their results.

distance between light and water plant in cm	number of gas bubbles in one minute
10	98
20	54
40	26

(i) Why do they use one minute for each experiment?

.....

[1]

(ii) Complete the sentence describing the pattern of results.

As the distance between the light and the water plant increases, ...

.....

[1]

(c) **Predict** the results for:

a distance of 30 cm = ... gas bubbles

a distance of 50 cm = ... gas bubbles

[1]

(d) Circle the correct word or phrase that completes the conclusion.

increases

The rate of photosynthesis **does not change** as light decreases.

decreases

[1]

Question	Answer	Marks	Further Information
6(a)(i)	oxygen	1	
6(a)(ii)	stop-watch / stop-clock	1	
6(b)(i)	it is a control variable	1	**Accept** make a fair test / to allow a comparison / a variable that does not change
6(b)(ii)	number of bubbles decreases	1	
6(c)	between 53 and 27 inclusive **AND** between 1 and 25 inclusive	1	both needed
6(d)	decreases	1	

April 2019 Paper 1

1 Yeast is a living organism.

(a) Write down **three** life processes.

1 .....

2 .....

3 .....

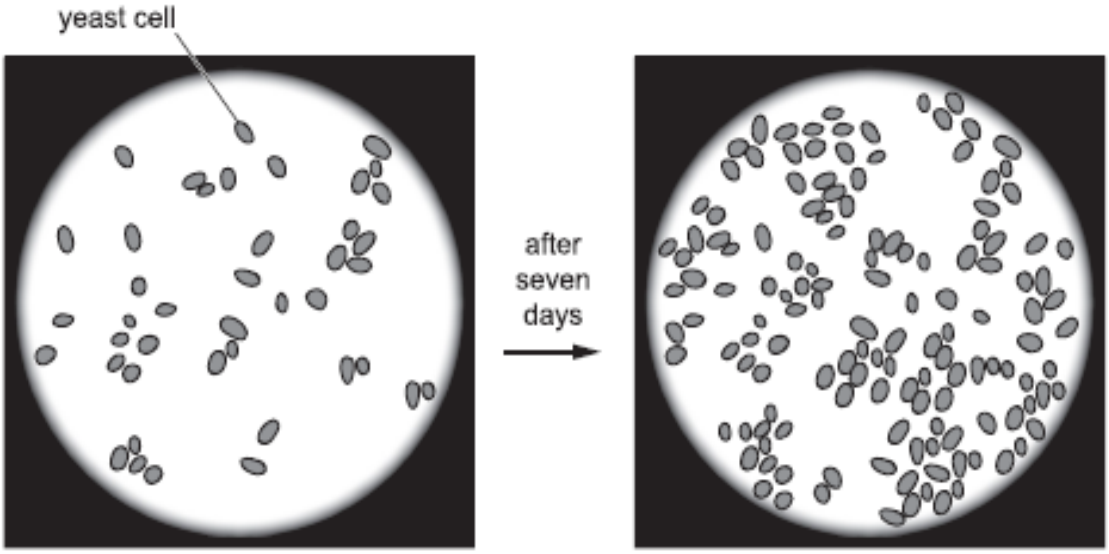
[1]

(b) Louis Pasteur investigated the effect of yeast on grape juice.

He mixed yeast cells with grape juice.

He looked at a slide of this mixture using a microscope.

He looked at a new slide of the mixture after seven days.



(i) Describe **one** way the appearance of the slide has changed.

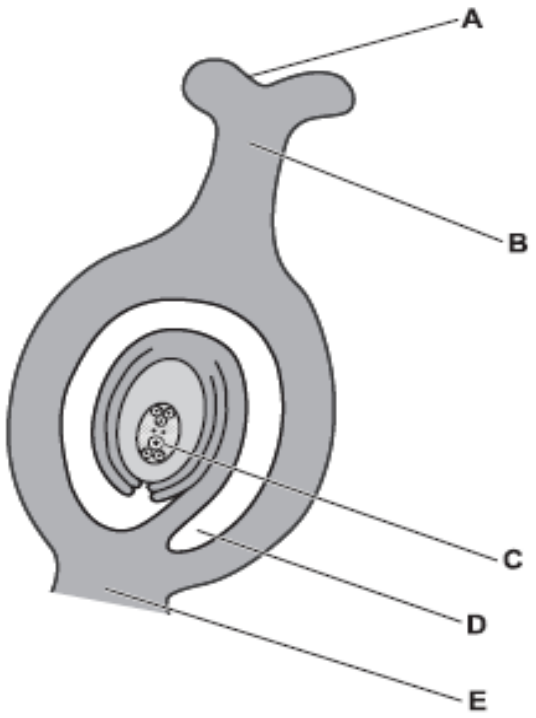
..... [1]

(ii) Explain the cause of this change in appearance.

