

O Level Biology (5158)

Tips and general pointers



O Level Biology

Subject code: 5158

Level of study: O Levels

Video Course Instructor: Bureau Nicolas Khairul

Tips and general pointers

Overview:

1. Studying the content
2. Command terms
3. MCQs
4. Essay questions



Studying the content

- Biology is a very content-heavy subject – no running away from reading and understanding facts and concepts
- Factual knowledge is important (enzymes involved in digestion, mitosis) but so is conceptual knowledge (cardiac cycle, homeostasis)
- For factual knowledge, mnemonics or other methods can help
 - Complementary base pairing, curves pair with curves – CG, AT
 - Intercostal muscles during breathing – RICE and ERIC



Studying the content

- Use of analogies or reasoning the concepts can help with understanding difficult concepts (homeostasis needs to bring body back to normal → insulin will reduce the raised blood glucose → how do we decrease blood glucose? → convert to something else, push it into cells, use more at a faster rate)
- Revisiting concepts a few times on separate occasions can help you with internalising them (understand more and more of it each time you visit it)



Command terms

- Command terms give you an idea of what to include in your answer or how to answer the questions
- It is important to pay close attention to the command term and answer accordingly
- Some command terms may require greater depth in the answer while some may only require a simple description



Command terms

- **Compare** requires both **similarities** and **differences** in your answer
 - **Compare** DNA and RNA: remember to include similarities and differences such as “both have **4 bases**” and “bases in DNA are (A, C, G and...) **thymine** while bases in RNA are (A, C, G and...) **uracil**”
- **Calculate** requires a numerical **answer** and **working** to be shown
 - **Calculate** the heart rate of a person whose cardiac cycle takes 0.8 s:
Heart rate = $60 / 0.8 = 72$ **beats per minute** (remember to include units)
- **Define** involves a **statement** or **paraphrased definition** of the term. Do not include the term being defined in the definition!
 - **Define** the term digestion: “**digestion** is the process when food is **digested** into smaller molecules” (this is a poor and incomplete definition)



Command terms

- **Describe** requires the **main points** of the concept and in the case of experiments, the **observations** as well
 - **Describe** what happens when a strip of fresh potato is placed in a beaker of pure water for 1 hour: “strip becomes **longer and thicker** due to **osmosis** and **water potential** of the water is higher...”
- **Explain** requires logical **reasoning** and **reference** to a theory or concept learnt
 - **Explain** why the man found it harder to breathe as he ascended up the mountain: “**air pressure decreased** as he ascended...more effort needed to **expand thoracic volume** to cause air to rush into lungs...”



Tackling MCQs

- There are a variety of methods to tackling MCQs
- One way is by reading the question and immediately answering based on options given
- Another way is by **elimination**
- Look at every option and consider if it is correct and eliminate it if it not
- Eliminate options that are very obviously wrong
- Helps in narrowing the choices and aids in avoiding careless mistakes



Tackling essay questions

- Read the question **carefully** and pay attention to the **command term**
- Understand what **concept** the question is testing you on
 - Describe the role of the pancreas in maintaining blood glucose concentration
- Spend about 1-2 min thinking about the points and **structuring** them in a **logical** fashion
 - This helps you think **clearly** and helps avoid **missing/forgetting** important points
 - Also helps the marker clearly identify marking points to award marks
- **Re-read** your answer to check for any mistakes



Thank you

