



General Certificate of Education

Applied Science

8771/8773/8776/8779

SC15 The Role of the Pathology Service

Report on the Examination

2009 examination - June series

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General Comments

The number of candidates entered for the portfolio units has again increased this year and many centres have continued to guide their candidates to achieve well. These units have generated much high quality work from centres. Credit should be given to both teachers and candidates in making considerable effort to meet the expected standards.

The random sampling of accredited centres confirmed the value of the accreditation process - with centre marking being confirmed as being in line with AQA standards in most cases, but with a small number showing some "slippage" leading to loss of accreditation.

(The accreditation scheme is used where centres have demonstrated that they are able to mark to the required AQA standards. Under the scheme AQA will accept centre marks without the need to complete the moderation process.)

Portfolio issues

Portfolio construction remains a concern with some candidates, and it is evident that further centre guidance is needed. However, it is very important that centres continue to provide the opportunity for candidates to demonstrate flair and individuality. It is easier for moderation if portfolio structure matches the structure of the unit. Centres are also advised to monitor portfolios during their production as some candidates continue to produce unreasonably large portfolios.

For some units, it appears that the level of expectation of the quality of portfolio content and/or the outcomes that candidates are able to produce are set too low. A number of centres are still judged to have marked candidates work too generously and where this was the case, centres marks were deemed out of tolerance by the moderator and had to be reduced.

Some of the causes of overgenerous marking included:

- Misinterpretation of the requirements of unit
- Too much work on non-essential areas and/or too little on required aspects
- failure to fully complete aspects of the unit as required in the "Banner", in such cases work should be assessed in line with the guidance given in section 9.2 of the teachers' guide
- Over-lenient interpretation of the assessment grids
- Lack of rigour in marking/assessment of work – incorrect science accepted, incorrect calculations marked as correct, incorrect statements accepted, praise for work which is of poor quality, marks allocated for work for which there is no evidence – or no supporting teacher comment (# in the assessment grids)
- Poor candidate skills in practical activities leading to a lack of precision and unreliability in results
- A lack of description by the centre assessor of candidate's level of practical skills, their awareness of safety procedures and degree of autonomy (marked # in the assessment grids) and resulting inconsistencies between the marks awarded by the assessor and the portfolio evidence
- The inclusion of materials downloaded from the internet either passed as the candidates own work or not referenced in the portfolio

As stressed at AQA standardising meetings held in autumn 2008, in communications sent to centres and in last year's Principal Moderators report, it is imperative that centres make it very clear to candidates that the incorporation of text downloaded from the Internet into portfolios is plagiarism and must not be tolerated.

Centres are reminded that many issues and points of guidance made in the 2008 Principal Moderators exam report are still valid and this remains a valuable source of information for centres seeking to improve their portfolios.

Unit 15 – The Role of the Pathology Service

In this unit, the term pathology is made in reference to the pathology departments found in hospitals and the unit refers to clinical pathology. In different hospitals, the exact terminology used to describe departments may vary but the unit requires study of 4 areas of the hospital medical service in equal detail:

- The biochemistry department
- The haematology department
- The microbiology department
- And what is more correctly called the histo-pathology department (since the term pathology is frequently used as an umbrella term for all these departments together)

Good portfolios included the following work:

- The type of specimens that are received by each department
- The tracking procedure followed in each department so that errors are not made in matching test results to samples and the results are returned to the correct source
- Essential details of the types of tests carried out on samples were included – taking into account the fact that much work is now automated in some departments. However the principles of tests and the procedures of automated testing were still not well explained. ELISA and Grams staining techniques were explained
- A good explanation of the roles and qualifications of personnel working in the biochemistry and microbiology departments
- An understanding of the use of ICT in tracking, analysis and implications of the Data Protection act
- A good coverage of health and safety issues. Good candidates gave an overall account for the clinical pathology department as a whole, with specific references being made when considering separate departments
- Evidence of microbiological analysis – this frequently involved the use of bacterial lawns and the measurement of zones of inhibition resulting from antibiotic or antiseptic treatment. There is a need for greater accuracy in some of this work where zones of inhibition should be determined based on measurements of more than one diameter
- Good evidence of a chromatographic or electrophoresis analysis, demonstrating through the descriptions and results, indicated that candidates had carried out and understood the experimental work
- A sensible consideration for the requirements in AO3 (ii) to compare the same procedure used in school and the hospital environment. Some candidates did this well describing both manual and automatic procedures

Frequent omissions were the organisational structure of departments linked to the role and the qualifications of personnel, the tracking, and disposal of specimens and Health and Safety legislation.

Candidates still need to consider how they structure their portfolios for this work. Some made a general account of hospital procedures for Health and Safety, tracking of specimens and their analysis and disposal. Others repeated exactly the same material in each section of their portfolio with additions as appropriate. It seems sensible for candidates to provide a general account overall and then explain how this differs for each department as it is considered rather than keep repeating the same material in different parts of the portfolio.

Almost every candidate carried out the two analyses but a wide range of levels of skill and capability was demonstrated. The work included ranged from the chromatography of inks (which is inappropriate at A2 level in this unit) to detailed electrophoresis of DNA that had been extracted by candidates. Many used microbiological analysis very similar to the work submitted for Unit 12. Ideally candidates should not simply repeat work from SC12 or simply copy their results across. Since candidates need to know about Grams staining technique in this unit, it would be possible to use this technique for the identification of non-pathogenic microbes in an appropriate investigation. The use of class results where one candidate contributes very little to the overall outcome also compromises the award of marks in the higher mark bands of AO3.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the [Results statistics](#) page of the AQA Website.