..... [1]

Question	Answer	Marks	Further Information
1(a)	**any three from** respiration reproduction growth nutrition excretion movement / can move sensitivity / irritability	**1**	three correct = 1 mark
1(b)(i)	(many) more yeast (cells) / more cells	**1**	**Accept** cells multiplied / yeast increases / multiply themselves
1(b)(ii)	cells had divided / reproduced	**1**	

The diagram shows the female parts of a flower.



(a) Where does **pollination** take place in the flower?

Circle the correct answer.

A **B** **C** **D** **E** [1]

(b) What happens during **pollination** in the flower?

.....

..... [1]

(c) Where does **fertilisation** take place in the flower?

Circle the correct answer.

A **B** **C** **D** **E** [1]

(d) Describe what happens during **fertilisation** in the flower.

.....

..... [1]

Question	Answer	Marks	Further Information
4(a)	**A** B C D E	**1**	more than one answer circled = 0 marks
4(b)	pollen lands on stigma	**1**	**Accept** pollen transferred from one flower to another / pollen goes from anther to stigma **Accept** pollen lands on **A** **Accept** 'male gamete' for 'pollen'
4(c)	A B **C** D E	**1**	more than one answer circled = 0 marks
4(d)	(nucleus of) pollen and (nucleus of) ovule fuse	**1**	**Accept** 'female gamete' or 'egg' for 'ovule' **Accept** 'male sex cell' for 'pollen' and 'female sex cell' for 'ovule' **Accept** male gamete for pollen **Accept** gametes fuse / gametes join together / gametes combine **Accept** pollen or male gamete and ovule form a zygote

Rajiv investigates the water content of some soils.

Here is his method.

Rajiv

- measures the mass of an evaporating dish
- adds 20g of soil into the evaporating dish
- puts the dish of soil into a drying oven for 24 hours
- measures the new mass of the dish and the soil
- does this with four more different soils.

(a) What apparatus does Rajiv use to measure the mass of the soil and dish?

.....

[1]

(b) Here are his results.

soil sample	mass of soil and dish before drying in g	mass of soil and dish after drying in g	change in mass of soil in g
A	126	125	1
B	128	124	4
C	132	127	5
D	136	130	6
E	131	128	3

Which soil sample contains the most water?

Choose from **A**, **B**, **C**, **D** or **E**.

.....

[1]

(c) Write down one **safety** hazard in Rajiv's investigation and describe how he should avoid it.

safety hazard .....

To avoid the hazard Rajiv should .....

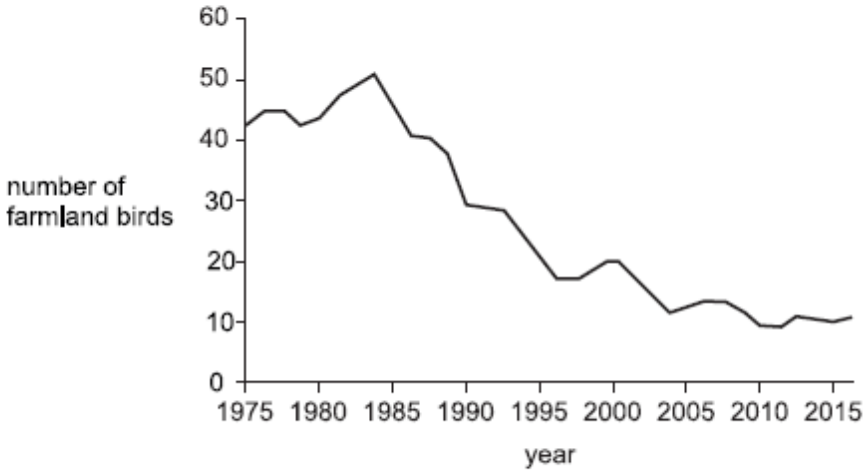
.....

[2]

Question	Answer	Marks	Further Information
5(a)	(electronic) balance	1	**Accept** scale(s) / beam balance / triple beam balance **Do not accept** weighing balance or weighing scales
5(b)	**D**	1	
5(c)	Hazard: **hot dish / burn hand / the oven is hot**. To avoid the hazard Rajiv should **use tongs / heat resistant gloves / let the dish cool before picking it up**. **OR** Hazard: **getting soil in eyes**. To avoid the hazard Rajiv should **wear goggles / safety glasses**.	2	**note** hazard = 1 mark how to avoid the hazard = 1 mark **note** two marks can only be awarded by a hazard and a linked precaution **Accept** Hazard **idea of heat damage to clothes**. To avoid the hazard Rajiv should **wear lab coat**. **OR** Hazard **bacteria from soil / insects in soil / infection from soil / toxic (minerals in) soil**. To avoid the hazard Rajiv should **wear goggles / safety glasses / gloves**.

3 A group of birdwatchers collect data to show how the numbers of farmland birds change over time.

The graph shows the change in number of farmland birds between 1975 and 2015.



