

EXAMINER TIPS FOR IGCSE BIOLOGY (0610)

How to use these tips

These tips highlight some common mistakes made by students. They are collected under various subheadings to help you when you revise a particular topic. Many of the tips relate to June 2004 papers.

General Advice

The questions are meant to let you show the biology you know. They are not designed to trick you into giving the wrong answer.

Where you have to write in your own words, use short sentences. If you try to write long involved sentences you might get mixed up. Where your answer is not clear it is harder to see if it includes correct statements.

In multiple choice questions there is only one mark for a correct answer. Other sorts of question show how many marks at the end of each part like this [2]. If you write a long answer for a question which has [1] in the margin you cannot have more than one mark for it. You might be wasting time.

Read the whole of a question carefully before you begin to answer it. There might be parts which need similar answers. Decide what the difference between them is. If you write exactly the same thing in different parts, it is almost certain that only one of them will be marked as a correct answer.

Often you will be asked to write down something you have learned. When you are revising for your exam, make sure you have learned the meanings of the common terms for processes in biology, e.g. photosynthesis, osmosis, fermentation. In the revision checklist you are given a list of the terms which you should be able to "define". Consider ideas like level of organisation, natural selection, global warming. Make sure you can write down what these mean.

Other parts of questions may ask you to use what you have already learnt in a new situation.

Answer each question as far as you can. Do not spend a long time staring at a question. If you have forgotten something, go on to the next question or part of a question. Come back to the ones you found difficult when you have finished all of the paper. You may then find that you have remembered an answer you left out. Some difficult parts may seem easier the second time round.

Try not to leave blanks. You will not gain any marks if you leave questions unanswered. However do not write something unconnected with the question because that will not gain marks either. It only wastes time.

Read all the instructions. Do what they tell you. If a question says "*Show your working*" when you have to do a calculation, then write one or two lines to show how you got your answer. Even if your final answer is incorrect you may be given a mark for setting about it in the right way.

In the Revision Checklist there is a glossary of terms used in biology papers (section 4.3 Command words and phrases)... This is very useful. It helps you to decide how much you should write when questions asks you to "state", or "define" or "explain" something. If a question asks you to "name" something, it usually needs only one word. For example "Name the process by which green plants make sugars" needs "Photosynthesis" for the answer. You don't need to write anything more.

Spelling

Some biological terms are difficult to spell. Try to use the correct spelling.

Some biological terms are very similar. Well known examples are "ureter", urethra" and "uterus, e.g. If a mis-spelling is "uretus", it could be "ureters" or "uterus". The person marking your answer cannot choose for you.

Mitosis and Meiosis need to be distinguished carefully. So do ovum, ova ovary and ovule; testes and testa; sucrose and sucrase.

If similar terms are found in the same topic you have to be even more careful, e.g. urea and urine,

Frequently confused terms

Although they are not really similar words there are other pairs of terms which are frequently muddled, e.g. semen and sperm

You should check with your teacher if you are unsure of the different meanings between biological terms.

Lists

If a question asks you to name two things which fulfil a definition only the first two will be marked. If you write more than two and the first is correct but the second one is wrong, you will only get the mark for the first one. Even if the third answer is correct, it will not be marked. This is because the examiner cannot choose the correct answers from a list.

Paper 1 Tips

Each question tests just one thing. Try to decide what the question is testing when you read it. If the question asks "*What is a characteristic feature of all living things?*"

You need to know the characteristic features of living things to answer this question. Perhaps you know a quick way of remembering all seven, like MRS GREN for Movement, Respiration, Sensitivity, Growth, Reproduction, Excretion and Nutrition or the first letters of Real elephants grow massive red feet slowly.

If the question shows you a diagram of the circulatory system and asks

"In which vessel will absorbed alcohol first be found?"

You need to consider what the question is asking you. Is the question about digestion? Is it about excretion (of alcohol)? Is it about the circulation?

The question is asking about something absorbed from the gut to be transported, so it is about circulation. Which vessel carries substances absorbed by the gut? Answer "The Hepatic Portal Vein". So you have to choose the letter which labels the hepatic portal vein.

There is no pattern in the letter order of correct answers. The same letter could be the correct for several answers in a row. A might be the correct answers for more questions than are B, C or D. There could just as well be fewer correct answers shown by one letter than the others. So do not let what you have chosen for the previous questions influence what letter you choose.

Some questions test what you know and understand. Some questions test if you can use what you have learned to understand new data. Do not be upset if the question is about something you have not studied. There will be enough information in the first part to enable you to answer. Remember to ask yourself "What is this question about?"

