

**THE LIGHT (P530/1, 2,)
ADVANCED LEVEL BIOLOGY
PAPER 2**

**ADVANCED LEVEL BIOLOGY
P530/1**

**ADVANCED LEVEL BIOLOGY
IN PRESENTATION**

**UGANDAN STANDARDS
UNEB UACE**

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ADVANCED LEVEL BIOLOGY, MUST KNOW FACTS (P530/2)

Main challenge:

- Candidates do not prepare for paper two/2 in the whole country in terms of revision.

Solutions:

- Paper 2 requires comprehension, basic biology and **all necessary facts**.
- Paper 2 needs a **different method of revision** for a better performance.
- There is also need to balance plant and animal biology.

BIOLOGY P530/1 , P530/2:

- Requires 90% content mastery and 10% concepts.
- Content mastery needs a candidate to spare time and read to "understand" the available contents in text books by reviewing x3 everything read and taking notes of all details/facts.
- Concept topics e.g genetics require strict/ correct knowledge of clear facts/idea.

Excellence in P/2:

Requires two major things:

- (i) Consolidated biology (all facts).
- (ii) Correct answering in terms of presentation standards at marking levels in UNEB/UACE.

Excellent (good marks in Section A ($\frac{34+}{40}$) and atleast $\frac{14+}{20}$ in each question in section B.

Precise and logical answering is also required.

NB

Section A is the back bone of paper 2. A candidate must pass it highly for a better grade.

SECTION A (40 MARKS)

- Question 1 in section A is made up of three (3) important /vital parts;
 - (i) The introduction
 - (ii) Data (table graphs) or both
 - (iii) Questions

The introduction of Qn 1:

- Read the introduction three times and using pencil, identify **words, terms** (biological) and phrases (guide statements) words.
- When you find punctuation, stop and ask why?
- From the introduction, come up with three things:
 - (i) Key words/items used:
 - ❖ Define or what is meant by the words.
 - ❖ Understand the words/terms first e.g UNEB 2006
UNEB 2015
UNEB 2016
 - (ii) Relate the experiment to specific area of the topic (s) from which the question is coming.
 - (iii) Try to understand/follow the simple procedure of the experiment/process/ investigation.
 - ❖ The above information will guide you to answer within what is required i.e all your answers will be rooted in the area of the topic (s) and improve your precision in answering.

The data of Qn 1

Graph:

- ❖ Study the factors on the axes.
- ❖ Study the scale of the variable on X-axis/independent factor if the graph is drawn to scale i.e on a graph paper.
- ❖ Graph drawn to scale does not allow any margin of error while a graph not drawn to scale requires/allows some slight margin of error when describing.

Table of values:

- ❖ Study the units and the nature of varying figures.
- ❖ Study the factors if/or if not, plotting is required.
- ❖ When plotting is required ensure that “**TASPC**” is correctly presented.

NB

Do not read the questions before reading the introduction and the data.

The **questions asked in section A:**

There are three (3) main categories/aspects/groups/kinds of questions set

- (i)
 - Describe
 - Compare
 - Comment } Are observational marks. Do not need any biology

- (ii) Explain/(Account for):- Requires observation and Biology.

- (iii)
 - predict
 - Suggest
 - What would } Bonus mark for understanding the introduction.

APPROACHES TO THE DIFFERENT ASPECTS OF QUESTIONS

1. Observational marks/questions which require only observation (critical observation)

(a) Compare:

- A candidate is required to present
 - Similarities.
 - Differences.

(i) Similarities:

- Start in both/ both when answering.
- Areas of observation recorded in similarity include

A. Peak /maximum reached (3 answers needed)

- The peak /maximum (do not quote figures)
- How have they reached the peak e.g both rise/increase to reach the peak.
- what happens after the peak e.g Both decline /decrease after the peak.

B. Point of intersections:

- Quote the figure (s) on X-axis and the unit where both are equal.
- Start with statement.

C. Trends/patterns which are similar:- Range needed

- Start with the statement and end with the range and units.

D. Any other observation which according you is a similarity e.g UNEB 2015. In both the rate of uptake of glucose did not react a maximum.