(a) The data for each year was obtained from a large number of observations.

Explain why it is a good idea to make a large number of observations.

.....

[1]

(b) The results shown in the graph are estimates.

Explain why it is **not** possible to find the exact number of farmland birds.

.....

[1]

(c) The birdwatchers measured the change in numbers of farmland birds.

Write down two **factors** that affect the number of farmland birds.

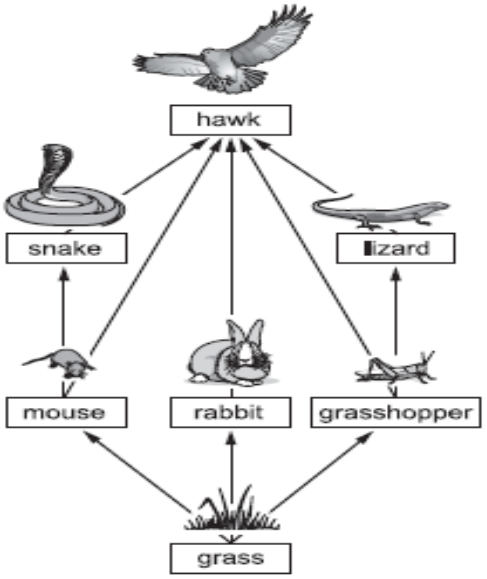
1 .....

2 .....

[2]

Question	Answer	Marks	Further Information
8(a)	to obtain reliable results	1	**Accept** to work out an average
8(b)	**any one from** birds are (too) mobile / immigration / migration / fly away (rapid) birth / death out at different times of day impossible to count them all / too many / over too large an area idea of difficult to be sure that you have not counted same bird twice or some not at all	1	**Accept** cannot find them as they are in different places / not all birds seen

10 The diagram shows a food web in a field.



(a) Explain what is shown by the arrows in a food web.

.....

..... [1]

(b) Name three **primary** consumers in this food web.

..... [1]

(c) Why is it difficult to classify the hawk as a secondary consumer?

.....

..... [1]

(d) Name an organism that competes with the lizard for food.

..... [1]

(e) The rabbits are all killed by a disease.

What effect does this have on the number of mice?

Give a reason for your answer.

effect on number of mice .....

reason .....

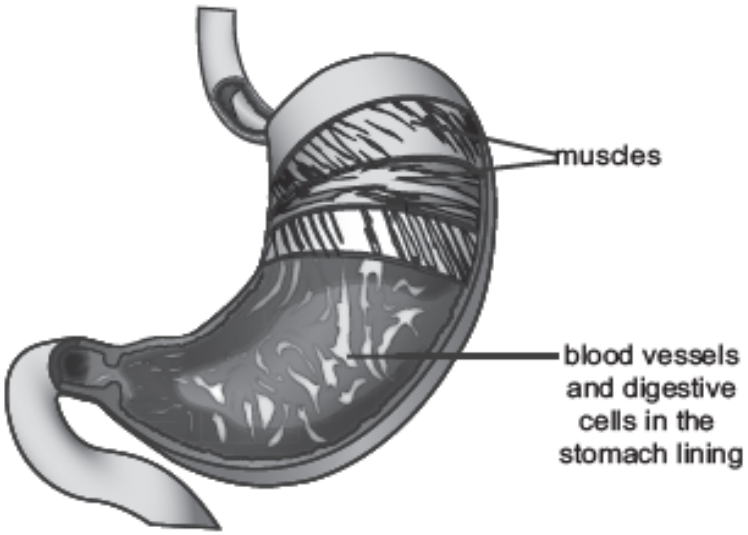
.....

[1]

Question	Answer	Marks	Further Information
10(a)	the transfer of energy	1	**Accept** energy transfer / energy flow
10(b)	mouse, rabbit **and** grasshopper	1	**all** three required
10(c)	the hawk feeds at more than one trophic level / can be a tertiary consumer	1	**Accept** it eats (both primary and) secondary consumers
10(d)	hawk	1	
10(e)	**any one from** **go up** – more grass to eat / less competition (by rabbits) for food **go down** – lack of rabbits means hawks will need to eat more mice **stay the same** – idea that more grass to eat **AND** more predation by hawks will even out	1	mark the change and the linked reason

April 2019 Paper 2

The diagram shows a human stomach.



(a) Which term best describes the stomach?

Circle the correct answer.

cell **organ** **organism** **system** **tissue**

Use information from the diagram to explain your answer.

.....

.....

[2]

(b) Red blood cells and muscle cells are found in the wall of the stomach.

(i) Explain how the structure of a red blood cell is related to its function.

.....

