

AQA Core Science
B1
Revision Booklet

Name _____

Teacher _____

Biology 1

The table below states what the examiners expect you to know. Assess your knowledge and understanding at different times during your revision lessons. Use the following key

Red: no knowledge or understanding
 Yellow: some knowledge or understanding – needs more work
 Green: confident in knowledge or understanding

| Outcome: student should be able to | Start | Middle | End |
|--|--------------|---------------|------------|
| Diet and exercise | | | |
| To know what a healthy diet is and the consequences of not having one | | | |
| To explain the effect of exercise and metabolic rate on our energy balance | | | |
| Infectious Disease | | | |
| To explain how our body can protect itself against infectious disease | | | |
| To explain the role of white blood cells | | | |
| To explain the use of antibiotics and how antibiotic resistance can arise | | | |
| To explain stage by stage the process of vaccinations | | | |
| Nerves and Hormones | | | |
| To give examples of receptors and the stimuli they pick up | | | |
| To describe the path of a reflex pathway. | | | |
| To give examples of what conditions the body needs to control and how this is done | | | |
| The use of hormones in increasing and decreasing fertility. | | | |
| To explain the role of auxin in controlling plant hormones. | | | |
| Drugs | | | |
| To explain the process of drug testing. | | | |
| To explain the Thalidomide story and its effect on drug testing. | | | |
| Adaptation | | | |
| To list what plants and animals compete for. | | | |
| To identify and explain adaptations for specific organisms | | | |
| To predict how environmental changes will affect organisms. | | | |
| Energy and Biomass | | | |
| To draw pyramids of biomass and explain why they are always a pyramid shape | | | |
| Waste Materials | | | |
| To explain the main stages of the carbon cycle | | | |
| To identify how decay occurs and the conditions needed. | | | |
| Genes | | | |
| To explain why organisms are different | | | |
| Give different methods of cloning within plants and animals | | | |
| To explain the process of genetic modification and the issues surrounding this | | | |
| Evolution | | | |
| To explain Darwins Theory of Natural Selection. | | | |
| Explain why this theory was only gradually accepted. | | | |

Diet and Exercise

1. Complete the table below to show the seven components of a balanced diet.

| Food Group | Needed For | Found in |
|------------|------------|----------|
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2. What does the term metabolic rate mean?

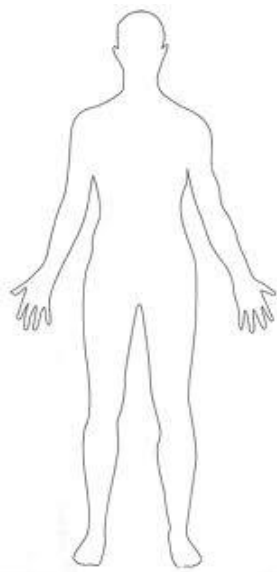
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3. Give three factors which affect metabolic rate.

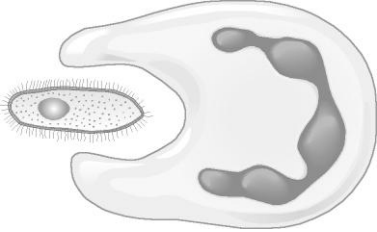
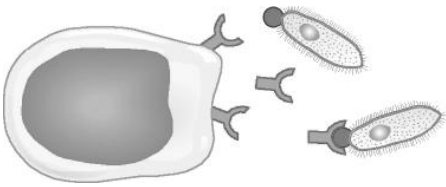
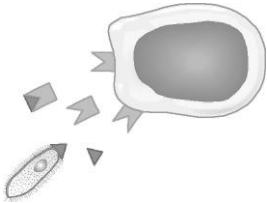
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Infectious Disease

1. Label the diagram below with the bodies defence mechanisms



2) Complete the table below to explain the role of white blood cells

| Role of white blood cells | How it protects you against disease |
|---|-------------------------------------|
| <p>Ingesting microorganisms</p>  | |
| <p>Producing antibodies</p>  | |
| <p>Producing antitoxins</p>  | |

3. What is an antibiotic?

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4) Describe what an antibiotic resistant bacteria is and how it can arise (include the term mutation in your answer)

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5) What is a vaccine and how can it protect against disease?