Differences:

- Use the words while/ whereas when answering.
- Where range is required write the statement first, then the range
- Areas of observation recorded as difference include:

A. The peak/maximum reached (3 answers needed)

- The levels of the peaks
 - lower maximum reached
 - higher maximum reached
- When the peaks were reached. (Quote the figure of X-axis and unit) start with statement and then the fig in X-axis/units
- What happens after the peak/maximum reached

B. Trends/patterns which appear different (range needed)

- The statement must come first and then the range/unit.

C. Any other differences:

- e.g
- levels within a certain range
 - starting points
 - ending points etc

NB

When asked to compare in section A, write as many as you can. On many occasions, examiners increase the marks.

(b) Describe

- Has many aspects which include:

1. Describe Trends/changes/variation/patterns:

- Requires range and statement
- Start with range and then descriptive word (statement)

Words used

- o Show/gradual
- o Constant
- o Rapid/sharp/steep/drastic/exponentially/ fast
- o Dependent factor is described qualitatively using words
- o Independent factor is described quantitatively.
- o High and low are descriptive words
- o Keep referring to dependant variable
- o Use a ruler to identify the trends

NB

No need to start from initial point.

2. Describe Relationship:

- Start with range/independent factor and its unit and write statement.

Words used in answering:

- o As
- o When
- o While/whereas
- o Both

Note:

- o Relationship is between two things. Eg Between 3 and 8 minutes, the rate of ration in A increases gradually while in B increases rapidly.

3. Describe Rate/concentration/level etc:

Start from the initial point

Range/units first and then statement

NB

When there are no figures on the axis. Use words to describe (refer to the factor on X-axis e.g at low temp/ turbidity /speed of water)

As an important word to be used to express independent factor.

4. Describe with reference to the dependent factors e.g UNEB 2016

Refer to the independent factor using words and address the dependent factor using words.

5. Describe effect:

- Look at the effects only with reference to the factor on X-axis/independent variable.
- Do not describe trend/change/variation/pattern
- Begin with the independent variables

Words used when answering description of effects

- As – (for independent factor)
- Results/leads to/causes

e.g As temperature increases upto optimum, it leads to /causes/results into an increase in rate of enzyme reaction. As temperature increases beyond the optimum, it causes decrease in rate of enzyme reaction.

WORDS NOT NEEDED

The following **MUST NOT BE** used when describing graphical data:

- Steady
- Linear
- Accelerating
- Generally
- Uniformly
- Less, more (these are comparative words) and should not be used when describing trend.

(c) Explain/Account for:

(i) Explain trend/change/variation/pattern

- Range/units
- Description
- Reasons

(ii) Explain effect

- Describe effect
- Give reasons

(iii) Explain relationship

- Range
- Description of relationship
- Reasons

(iv) Rated/level/concentration.

- Range/description
- Reasons

New demand:

Candidates must match observations with reasons e.g UNEB 2015 (Rapid increase because of rapid)

NB

When there are positives and negatives attached to graphical data. Please attach the negative/positive to any range stated.

SECTION B (60 MARKS)

Unlike section A, section B is the most demanding. Question set may not be direct as such "**wrong question approach**" is the main challenge faced by candidates at UNEB level.

Candidates are therefore, advised to read questions carefully, organize their answers (i.e plan what to write and present them logically and precisely illustrating with well labeled diagrams where necessary.

A candidate is encouraged to read all the 5(five) questions in section B, part by part while **looking at the marks with positive mind.**

However, candidates are advised to:

- (i) Maximize marks and avoid losing marks.
- (ii) Understand the instructions used in the question.
- (iii) Understand the magical words/terms used in the instruction.

Choice of question

Depends on:

- (i) Action verb used in the question statement.
- (ii) Marks allocated.
- (iii) Sequence (if any) and extra-phrases used.

A candidate should answer a question when she/he is sure of what is required and has the information needed.

Plan for what to write in the three selected questions before you commit yourself to avoid **off** and **on** works.