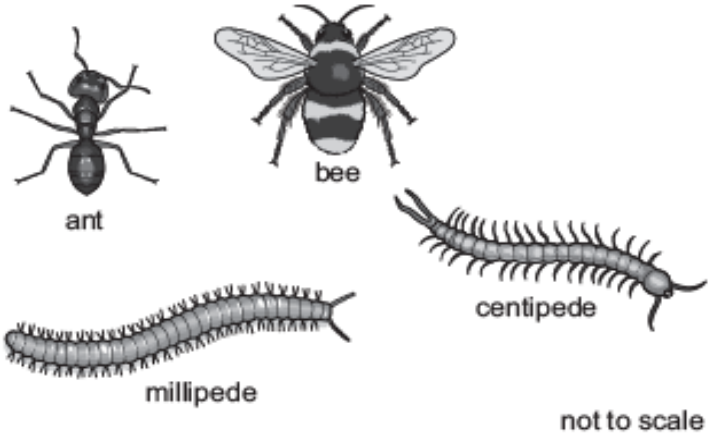
..... [2]

(ii) Explain how the structure of a muscle cell is related to its function.

.....

..... [2]

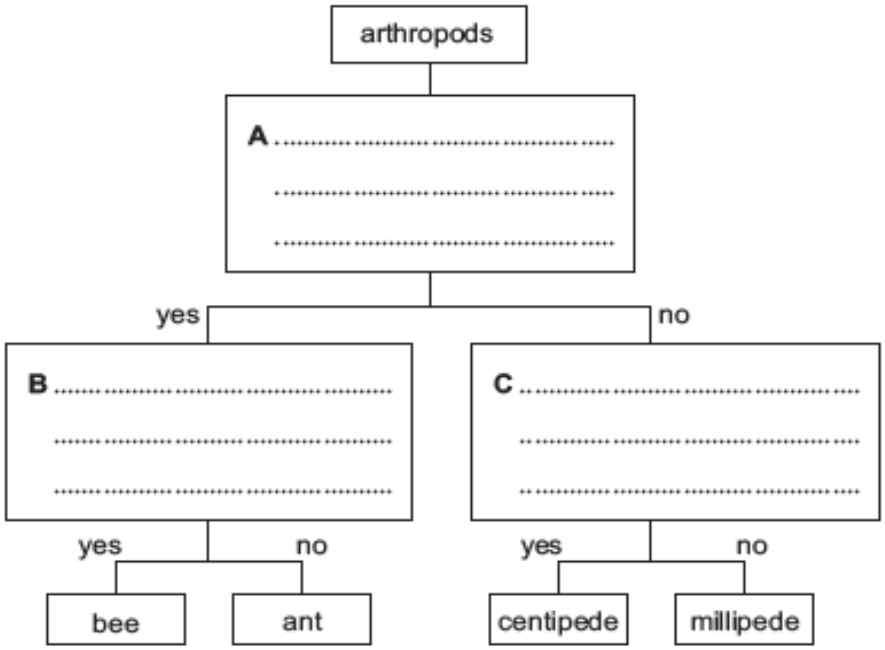
4 This question is about completing a key to identify these four arthropods.



(a) Look at the key.

The statements for boxes **A**, **B** and **C** are missing.

Use the diagrams to complete **A**, **B** and **C**.



[3]

(b) Spiders also belong to the arthropod group.

Give **one** feature which separates a spider from the other four arthropods.

..... [1]

Look at the diagram of a human skeleton.

(a) Name the tissue which makes up the skeleton.

..... [1]

(b) Give two **functions** of the skeleton.

1 .....

2 .....

[2]