Paper 2 tips

You should read all of a question before you begin to answer it.

It is important that you follow the instructions given.. If a question asks you to ' *Use examples from . . .* STOP! examples from what? Is it from a diagram like a food web already given? There will be no marks for examples from somewhere else.

Sometimes you have to give examples to show that you understand an idea in Biology. After a diagram of a food web you might be asked to "Explain with reference to the food web, the difference between primary and secondary consumers". Make sure you choose examples from the diagram. Even good examples of primary and secondary consumers from another food chain will not gain marks. You have to know what primary and secondary consumers are. Then you have show that you understand how these terms apply to the food web which is shown in the diagram.

Graphs

If you are asked to draw a graph in your exam you should choose a scale which uses most of the grid.

Choose a simple scale, e.g. one small square is equal to 1 or 2 or 10 units in the data. Do not give yourself the job of multiplying each item in the data by 2/3!

Write the name of the axes and their units, e.g. rate of water loss in g/h

Plot the points exactly using a sharp pencil. Draw the points lightly so that you can rub them out if you need to. Make them more definite when you are sure they are right.

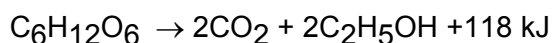
Join the points with a "line of best fit" or a zig zag line.

Note that not all curves have to pass through the point where the two axes meet.

Equations.

You do not have to know chemical symbols for equations of the processes in biology. But it will help you to understand them if you do. However if you are asked to give either a word or a symbol equation, do not combine symbols and words in the same answer e.g. if you have to give the equation for the aerobic respiration by yeast, either write:

Glucose → carbon dioxide + ethanol + energy OR



Do not write something like

glucose → CO₂ + ethanol and energy.

There are some things which can be learnt by heart. For example it could be useful to know the effects of alcohol on the liver, the brain and the stomach

Try to be precise. , e.g. State why magnesium ions are important for healthy plant development.

An answer like "they are needed by the plant" is true but too vague.

"They are needed by the leaves" is still vague.

"Magnesium is needed to make chlorophyll" is a better answer.

"Magnesium is a raw material from which chlorophyll is made." Good answer!

Giving precise answers gives the examiner the opportunity to award you full marks, e.g. a question such as '*suggest what happens if excess nitrogen fertiliser is washed into a stream or pond? [4]*'

could be answered as follows:

Algae and aquatic plants grow faster using the fertiliser.

Algae cover the water surface.

Light cannot pass to Aquatic plants lower down.

These plants die.

Bacteria of decay feed on the dead plants.

Bacteria increase in numbers.

They are aerobic.

They use up more oxygen.

There is not enough oxygen for other organisms which live in the water.

They die.

The process is called eutrophication.

You do not have to include all of these points but you need four of them to receive the four marks available.

If you write "*The fertiliser causes low oxygen and it affects animals in the water.*" it is much too vague for you to gain all four marks.

Be careful with the word 'affect'. If you want to use it, think 'How'. In this example the animals do not have enough oxygen for their respiration and they die.

Paper 3 tips

There is more to read in this paper.

Each numbered question gives you some biological information. The topic is usually the same for all different parts of the question. Read it carefully. Underlining important words will help you to be clear about what you are being asked to do, but do not use highlighters.. Then read the rest of the question.

Related topics might be included, e.g. the information could be about the animals in a particular habitat and what they eat. The first parts of the question might be about the food chains or food webs which include these animals. Another part of the question could be about the structure of one of the animals or about factors in its environment.

Pick out words that include information. If you see 'mammal' in the information you know that the animals are warm blooded and have a circulation like ours If you are only given a Latin name or a name you do not recognise, e.g. "dik-dik", look to see if you are told anything about it. If you are told it is a herbivore, then you know it eats plants.

Follow the instructions. e.g. if asked to '*name two carnivores identified in the text*', the answer must be the appropriate names which appear in the information. If you write

three names and the second one is wrong, there will be no marks for the third. In this example there were only two right answers in the text. There would be no marks for other carnivores names that do not appear in the text and no extra marks for a longer list.

If a question says '*without further reference to carbon dioxide, explain . . .*' you will not gain any marks for correct statements about carbon dioxide

If a question says '*Show your working*', write in the stages of your calculation. There may be one mark for the correct answer, and another mark for how you reached it.

