

GCSE Biology/ Science 5BI 1F/01 (Foundation Tier) Support Materials

**Top 10 Tips from the Principal Examiner for
B1 and exemplar materials for the six-marker
questions from the November 2011 session**

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Top 10 Tips from the Principal Examiner for Biology 5BI1F (Foundation Tier)

Below are the Top ten areas for development for centres based on the November 2011 series of examinations:

1. Candidates should take care with the **reading of graphical data** and should look at the units/label axes that are provided to ensure that full credit can be awarded on such questions.
2. **Mathematical opportunities** should be expected on all science papers. Candidates should always show their working so that some credit can be given even where a wrong answer is obtained.
3. Candidates should **avoid simply repeating** exactly what is mentioned in the stem of the question as this will not usually be credited.
4. When asked to '**compare ...**', candidates should state the differences between various data, using quantitative measures if supplied. Any similarities should also be highlighted.
5. The best way to respond to the command word '**explain**' is for candidates to state what is happening and then using the linking word "because". This will then tend to lead them down the path of writing some form of explanation to the question.
6. Candidates should be advised that **pyramids of biomass** should be drawn in a blocked manner and take note of the figures given to ensure that these blocks are drawn to scale.
7. Questions that focus on **genetics** and the symptoms of the genetic disorders should be answered using scientific terminology when commenting on the effects on the body. For example, cystic fibrosis should have comments on the production of thicker mucus that this will coat the lungs reducing the efficiency of oxygen diffusion.
8. Candidates need to practise **recall of descriptions** of terms associated with genetic and thermoregulatory processes (for example genotypes, homozygous, heterozygous, homeostasis) and be able to spell these terms correctly.
9. Candidates should be familiar with the aspects of plant growth **phototropism** and **gravitropism**.
10. The **extended writing questions**, marked out of 6, are marked according to the quality of the answer. The questions are likely to have many points that could be provided by the candidates. They must make more two or more statements, explained fully, to score the higher marks.

Exemplar Materials for Question 5(b) (ii)

Sample A

3 marks

This candidate has provided a number of the short term and long term effects of alcohol abuse and therefore can access the second band of the marking grid. The effects are simply described in terms of how blurred vision can affect the abuser and how the lowering of inhibitions is a cause for concern. The longer term effects are stated and as these are the main two examiners were looking for the candidate is given credit. The structure of the answer is appropriate and spelling, punctuation and grammar are used well allowing the candidate to access 3 marks.

* (ii) Describe the short term and the long term effects of alcohol abuse.

(6)

The short-term effects of alcohol are blurred vision, which means you won't be able to see clearly, lowered inhibition, which means you might do things you normally wouldn't and slow reactions, which means that ^{for example} instead of catching a ball or catching a ball that's thrown towards you, you just let it hit you. The long-term effects of alcohol are brain damage and liver disease.

Sample B

3 marks

Although this candidate has provided a simple description of both long and short term effects, they have failed to use the spelling and grammar appropriately and thus has only accessed the lower boundary of level two for indicative content. There are spelling mistakes, for example "dizzines", and incorrect use of grammar for "hangover" and "...are liver damage", however the structure seems adequate. 3 marks were awarded.

* (ii) Describe the short term and the long term effects of alcohol abuse. (6)

The short term effects of alcohol are dizzines, hangover and aggression. The long term effects are liver damage.

Sample C

4 marks

This candidate has mentioned both the long term effects of alcohol abuse, albeit simply. The language used is simple yet descriptive. The candidate has earned credit by structuring the answer with clarity and has been awarded with good use of spelling, punctuation and grammar. The answer has used some of the indicative content from the answer box yet could have been expanded to access level three with more long term effects of alcohol abuse. 4 marks were awarded here.

* (ii) Describe the short term and the long term effects of alcohol abuse. (6)

The short term ^{effects} of alcohol abuse is a hangover, falling over, car crash
the long term effects of alcohol abuse is liver damage.

Sample D

1 mark

This candidate has not entered the higher levels and can only be awarded 1 mark due to no short term effects being credited (being ill the next day is not a suitable answer for the effect of a hangover, for example). Therefore, the SPG mark has to allow for 1 or 2 marks. 1 mark has been decided owing to the lack of grammatical structure ("be come addictive to"). Also, the use of capitalisation is unnecessary. 1 mark was awarded.

*(ii) Describe the short term and the long term effects of alcohol abuse.

The short term effects of alcohol is ⁽⁶⁾ being ill the next day,

The long term effect of alcohol is you can end up getting liver damage which means ~~could lead to get~~ ALSO you could be come addictive to alcohol so need it all the time and you could die from this.