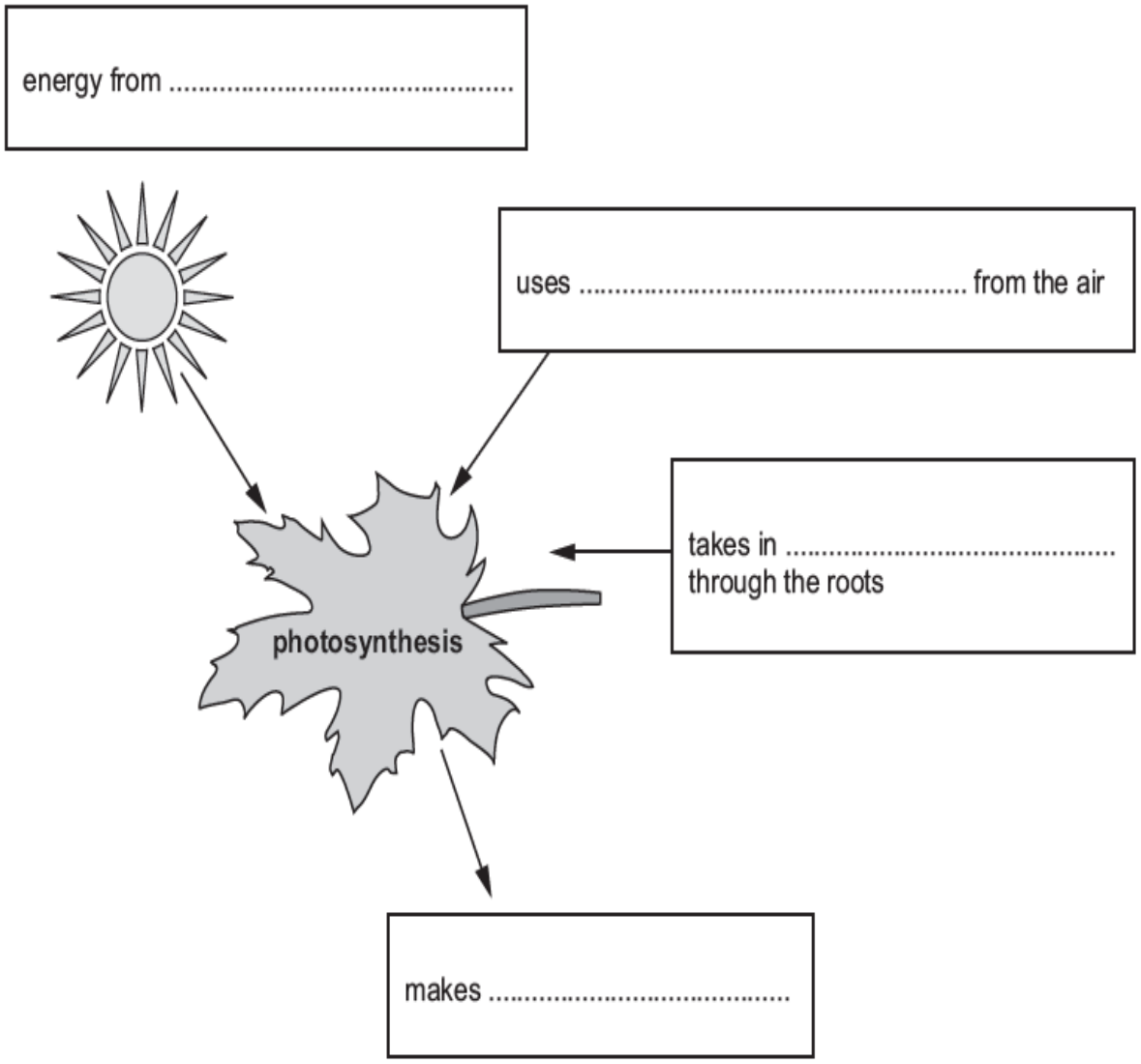
October 2019 Paper 1

1 The diagram shows the process of photosynthesis in a leaf of a plant.

Complete the diagram.

Choose words from the list.

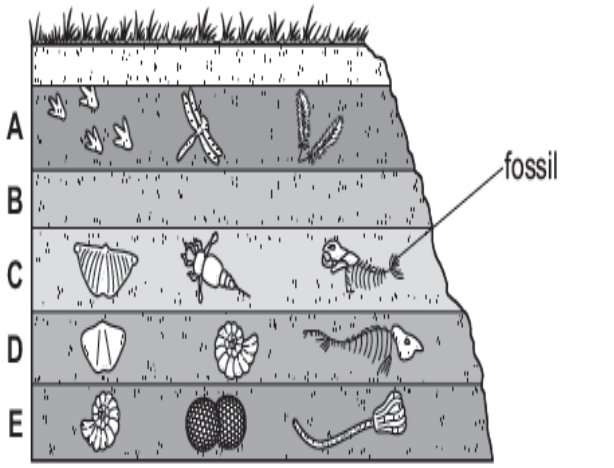
carbon dioxide	**glucose**	**minerals**
nitrogen	**sunlight**	**water**



[2]

Sedimentary rocks are formed in layers.

Look at the diagram of layers of sedimentary rocks.



not to scale

(a) Which layer has the **youngest** fossils?

.....

[1]

(b) Metamorphic rocks do not normally contain fossils.

Tick (✓) the box next to the correct explanation.

Animals did not live in areas where metamorphic rocks were formed. ☐

Metamorphic rocks are formed when molten rock cools. ☐

Metamorphic rocks were formed before there was life on Earth. ☐

Metamorphic rocks were formed under high temperatures and pressures. ☐

[1]

Many plants depend on insects such as bees for reproduction.

(a) Look at the diagram of a pollen grain viewed with a microscope.

(i) Name the part of a flower that makes pollen grains.

..... [1]

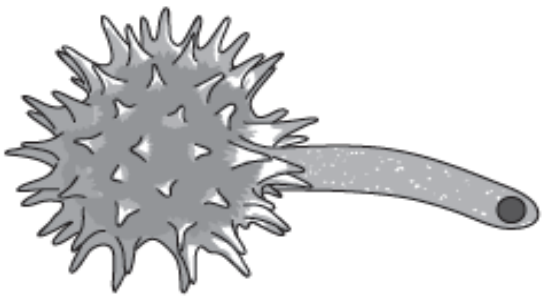
(ii) This pollen grain is adapted to be carried by insects.