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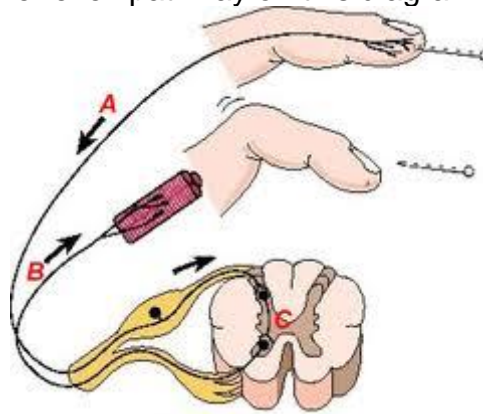
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Nerves and Hormones

1) Complete the flow diagram below which shows the path of a reflex pathway.

S _____
R _____
S _____
R _____
M _____
E _____
R _____

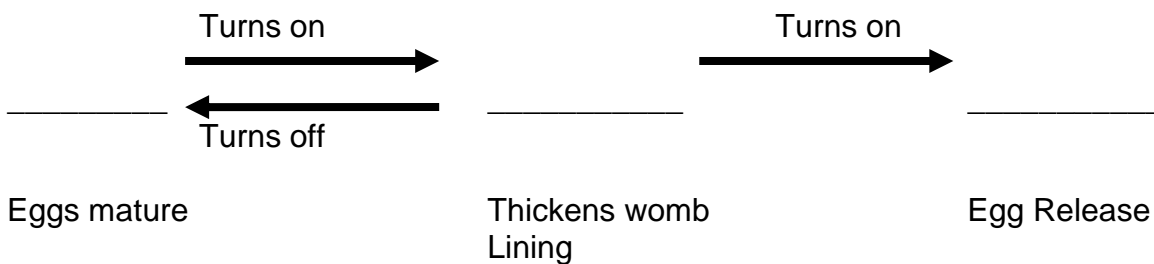
2) Label the seven parts of the reflex pathway on this diagram



3) What is a synapse?

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4) Complete the following diagram showing the role of hormones in the menstrual cycle.



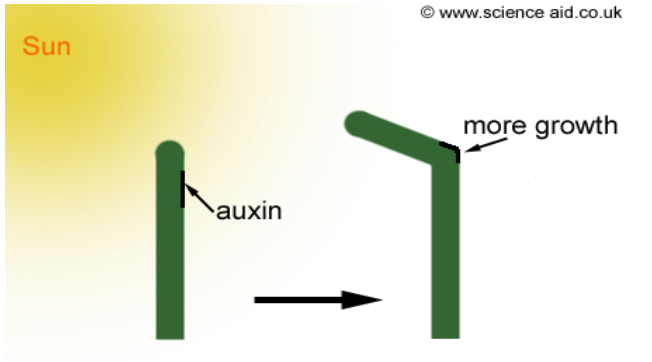

5) Which hormone is contained in the pill and how does this prevent egg release?

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6) Describe the process of IVF (include the name of the main hormone involved)

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7) In the spaces below add to/complete the three diagrams to show the role of auxin in phototropism and gravitropism in plants then explain each diagram in the box.

| | |
|---|---|
|  <p>© www.science aid.co.uk</p> | <p>1) Phototropism</p> |
|  | <p>2) Gravitropism in Roots</p> |
| | <p>3) Gravitropism in Shoots</p> |

Drugs

1) In the space below describe the main stages involved in drug testing.

2) What is a placebo and why are they used in drug trials?

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Adaptation

1) Give four things that animals compete for.

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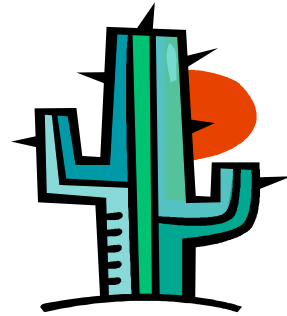
2) Give four things that plants compete for.

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3) Give three things that extremophiles may be tolerant to.

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4) Label the diagrams below to show the adaptations of each organism to their environment.

