National Examining Board for Dental Nurses

The Passmarks in the NEBDN National Diploma in Dental Nursing Examination
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This document explains briefly how the passmarks for the NEBDN Diploma Examination are set.

Traditionally, many people are accustomed to examinations that had a fixed passmark. Typically, this might be 50% or 60%. This was sometimes, but not always, made known to the candidates, teachers etc. However, it was often enshrined in the exam regulations and was usually the same for different diets of the examination.

Although this gave the impression of fairness and consistency, in reality it was potentially very unfair. This is because it is virtually impossible to produce different diets of the examination that are all of the same degree of difficulty. Consequently, some diets were easier than others, yet the passmark was the same for all of them.

Today, the passmarks for high stakes examinations in medicine and dentistry are usually set using much fairer methods that take account of the difficulty of items that are used in the exam. Therefore, the passmarks vary slightly from diet to diet.

The NEBDN National Diploma in Dental Nursing Examination uses internationally recognised and well-established methods to set the passmarks. It also designs the Diploma Examination so that the passmark is reasonably consistent across diets.

The passmark for the Written section (Part 1) is set using a *modified Ebel method*. This same method is used for a number of other important examinations in dentistry and it takes account of both the difficulty and importance of every item, together with the judgement of a panel of experts on the performance of just-passing candidates. This method also helps to ensure that the examination contains a good balance of easy, moderate and difficult items and has appropriate coverage of essential important and supplementary areas of the curriculum.

Essential competencies are printed in red in the curriculum and will always feature strongly in Part 1. Important competencies are shown in green and these, too, will always feature strongly. In addition, there will be a small number of questions covering supplementary items, which are shown in blue in the curriculum.

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Every correct answer in Part 1 receives one mark. No marks are deducted for incorrect answers.

Part 1 is designed to have a passmark in the range 55% to 65% and aims to be as close to 60% as possible.

Part 2 – the Objective Structured Clinical Examination (OSCE) – is different in both design and setting the passmark. The OSCE focuses very strongly on essential professional skills and competencies. Since we expect most candidates to be very good at these (because they are essential) the passmark for the OSCE will usually be higher than for Part 1.

OSCEs are marked using a competency based method, with marks awarded for each element of the task being undertaken - for example, for each correct piece of information given to a patient, or for each instrument that has been correctly selected. The marks are weighted according to three criteria:
1. How important each element of the task is.
2. How long it would take a satisfactory candidate to complete the element.
3. How well the element was performed.

Important elements carry more marks than less important ones and elements that take longest carry more marks than items that can be completed quickly.

Elements such as selecting instruments are scored as *'meets the standard'* (done) or *'well below standard or not done'*. More complex elements such as giving an explanation to a patient are scored as *'above standard' 'meets the standard' 'just below standard'* or *'well below standard or not done'*. *'Above standard'* performance carries more marks than *'meets the standard'*, which in turn carries more marks than *'just below standard'*. *'Well below standard or not done'* carries zero marks.

In the OSCE, marks are deducted for incorrect selections on stations involving setting up instruments. This is to prevent candidates gaining an advantage by simply selecting all of the available instruments. No marks are deducted on any other stations.

The passmark for the OSCE is set using a method called the *Borderline Regression Method.* This is based on quite complex mathematical calculations and is generally agreed by assessment experts to be the 'gold standard' method for OSCEs. A passmark is calculated for each individual station and then these are added together and averaged to produce the passmark for the OSCE as a whole.

It is not necessary to pass a specific number of stations in the OSCE, nor are there any 'killer' stations that candidates must pass. It is therefore possible to compensate for a mistake etc on a station by good performance on other stations.

Standard error of Measurement

Measurement error in examinations is reported numerically as the *Standard Error of Measurement* (SEM) which is calculated using a standard formula. Candidates within the Standard Error of Measurement of the raw passmark are *borderline*. This means that because of the measurement error, they cannot be identified as clearly passing the examination.

In common with many other high-stakes examinations in medicine and dentistry, in both Parts 1 and 2 of the Diploma Examinations only clearly passing candidates are awarded a pass. This is in the interests of good patient care and safety and it means that the actual passmark is the raw passmark plus the Standard Error of Measurement.

Part 2 is designed to have a passmark in the range 60% to 70% and aims to be as close as possible to 65%.