Use the diagram to suggest how it is adapted.

.....

..... [1]

(b) The following diagram shows the same pollen grain after it has landed on the stigma of a flower.



Explain what is happening to the pollen grain and why this is necessary for reproduction to be completed.

What is happening to the pollen grain? .....

.....

Why is this necessary? .....

.....

[2]

October 2019 Paper 2

The list contains the names of different parts of a cell.

cell membrane

cell wall

chloroplast

Complete the table by placing ticks (✓) in the correct boxes.

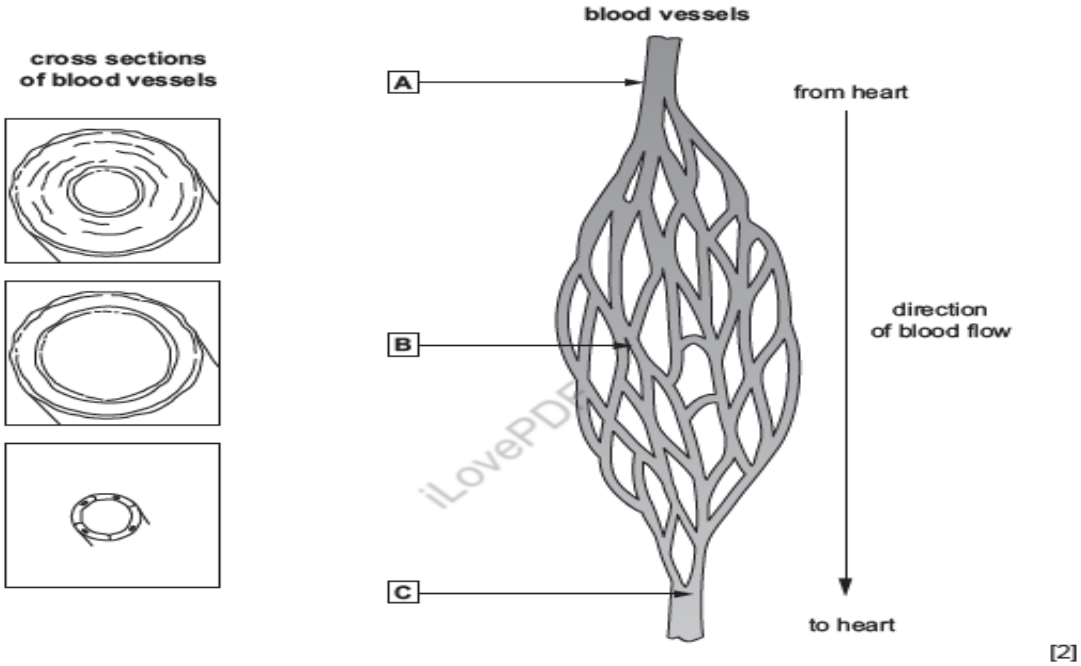
part of a cell	where the part of the cell is found		
	only in animal cells	only in plant cells	in both animal and plant cells
cell membrane			
cell wall			
chloroplast			

[2]

Question	Answer	Marks	Further Information
1	part of a cell: cell membrane — in both animal and plant cells: ✓ part of a cell: cell wall — only in plant cells: ✓ part of a cell: chloroplast — only in plant cells: ✓	2	**all three** correct = 2 marks **two** correct = 1 mark **one** correct = 0 marks if more than one tick in a row, 0 marks for that row

4 This question is about blood vessels.

(a) Draw a straight line from each **cross section of a blood vessel** to the correct **letter** showing where the blood vessel is found.



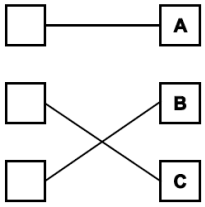
[2]

(b) Name the types of blood vessel labelled **A** and **C**.

A .....

C .....

[2]

Question	Answer	Marks	Further Information
4(a)		2	**all three** correct = 2 marks **one** or **two** correct = 1 mark
4(b)	**A** = artery **C** = vein	2	**Accept** aorta / named artery **Accept** vena cava / named vein

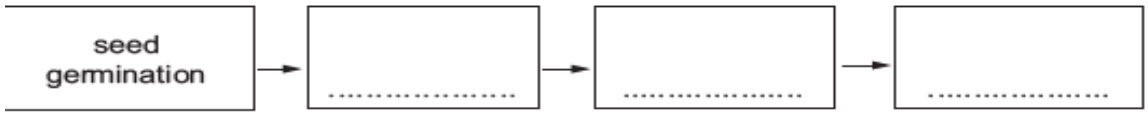
7 This question is about the life cycle of a plant.

(a) These processes take place in the life cycle of a plant.

fertilisation **pollination** **seed formation** **seed germination**

Put the processes in the order in which they occur in the life cycle of a plant.

One has been done for you.



