GENERAL CERTIFICATE OF EDUCATION
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EXAMINERS' REPORTS

BIOLOGY (NEW)
AS/Advanced

New Specification

WINTER 2009

Statistical Information

This booklet contains summary details for each unit: number entered; maximum mark available; mean mark achieved; grade ranges. *N.B. These refer to 'raw marks' used in the initial assessment, rather than to the uniform marks reported when results are issued.*

Annual Statistical Report

The annual *Statistical Report* (issued in the second half of the Autumn Term) gives overall outcomes of all examinations administered by WJEC.

BIOLOGY

General Certificate of Education

January 2009

Advanced Subsidiary/Advanced

Principal Examiner: Mr G Rowlands, BSc

Unit Statistics

The following statistics include all candidates entered for the unit, whether or not they 'cashed in' for an award. The attention of centres is drawn to the fact that the statistics listed should be viewed strictly within the context of this unit and that differences will undoubtedly occur between one year and the next and also between subjects in the same year.

Unit	Entry	Max Mark	Mean Mark
BY1	3556	70	43.8

Grade Ranges

A	55
B	49
C	44
D	39
E	34

N.B. The marks given above are raw marks and not uniform marks.

BY1

The majority of candidates were well prepared for this first examination of the new specification. All questions were accessible, with many candidates scoring highly. The reduced content of this unit may have been a contributing factor in the increased mean compared with past examinations.

Q.1 Generally well answered but many candidates were unable to identify a non-reducing sugar and were not aware that magnesium is found in chlorophyll.

Q.2 Well answered although it was surprising to find that, after correctly identifying peptide bonds as being present at the primary level, many candidates failed to realise that these bonds are also present at the secondary and tertiary levels.

Q.3 This question proved to be a good discriminator, with weaker candidates being unable to distinguish between the structure of starch and cellulose. Candidates often failed to use information supplied in the diagram of the question and were unable to appreciate the significance of the rotation of the glucose molecules in cellulose.

Q.4 A well answered question but many failed to appreciate the three-dimensional nature of the cell.

Q.5 The first part of the question on diffusion was well answered but generally candidates' knowledge of water relations of cells was weak and often centre-based. Very few described the cell wall as fully permeable and so failed to appreciate that solutions can pass through into the space between the cell wall and the cell membrane.

Q.6 It was disappointing that many candidates could not analyse information presented in graphical form and were unable to observe patterns in data. Many candidates were unable to express themselves clearly in order to gain marks. At this level it is insufficient to describe the effect of the temperature on enzymes merely in terms of 'increased rate' or 'enzymes are denatured'. Candidates must state that an increase in kinetic energy results in an increase in collisions between enzymes and substrates, thereby increasing the change of enzyme-substrate complex formation. Denaturation is the result of hydrogen bonds being broken, causing a change in the shape of the active site. Good candidates were able to describe differences between the effects of temperature on the immobilised and the free enzyme but the weaker candidates were unable to express this clearly. When comparing free and immobilised enzymes, very few were able to explain the significance of the molecular stability of the immobilised enzymes.

Q.7 Candidates do not require a detailed knowledge of meiosis at this level and only the differences between mitosis and meiosis are needed. As a result, this question was well answered, with a majority of candidates showing a good understanding of the basic principles of mitosis.

Q.8 There were good answers to both essays, with many candidates gaining maximum marks. The question on DNA was by far the more popular although there were also some excellent responses to the essay on water. However, weaker candidates tended to merely list the properties of water but failed to provide an explanation. Frequently the examples give were inappropriately expressed.

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