Exemplar Materials for Question 6(d)

Sample A

4 marks

The candidate has been credited here for providing two well detailed thermoregulatory mechanisms that are affected by burns. If they had mentioned one more then they would have moved into level three and awarded 6 marks. The candidate uses a well executed structure to the answer and has also provided scientifically recognised words to support the answer including "piloerection", for example. The SPG is good and the consequences follow the thermoregulatory issue displaying good structure to the answer. A well rounded 4 marks.

*d) If a person is badly burnt the hairs on the skin are lost and blisters can cover the surface of the skin.

Explain how burns to the skin affect temperature regulation in the human body.

(6)

The person would become cold and be unable to cool down quickly; their hairs would be lost this means that they would have no hair to piloerect and therefore be unable to regulate fast enough. Piloerection allows the body to keep warm; ~~if~~ it acts like a fur. Also the burning would ~~destroy~~ ^{cause harm} sweat glands meaning that they would be unable to produce sweat. The sweat would normally cool them down by going on the skin then evaporating ~~and~~ and taking ~~the~~ ^{some of} heat with them.

Sample B

2 marks

A good answer relating to one of the thermoregulatory mechanisms compromised by severe burns to one's skin. This answer allowed access to the higher mark of level one. The answer displays a good reasoning of the mechanism of the need for hair on the skin and the consequences of this being lost. The comment on the "sweat evaporating" did not score any credit as it was in the incorrect context for the "damaged sweat gland" marks. Overall, a well-structured answer commenting on one mechanism. 2 marks scored.

* (d) If a person is badly burnt the hairs on the skin are lost and blisters can cover the surface of the skin.

Explain how burns to the skin affect temperature regulation in the human body.

(6)

IF a person's skin hairs are burnt, it'll be harder for the body to keep itself warm or cool. ^{For example} when you're too cold your hair stands upright and traps air, which acts as an insulator. When you're too ~~cold~~ ^{hot} your hair relaxes so any ^{hot} air can escape & ~~heat~~ & heat up the sweat, which helps it evaporate. Without the skin hairs, these processes can't be carried out as easily.

Sample C

2 marks

This candidate is unfortunate as the response area crossed out is invalid and cannot be marked.

One manner of thermoregulation has been mentioned with the effects of burning clearly stated. The consequences of such burning are also clearly highlighted. The spelling and use of grammar are sound and the use of punctuation appropriate. 2 marks were awarded here.

* (d) If a person is badly burnt the hairs on the skin are lost and blisters can cover the surface of the skin.

Explain how burns to the skin affect temperature regulation in the human body.

(6)

Burns to the skin can effect temperature regulation in the human body because if blisters are there, the temperature of the environment won't be detected. Also the hairs will have been lost so when the body is cold they can't lie flat to keep the body warm. and when the body is warm

Also when your body is cold your hairs stand up to let heat in and when your body is warm the hairs lie flat to keep heat

(Total for Question 6 = 12 marks)

in. This would not be able to happen because the hairs have been lost.

TOTAL FOR PAPER = 60 MARKS

Sample D

3 marks

This candidate has been able to access level two of the indicative content due to the comment on two mechanisms of thermoregulation processes and the consequences to these of severe burns. These simple explanations are well structured and clear to the examiner. The lack of accuracy with spelling and grammar is unfortunate and has not allowed the candidate to score 4 marks, but rather 3 marks. Words such as "excape" (sic), "sweet" (sic) and "to" rather than "too" are incorrect. There are grammatical errors such as "hair lay flat". The punctuation is also used incorrectly with words such as "wont" (sic). 3 marks were awarded here.

* (d) If a person is badly burnt the hairs on the skin are lost and blisters can cover the surface of the skin.

Explain how burns to the skin affect temperature regulation in the human body.

(6)

When the body is too hot the hair
~~lay~~ ^{lay} flat so heat can excape if
the body is too cold the hairs stand on
head to trap heat in. If the body is
burnt and the hairs on the skin are
lost and blisters then the body
wont have this to help maintaun
body temperature. Also the sweat glands
might have been burnt so when the
body is too hot it wont be able to release
Sweet.

Sample E

1 mark

This candidate has scored 1 mark for mentioning, simply, just one thermoregulatory process and the consequence of severe burns in terms of this mechanism. However, the poor spelling ("tempreature", "bodies") and distinct poor punctuation ("cant", lack of punctuation linking "cold" and "also") has also restricted this candidate from accessing the higher mark of level one. 1 mark was awarded here.

* (d) If a person is badly burnt the hairs on the skin are lost and blisters can cover the surface of the skin.

Explain how burns to the skin affect temperature regulation in the human body.

(6)

It affects the ~~whole body~~ human body's temperature because the body will be ~~warm~~^{cold} and because there are no hairs on that ~~part~~ part of your body you cant trap the heat to keep warm.