[1]

(b) The diagrams **A** and **B** show two different types of seed.

A **B**

Suggest the method of dispersal for each type of seed.

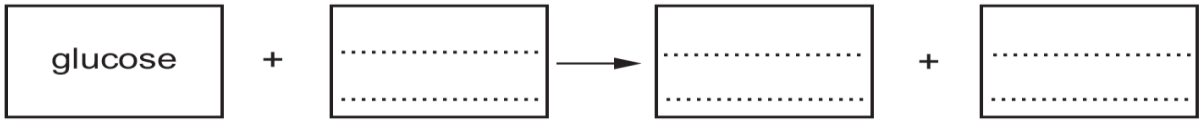
Give a reason for each answer.

	method of seed dispersal	reason
A		
B		

[2]

Question	Answer	Marks	Further Information
7(a)	(seed germination) → pollination → fertilisation → seed formation	1	**all three** in correct order for one mark
7(b)	<table><tr><th></th><th>method of seed dispersal</th><th>reason</th></tr><tr><td>A</td><td>by animals</td><td>have hooks / attach to hair or fur</td></tr><tr><td>B</td><td>by wind</td><td>light (weight) / feathery / parachute shaped</td></tr></table>	2	each method **and** reason correctly linked = 1 mark

Complete the word equation for aerobic respiration.

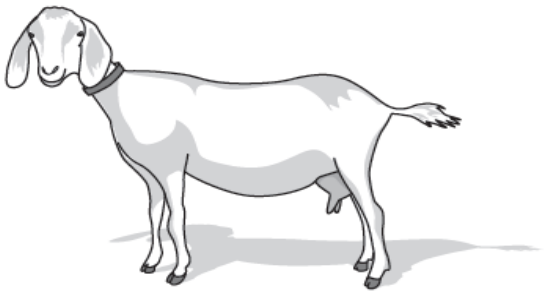


[2]

Question	Answer	Marks	Further Information
13	(glucose) + oxygen ⟶ water + carbon dioxide	2	oxygen as a reactant = 1 mark water and carbon dioxide (either order) as products = 1 mark **Accept** formula but names take precedence • oxygen, O_2 • water, H_2O • carbon dioxide, CO_2

April 2020 Paper 1

A farmer breeds goats for their milk.



(a) The farmer uses selective breeding.

These are the steps he uses.

They are in the wrong order.

A He breeds the female goat with a male goat.

B He repeats the steps for several generations.

C He chooses a female goat that produces a lot of milk.

D He breeds the female offspring with a male goat.

E He chooses a female offspring that also produces a lot of milk.

Put the steps in the correct order.

One has been done for you.

		E		

[2]

(b) The characteristic the farmer chooses in his female goats is producing lots of milk.

Suggest **one other** characteristic the farmer wants in his goats.

.....

[1]

(c) Natural selection is the way new varieties of animals form in the wild.

Which scientist developed the idea of natural selection?

Circle the correct answer.

Copernicus

Darwin

Galileo

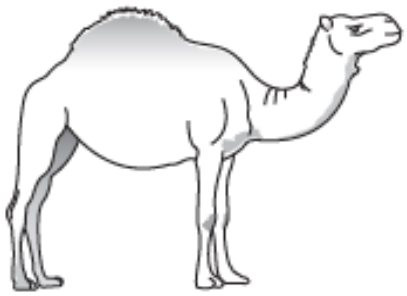
Pasteur

Rutherford

[1]

Question	Answer	Marks	Further Information
1(a)	**C** **A** (E) **D** **B**	2	**C** and **A** correct = 1 mark **D** and **B** correct = 1 mark
1(b)	good tasting milk / disease free / healthy	1	**Ignore** lots of milk **Accept** size / meat production / docile / good temperament
1(c)	Copernicus **Darwin** Galileo Pasteur Rutherford	1	

(a) Look at the picture of a camel.



Camels live in hot dry deserts.

They have many adaptations to help them survive.

Complete the table to explain how a camel's adaptations help it survive.

The first one has been done for you.

adaptation	explanation
fat in hump only	so that the rest of the body has less insulation
large flat feet	.....
thick eyelashes	.....
does not produce sweat	.....

[3]

(b) Animals that live in the cold have different adaptations.

Suggest **two** adaptations that help animals survive in the cold.

1 .....

2 .....

[2]

Question	Answer	Marks	Further Information
4(a)	large flat feet — **stop sinking into sand** thick eyelashes — **stop sand getting into eyes** does not produce sweat — **stop too much water loss or stop dehydration**	3	each correct line = 1 mark
4(b)	**any two from** thick fur lots of fat small ears short legs small surface area to volume ratio greasy coat large feet	2	each correct answer = 1 mark **Accept** other valid answers

7 Water and minerals move through flowering plants.

(a) Complete the sentences about how water and minerals move through a plant.

Choose parts of a plant from the list.