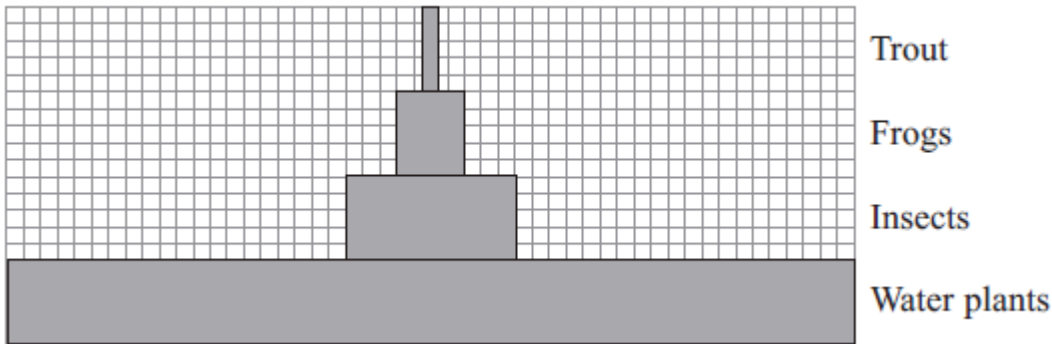


5) Name two living organisms which can be used as pollution indicators and what they can be used to measure.

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Energy Flows

The diagram shows a pyramid of biomass drawn to scale.



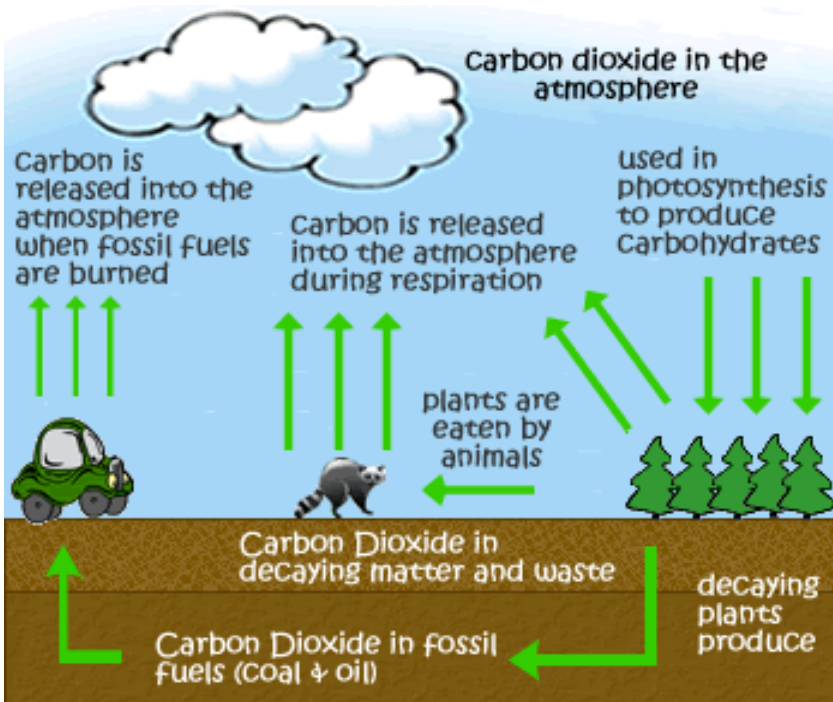
1) What is the source of energy for the water plants?

2) The ratio of the biomass of water plants to the biomass of insects is 5 : 1.
Calculate the ratio of the biomass of insects to the biomass of frogs.
Show clearly how you work out your answer.

ratio = : 1

3) Pyramids of biomass are always a pyramid shape. Give **two** reasons why the biomass of the frog population is smaller than the biomass of the insect population.

4) The diagram below shows the carbon cycle use it along with your own knowledge to answer the following exam question. Some insects die. Describe how the carbon in the dead insect bodies may be recycled.



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5) What role do microbes play in the carbon cycle?

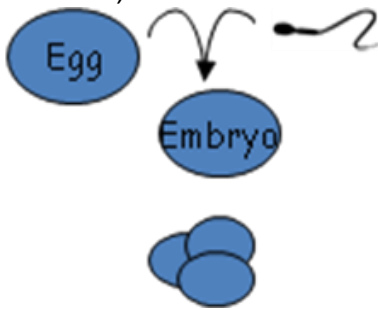
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6) Which three things do microbes involved in decay require?

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Genes

1) Label the following diagram and then explain how embryo cloning is carried out.



2) Name two methods which can be used to clone plants and give a brief description of each.

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3) Describe the process of genetic engineering.

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Evolution

1) What is a mutation?

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2) Darwin came up with the theory of Natural Selection, write your own description of this theory.

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3) Give two reasons why people only gradually accepted Darwins theory.

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TOP FIVE

List the TOP 5 things to remember about...