Unfamiliar material

You are more likely to read about events and situations that are new to you in this examination. Do not be alarmed. The question will tell you all the facts you need to know. To gain marks you need to demonstrate that you can connect the biology you *have* learned with the new facts, e.g. you may not have been told anything about how cats inherit the length of their fur. But if you know that the offspring of a cross breed are heterozygous for fur length and the information in the question tells you that the alleles are co-dominant, you know enough to say what length of fur they will have. You will know from your genetics lessons that the features controlled by co-dominant alleles are both expressed in the offspring, so the cats will have medium length fur.

Interpreting data

Some questions give you a table of data and then ask you about it. You need to make use of the information in the table, e.g.. in a table of the composition of normal breast milk and colostrum, it will be possible to see which milk contains more fat, protein and sugar. Don't forget to make clear which is which when you compare them. Write 'colostrum has more protein than normal breast milk.' not "it has more protein." The examiner cannot guess which you thought had more protein.

Tips for Paper 5

Look to see how many marks are given for each question. Divide the time of your examination in proportion to the marks given.

Start by reading the entire first question. Think about the apparatus needed for each step and imagine using it in your mind.

Do the same when you are ready to begin the next question. Check the time to be allowed and imagine following the instructions.

Following the instructions

- Follow the instructions exactly.. Small changes in the method can alter the results.
- Do not take short cuts.
- Label test tubes to help you remember which is which.
- When the instructions say "Wash the apparatus thoroughly after each use." do it. If traces of solutions remain they spoil the next stage.
- If you are told to measure the length of a specimen and show it as a line on your drawing, draw the line.
- Marks are given for following instructions accurately.

Recording your observations.

Recordings can be made as statements in writing or as tables or drawings.

Write down exactly what you see. Do not write an explanation until the question asks for one, e.g. if you add a drop of iodine to a drop of starch solution on a white tile, the colour changes. (It goes blue/black but the iodine was yellow/brown) You should write down 'the colour changed from yellow to black.'

If you add iodine to a drop of water on a white tile. You should write down 'the colour stayed yellow.' You might even notice that it was a paler yellow because the water had diluted the iodine. If you write 'the colour stayed the same', or 'no change', vital information is left out and you will not gain all the marks available.

Use a ruler to draw your tables.

Use all the space available on the paper for your observations.

Include headings for the columns and the rows.

Don't forget the units! Write the units in the headings so that you do not have to keep writing them down,

e.g. Time (mins) or Temperature ($^{\circ}\text{C}$)

Use a well sharpened pencil for drawings and table lines. HB or B is best. It can be rubbed out if necessary.

Neat work helps to keep you calm and feeling in control.

Make drawings as big as the space allows.

Label with ruled labelling lines.

Sometimes observations are heard, felt or smelled as well as seen. Do not leave out fizzing or warming. The smell of a flower or the texture of a fruit could be relevant to your investigation.

There is almost always something to observe, so make sure you record something for each observation.

Conclusions

Base your conclusions on your own results. Do not write the conclusion you have learned but the conclusion which follows from your results, e.g. in an investigation you test drops of a mixture of sodium chloride, amylase and starch solution with iodine once a minute for eight minutes. Then you repeat this with a mixture of water, amylase and starch solutions. The blue/black colour might disappear sooner in one test tube than the other. Even if you know that sodium chloride usually makes amylase work faster, you must write down the results from YOUR investigation. You must draw conclusions from YOUR results. If the colour in both tubes changes at the same time, the conclusion has to be that the sodium chloride made no difference. That is the correct conclusion drawn from your observations.

Tips for paper 6

Read through each question before you begin to answer it. Imagine yourself doing the practical which has produced the results in the questions.

Recording observations

Recordings can be statements in writing or shown as tables or drawings.

Use a ruler to draw your tables.

Use all the space on the paper to make your observations.

Make headings for the columns and the rows.

Don't forget the units! Put them in the headings so that you do not have to keep writing them.,

e.g. Time (mins) or Temperature ($^{\circ}\text{C}$)

Use a well sharpened pencil for drawings and table lines. HB or B is best. It can be rubbed out if you make a mistake.

Neat work helps to keep you calm and feeling in control.

Make drawings as big as the space allows.

Label with ruled labelling lines.

Try to make accurate measurements and don't forget the units!

Write down exactly what you see. Do not write an explanation until the question asks for one.

Results and drawing conclusions

must be based on your measurements (observations) or on the results given in the question. Do not rely on something you have learned as "the right answer".

Planning investigations

Very often an investigation needs to have two parts; the experiment and the control. The difference between them is called a variable. When you read the question, try to see what the one difference is and decide which part of the investigation is the control.

If you have to make calculations use the blank pages within the paper, but do not write in the examiner's margin.

Write neatly. The examiner might be able to give you some marks if your calculations show how you set about a problem if did not have time to finish it.