Each part can be used once, more than once or not at all.

palisade mesophyll **phloem** **root hair** **xylem**

Water and minerals enter plants through the ..... cells.

The water and mineral solution is transported in the stems through

..... cells.

The solution reaches the ..... cells in the leaves and is used for growth. [3]

(b) Plants need water to make sugar.

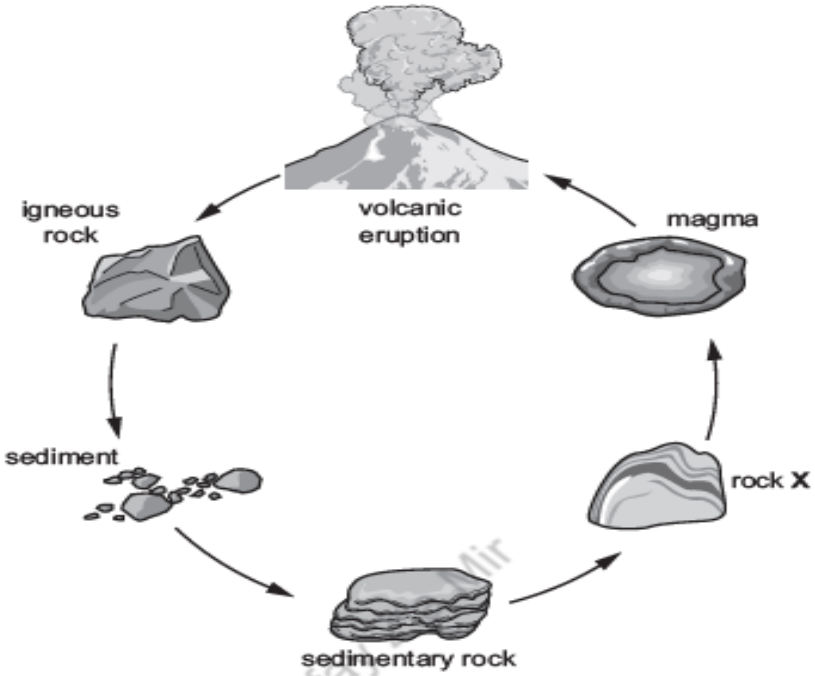
Name **two other** things that plants need to make sugar.

..... **and** .....

[2]

Question	Answer	Marks	Further Information
7(a)	Water and minerals enter plants through the **root hair** cells. The water and mineral solution is transported in the stems through **xylem** cells. The solution reaches the **palisade mesophyll** cells in the leaves and is used for growth.	3	each correctly sentence = 1 mark
7(b)	**any two from** carbon dioxide light chlorophyll enzymes	2	each correct answer = 1 mark

The diagram shows different types of rocks and how they form.



(a) Sedimentary rocks can be turned into rock **X** by heat and pressure.

What type of rock is **X**?

.....

[1]

(b) Which layer of the Earth contains magma?

Circle the correct answer.

atmosphere **inner core** **mantle** **outer core**

[1]

(c) Sedimentary rocks often contain the remains of dead animals and plants from millions of years ago.

What word is used to describe these remains?

.....

[1]

(d) Different types of soil have different amounts of organic matter in them.

Which type of soil contains the most organic matter?

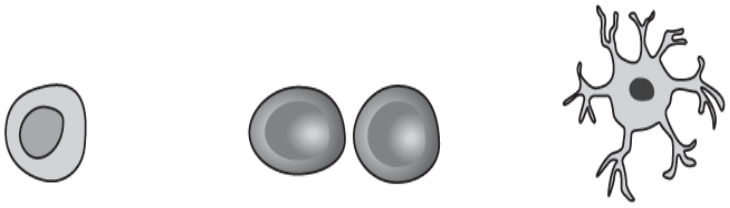
Circle the correct answer.

clay **loam** **sandy** **silt**

[1]

Question	Answer	Marks	Further Information
8(a)	metamorphic	1	**Accept** named metamorphic rock
8(b)	atmosphere inner core **mantle** outer core	1	more than one answer = 0 marks
8(c)	fossils	1	
8(d)	clay **loam** sandy silt	1	more than one answer = 0 marks

Look at the diagrams of cells.



cheek cell red blood cells nerve cell

(a) Describe **one** way the structure of a nerve cell is different to a cheek cell.

.....

[1]

(b) The structure of a red blood cell is adapted for its function.

Explain how.

function .....

adaptation .....

.....

[2]

Question	Answer	Marks	Further Information
10(a)	nerve cell has extensions/nerve cell has connections with other cells/nerve cell has larger surface area	1	**Accept** nerve cell is not round **Ignore** have different shapes
10(b)	function – to carry oxygen adaptation – (idea of) large surface area/rounded shape/flexible/ has haemoglobin/no nucleus	2	function = 1 mark adaptation = 1 mark **Note** accept mark points wherever they are written

April 2020 Paper 2