Body Defence Mechanisms

- 1.
- 2.
- 3.
- 4.
- 5.

List the TOP 5 things to remember about...

- 1.
- 2.
- 3.
- 4.
- 5.

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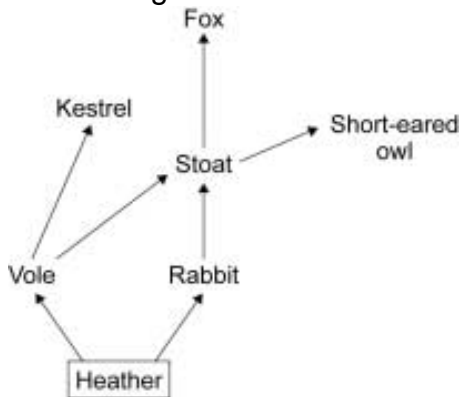
- 1.
- 2.
- 3.
- 4.
- 5.

List the TOP 5 things to remember about...

- 1.
- 2.
- 3.
- 4.
- 5.

Exam Questions

1 The diagram below shows a food web for some of the organisms that live on moorland.



Only a small percentage of the Sun’s energy captured by the heather is eventually incorporated into the body tissues of the fox.

Explain, as fully as you can, what happens to the rest of the energy captured by the heather.

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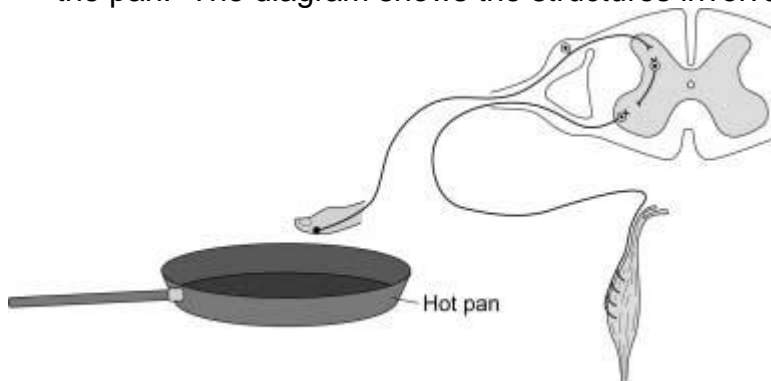
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2) A person accidentally touches a hot pan. Her hand automatically moves away from the pan. The diagram shows the structures involved in this action.



Describe fully how the structures shown in the diagram bring about this reflex action. (6 Marks)

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Read the passage about the use of antibiotics in food production.

3 (a) Explain how a population of antibiotic-resistant bacteria might develop from non-resistant bacteria.

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(3 marks)

3 (b) Suggest **two** reasons why it is an advantage to keep farm animals disease free.

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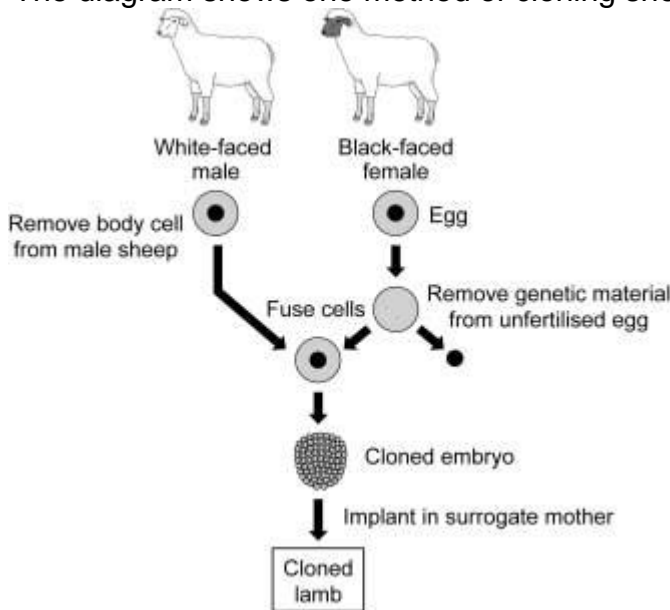
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(2 marks)

4 The diagram shows one method of cloning sheep.



4(a) The fusion of the body cell from the male sheep and the egg from the female sheep is an example of asexual reproduction. Explain why (2marks)

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4(b) (i) Give the gender and face colour of the cloned lamb (1mark)

Gender Face colour

4 (b) (ii) Give the reasons for your choice(2marks)

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