

A2 Biology Exam Skills

Edexcel GCE Student Conference 2006

Common weaknesses

- Command words and what they require
Describe - Explain - Suggest
- COMPARING
- Manipulation of data

Inaccurate expressions used in Units 4/5/6

- 'About'
- 'conditions' in the body 'favourable' 'normal'
- receptors 'picking up' or 'noticing' stimuli
- muscles 'work better'
- 'root' not root hair cell
- 'excretion' meaning egestion
- 'insulin converts glucose to glycogen'

Structured questions - Basics

- Check instruction words.
- Check number of marks available.
- Try to use all the data provided.
- Check titles, headings and units.
- Try to get a general understanding about what the data shows.

Structured questions

Describe and explain/suggest

- Check carefully what is needed.
- **Describe** means refer to trends and patterns.
- **Explain** means use biological knowledge and understanding to answer questions of why? and how?
- **Suggest** is used instead of explain where biological K.U. needs to be applied to give good sensible reasons.

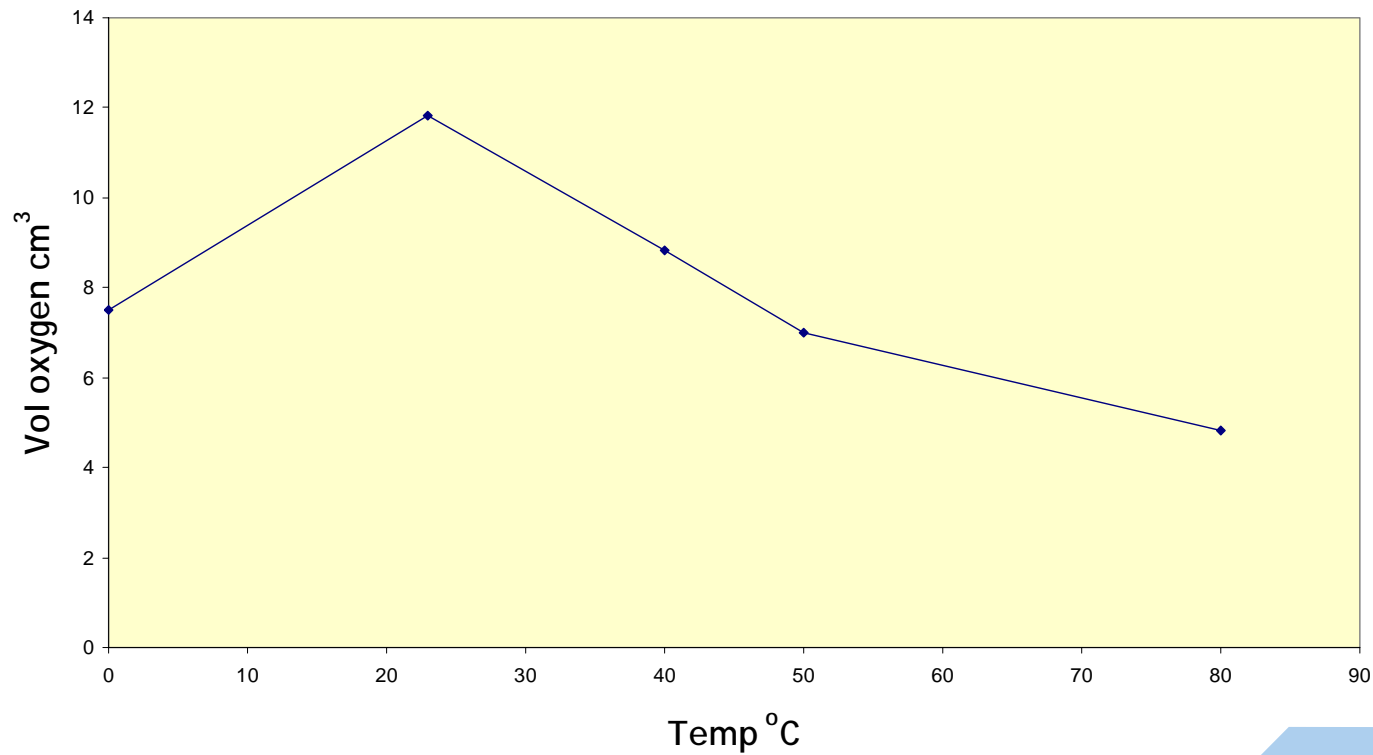
Structured questions

Trends and patterns (describe)

- Description needs manipulation and overview not repeat of data (c.f. coursework).
- Start with simple similarities and differences.
- Be accurate when describing important points.
- Consider rates but make sure you know what they mean.

Be accurate - write exactly what you mean

The effect of temperature on the breakdown of hydrogen peroxide
by catalase



Comparing

- A common source of lost marks.
- Comparing means include reference to both aspects.
- Don't just list differences and similarities.
- The simplest way to meet this is to include reference to both in one sentence.

Practical Work

- Can be tested in any unit.
- Any practical in the specification can be tested.
- PRACTICAL DETAILS are required.
- Don't forget elementary control of variables.

Synoptic Elements

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What is synoptic?

