

## 2.2.3 Blood

### AQA GCSE Biology (Higher) Question and answer notes

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#### How to use these notes

These notes cover everything you need to know for this part of the specification. They have been written in question-answer format to make them easier for you to study from.

In order to study successfully, I recommend you do the following for each question and answer:

- Read it carefully and make sure you **understand** it.
- **Memorise** the answer.
- **Practice** applying your understanding to past exam questions.

A good way to memorise information is to use **retrieval practice**. This is when you practise retrieving information from your memory. You could do this by making a flashcard for each question with the question on one side and the answer on the other. Or you could use a flashcard app. Alternatively, use a sheet of paper to cover up the answer so you can only see the question. Try to answer the question and then check how you did.

You should practise retrieving each answer from your memory until you can do it perfectly. Even once you can retrieve the answer perfectly, your ability to retrieve it will probably fade as time passes without practising. Therefore you will need to keep going back to the questions that you have previously mastered and practising them again. However, each time you re-learn the answer, the memory will be stronger and will last longer than the time before.

#### What is blood?

Blood is a tissue which transports substances around the bodies of animals. It consists of a liquid with various types of cells suspended in it.

#### What are the components of blood?

The components of blood are:

- Plasma
- Red blood cells
- White blood cells
- Platelets

**What is plasma? What is its function?**

Plasma is the liquid part of blood. Its function is to transport the following things around the body:

- Red blood cells
- White blood cells
- Platelets
- Carbon dioxide
- Urea
- Food molecules that have been absorbed from the digestive system

Note: the blood cells and platelets are suspended in the plasma, and the carbon dioxide, urea and food molecules are dissolved in it.

**What are red blood cells? What is their function?**

Red blood cells are red coloured cells found in blood. Their function is to transport oxygen from the lungs around the body.

**How are red blood cells adapted to their function?**

Red blood cells are adapted to their function in the following ways:

- They contain a pigment called haemoglobin which can bind to oxygen.
- They have no nucleus, which frees up space, allowing them to contain more haemoglobin and therefore carry more oxygen.
- They have a biconcave shape (the centre of the cell is pulled in on both sides). This gives a higher surface area to oxygen to diffuse in and out of the cell.

**What are white blood cells? What is their function?**

White blood cells are white coloured cells found in blood. They are part of the immune system and their function is to protect the body from infection.

**How are white blood cells adapted to their function?**

Different white blood cells are adapted to their function in different ways:

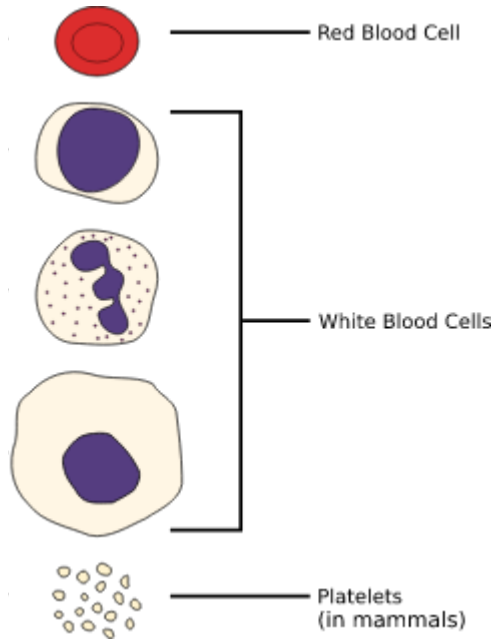
- Some produce proteins called antibodies, which help to protect the body against pathogens (organisms that cause disease).
- Some are able to engulf and destroy pathogens.
- Some produce antitoxins, which protect the body from toxins made by pathogens.

### What are platelets?

Platelets are fragments of dead cells found in the blood. Their function is to form blood clots. When a blood vessel is cut open, platelets clump together to form a blood clot to block the hole.

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What blood cells and platelets look like:



(Platelets are only found in mammals).