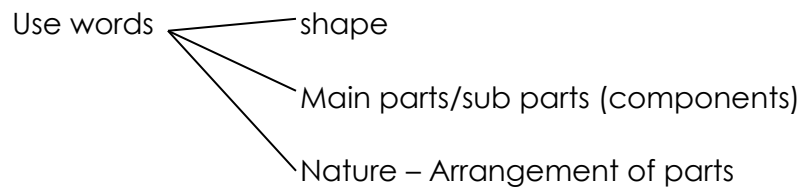
Question terms/action verbs used in section B:

- (i) Define/what is
Here a precise meaning of a word/term as concisely as possible is required.
- (ii) What is meant by:
What you have understood
Give definition plus additional information which is necessary
- (iii) Describe/ Give an account of:
Details of main points using words or diagrams to illustrate are required

Describe the structure

- use diagrams (well labeled and annotated)

OR



Begin/start :

It consists of/it is made up of

Describe process

Presentation requires a logical flow of events in their natural sequence/order.

Marking will stop where a distortion is sited.

Advice:

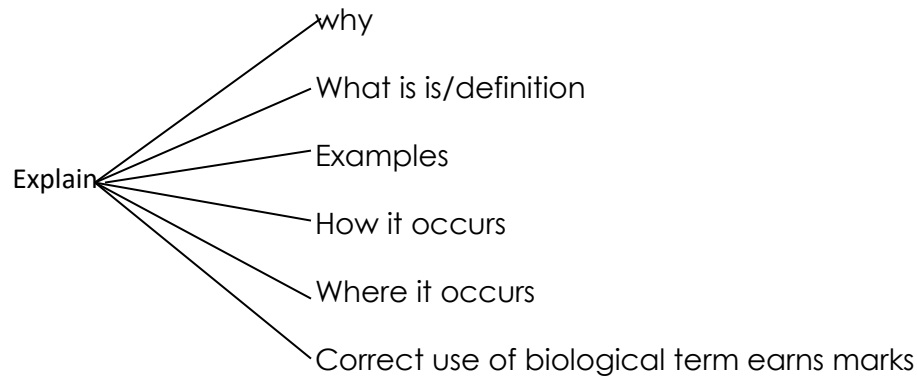
As you revise, pay attention to the natural sequence of occurrence of events of biological processes

(iv) Explain/Account for:

You are expected to give a clear account including either

- Causes
- Reasons
- Mechanism

Explain how C4 plants (C4 plants) avoid photorespiration.



(v) Distinguish /differentiate/how does this differ from that?

- When marks given are (2), just define and use the word whereas/while
- If marks exceed 2 i.e 4/5/6 etc, give differences in a table form with ramming/complementary answers/matching answers

(vi) Compare

- Similarities (start both in both)
- Difference: Use a table therefore, compare difference is related to distinguish/differentiate

(viii) Discuss

- You are expected to give an account where necessary for a range of arguments. e.g Discuss the factors that affect the rate of transpiration
- Give both sides/stands e.g increase in temperature/decrease in temperature

Avoid wrong use of words i.e when temperature is high because high is descriptive word)

(ix) Justify

You are expected to pass judgment on a given material i.e Account for why it is necessary.

Justify the need for circulatory system in large organisms

(x) Outline/suggest

Give the main points. Do not give details references UNEB 2011 (6) (a)

UNEB 2014 (3) (b)

UNEB 2016 (6) (b)

ESSAY WRITING

- **Quality biology essay is built on eight things/standards** which include:

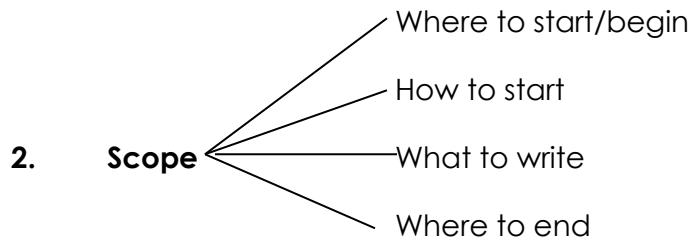
1. How: hand writing
2. Scope
3. Sequence
4. Symbols, avoid abbreviations
5. Wordings
6. Rubric
7. Preparation
8. Diagram

Details:

1. **Diagrams**

Directly called for: with the help /aid of a diagram.....

Indirectly called for: Describe the structure of Begin by drawing/well being e.g UNEB 2011 (2) (a)



3. Wording:

- Do not substitute biological words, with English words
- Wrong use of biological words UNEB 2010/12/13
- A biological word with wrong spelling
- Words helps/acts/assists/enables are not needed. Use for/to
- Dodging biological words.