- **AO4 - Synthesis of knowledge, understanding and skills**
 - Students should be able to bring together principles and concepts from different areas of biology and apply them in a particular context, expressing ideas clearly and logically and using appropriate specialist vocabulary use biological skills in contexts which bring together different areas of biology.

Synoptic - Examiners view

- A synoptic question requires biological knowledge and understanding from 2 or more units of the specification.
- These may be from any unit in the specification but not options.
- This means 2+ from AS or 2 from A2 or one from each.

Unit test 5

- 1h 30mins
- 70 raw marks
- Two sections - unit 5 material and synoptic.
- First section short questions + interpretation of data.
- Synoptic section data response + longer prose.
(46 raw marks)

Unit test 6

- 1h 10mins
- 38 raw marks
- at least 3 questions
- 2 longer structured questions
- 1 synoptic essay

Synoptic essay - Marking

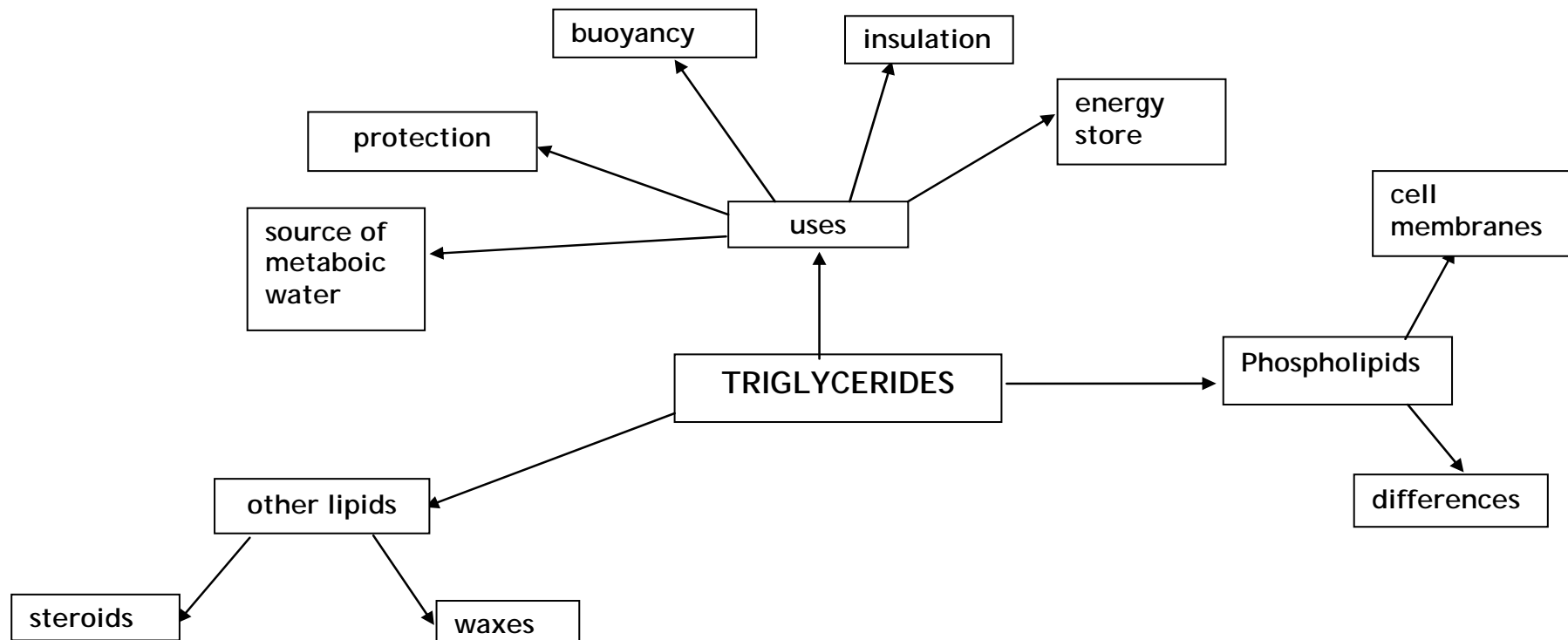
- 15 raw marks
- Marked in sections
 - (a) Scientific content - 11 marks
 - (b) Balance - 2 marks
 - (c) Coherence - 2 marks

Preparing for synoptic papers

- Start now!
- Refile your notes from AS into the relevant sections of A2.
- Build up a bank of at least 12 mind maps.

An example of a mind map

Roles of lipids in living organisms



Progression and synoptic elements 1

- Enzymes, molecules > Metabolic pathways.
- Digestion of carbohydrate . Regulation of blood glucose.
- Cell membranes > Nerve impulse, nephron.
- palisade cells, chloroplasts, leaf structure > photosynthesis.
- Modes of nutrition > factors affecting population size.

Progression and synoptic elements 2

- Human influences on the environment > conservation.
- DNA & protein synthesis > mutations.
- Meiosis > variation, selection and linkage.
- DNA structure > gene technology.
- Adaptation to the environment > factors affecting distribution of organisms.
- Enzymes > gene technology.

Synoptic essay - Read the question

- Check the title for important words - VITAL
 - Structure
 - Role
 - Function
- Relate structure to function
- Plants and animals