4. Rubric:

- Rubric of each question e.g state any three. Physical adaptation
- Rubric of the paper e.g answer/attempt any 3 questions in section B

5. Sequence:

A strict order of flow of events is required i.e chronology of events in their natural order of occurrence e.g UNEB 2014 qn (3)

Describe the hormonal interactions from conception to birth

6. Preparation

Using the question paper, plan for all the three questions you want to answer in section B.

SPECIAL NOTES ON PREVIOUS YEARS (P530/2)

UNEB 2016

- Question 1 had bulky introduction; three different graphs with each having 2 curves and no figures.
- Most notable (parts a, b, c only need a study of introduction and data to score 29/40
- "Extra phrase" ecological effects of water hyacinth in Uganda.
- Biological control of weed.

UNEB 2015

Question from movement in and out of cell

- Simple diffusion
- Facilitated diffusion
- A graph drawn to scale with a line indicating maximum uptake (non-reach maximum peak)

3. **UNEB 2014 (Homeostasis)**

- Most failed
- Need to continuously review that idea
- Involved – positive and negative figures on the axis (vertical axis)

4. **UNEB 2010/12/13**

- Students misused the biological word “**hydrolysis**”

5. **UNEB 2011:** was highly failed. Students did not understand/know how to:

Qn 1 (compare, explain difference, need to review)

SECTION B

Hard challenging questions for most candidates.

6. **UNEB 2006**

- Qn 1 had three graphs
- Introduction had vital words extinction/immigration
- Island near shore and island far from the shore (Need to review)

Others:

1. Choose questions according to the tasks required
 - Describe – mechanisms
 - Explain – give a clear account/reasons
2. Choose questions according to the abilities
 - Answers you know
 - Number of answers you know
3. Draw diagram where it is necessary.

- Marks given guides you on what to write
- Space provided also guide you on precision
- Stimulus /graph/table/leading statement is reference for observation
- Action to be taken (verb) and the emphasis/task are most important to answer any section B question in paper 1

NB

4/10 marks are reserved for candidates who can keenly observe

The common action verbs used

- | | |
|---------------|-----------------|
| - Name | - comment |
| - Describe | - Give |
| - Explain | - Compare |
| - Distinguish | - suggest |
| - Relate | - state |
| - Suggest | - differentiate |

Approach

1. Name

Write full name. Do not abbreviate e.g O₂X oxygen, DNA, Deoxygribonuclei acid

2. Describe (Graph)

- Independent variable
- Quantitative (figures)
- Dependent variable
- Qualitative (words) structure (description of structure follows the function)

Describe effect:- state the effect starting with independent variable

Words

- As – (for independent factor)
- Results /leads to/causes/effect for dependent factor

3. Explain

- State what is is and how or why
- Explain the changes
- Explain the factors

- Explain the relation
- Explain the position:- state the position first

4. Comment

Using your own words, bring out the facts shown on the graph

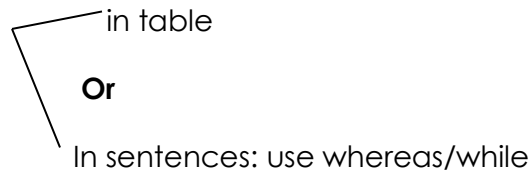
5. Distinguish

01/2:- Give only the one main point. Use the word whereas/while

6. Relate: Tell how one relate with another

7. Compare:

- Similarity (in both /both)
- Differences



8. Suggest

Give an answer in your own words according to the context

9. Give/state

Restrictions

If the question requires 3 answers, marking will only look for the first 3.

BIOLOGICAL PROCESSES:

1. Describe

Bring out the stages in their logical natural order

2. The control/regulation of the process

Enzyme, hormones, nervous, negative feedback

3. Comparison between alternative processes

4. Terminologies
5. Movement of substance
 - Absorption
 - Exchange
 - Axoplasm
 - Nephron
 - Name
 - Direction
 - Process

NB

For all hormones

- Where it is produced
- When it is produced
- Where it goes
- What it does
- Emphasise biological terms

Calculations marks

1. Formulas (correct) used
2. Correct substitution
3. Final answer with units

Genetics: UNEB 2009 Qn 46.

- New trend/demands that candidates understand principles of genetics
- Mendelian
- Non-Mendelian pattern
- Question may be set involving two aspects of inheritance

END

