How to Tackle Multiple-Choice Question Papers

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Almost all of the multiple-choice question (MCQ) papers included in postgraduate medical examinations in the UK use the multiple true/false question type, with an initial stem followed by five items. Every item must be correctly identified as either ‘true’ or ‘false’; each is independent of all the others. Candidates are also given the opportunity to indicate ‘don’t know’ if they so wish.

Candidates indicate their answers in these examinations by completing response sheets which are then machine-read by an optical mark reader (OMR). The output from the OMR is processed by computer. The computer program allocates marks according to the candidates’ responses, calculates their scores and derives statistical data related to individual questions, producing printout in whatever form the examiners desire. In addition to the final scores obtained by the candidates, the examiners will also note the mean score for the examination, and the mean scores for and the discriminatory power of the questions that comprise the paper. Detailed analysis of the responses to each item (including a second index of discrimination for every item), and a coefficient indicating the internal reliability of the examination as a whole are also routinely made available. These data are essential when the examiners review the paper.

Scoring of MCQ Papers
The results of an MCQ examination should indicate only the extent of the candidates’ knowledge of the topics tested in the paper and should not be influenced in any way by other factors. This means that a candidate should not gain any advantage by marking at random, or by marking all his selections ‘true’ or all ‘false’. In these circumstances he must obtain a score that does not differ significantly from zero. Marks are therefore subtracted for items wrongly selected-counter-marking. The marking system adopted for multiple true/false questions is simple. One mark is allocated to each question, and for each of the five items correctly identified as either true or false the candidate gains 0.2 marks. In each question 0.2 marks are subtracted for every item incorrectly identified. A ‘don’t know’ response does not influence the scoring in any way. Each item is therefore given equal weighting, whether true or false. The final scores (maximum possible 60, for a 60-question paper) are converted to percentages.

The Scope of Multiple-Choice Question Papers
Fundamentally, MCQs of the multiple true/false type test recall of factual knowledge, but such questions can also test powers of judgement and discrimination, as well as the ability to reason. Careful thought and the intelligent use of a sound knowledge of basic principles and probabilities will often, therefore, be more rewarding in the long run than plain memory work. Nevertheless, multiple-choice questions are the most reliable, reproducible and internally consistent method we have of testing a knowledge of facts, and a good MCQ paper will discriminate accurately between candidates on the basis of their knowledge of the topics tested. It must be emphasized that the most important function of an MCQ paper, whether in an undergraduate or in a postgraduate examination, is to rank candidates accurately and fairly according to their performance in that paper. As candidates can never know the level at which the examiners will set the pass-mark, their sole aim must be to obtain as high a score as possible. This applies to all postgraduate MCQ papers: MRCP (UK) Part I; MRCOG Parts I and II; MRCGP; MRCPsych; DCH; FRCS; and so on.

MCQ Technique
One often hears candidates and tutors talk about ‘MCQ technique’ as if it was some inherited, acquired or divinely sent gift granted only to the fortunate few.

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There can be no doubt that familiarity with the MCQ form is an advantage when papers are taken; the candidate who sees MCQs for the first time in an important examination may well be set back, but this is lack of experience, not of technique. In any case, MCQs, often of high quality, appear so often in journals and books nowadays that the serious candidate has only himself to blame if he does not familiarize himself thoroughly with the format before he sits a professional examination. Yet some candidates still claim that they have difficulties with their ‘technique’, and they may be aided and abetted by their tutors, who are sometimes inherently suspicious of the method and who may fail to appreciate that so-called ‘poor technique’ is often, in reality, simply lack of knowledge, particularly of fundamental principles.

**Response Sheets**

The surest way to pass any examination is to know the answers to all the questions, but it is equally important for the candidate to be able to communicate his knowledge accurately through the medium of the response sheets. For the clear-headed candidate this should pose no problems, provided that he understands the form of the questions and follows certain specific and simple instructions. Nevertheless, all too often one finds that candidates suffer through an inability to obey these instructions precisely, to read and understand the questions, or to organize their time.

A candidate must obviously study the question (both stem and items) carefully. He should be quite clear that he understands exactly what he is being asked. Multiple-choice questions are not designed to trick or confuse the candidate; they aim to test his knowledge of medicine, obstetrics, psychiatry or whatever. Examiners do not deliberately include hidden meanings, catches or ambiguities—it would be pointless and unfair to do so.

**How to Approach and Answer MCQ Papers**

Once you have read the question and are sure you understand it, you should indicate your answers by marking the response sheets boldly, correctly and care-
fully. Take great care not to mark the wrong boxes and think very carefully before indicating your answers. You will nearly always have the opportunity to erase an initial selection and to fill in an alternative, or to leave that item blank, indicating ‘don't know’. Make sure your erasure is complete in this situation! You should regard each item as independent of every other item in that question—each refers to a single quantum of knowledge. The item (or the stem and item read together) is a statement. You are required to indicate whether you regard this statement as true or false and, if you genuinely do not know, you can indicate this. Look at a single statement only, when answering; disregard all the other statements presented in that question. They have nothing to do with the item on which you are concentrating.

**Hints on Answering Questions of the Multiple True/False Type**

In addition to the general advice given earlier, you might find the following hints helpful.

1. *Do not* mark at random.

2. *Do not guess* if you simply do not know the answer. You may be lucky, but if you are totally ignorant (as, for instance, when you have never heard of the condition, drug or situation referred to in the item) there will be an even chance that you will be wrong if you guess and you will thus *lose* marks. Guessing is the equivalent of saying ‘heads for true and tails for false’. With a very large number of guesses the total number of marks you gain and the number you lose could even out, leaving you no worse off. With a smaller number your ‘rights’ and ‘wrongs’ may not be equal and your chances of losing marks will be exactly the same as your chances of gaining them. This 50:50 risk is one that is simply not worth taking. Do not be afraid to indicate ‘don't know’ if this honestly expresses your view.

3. Although you should not guess, *do not give in too easily*. It is often possible to work out an answer that does not strike you at once by using first principles, thought and reasoning. Think carefully, therefore, but do not spend an inordinate amount of time on a single
item that is puzzling you. Leave it and, if you have time, return to it. If you are ‘fairly certain’ that you know the right answer, it is entirely reasonable to mark the answer sheet accordingly. In other words, be bold and do not be afraid to take chances, if you feel that they are reasonably safe and secure. There is a difference between being ‘fairly certain’ (odds better than 50:50 that you are right) and totally ignorant (where any response would be a heads/tails guess). What you must try your best to do is to respond positively when you feel the odds are in your favour. Reasoning, deduction and thought will be expected to result in a net gain of marks. You will lose a few in this way, but can expect to gain more. I would emphasize again that this is not guessing—the process is called ‘thinking’.

4. Do not start counting up the number of responses you think that you have got ‘right’, calculating a score and then (if you think your score is ‘safe’) indicating ‘don’t know’ for all the remaining items. This procedure is very dangerous, because:

a. You do not know what the pass-mark for the examination will be.

b. Some of the answers you are ‘certain’ of will surely be wrong so you will not have scored as highly as you think you have. Candidates who adopt this approach tend to be uncritical and superficial.

Remember that if items that you are ‘confident’ you have answered correctly are, in fact, wrong, you will not only fail to gain those marks but will lose them. Thus, if you think that you have answered 180 out of 300 items correctly yet have actually been wrong in as few as 10 instances (probably an underestimate), you will end up with only 160 marks. Rather than wasting your time doing misleading sums, you will be better off trying to work out the answers about which you were initially uncertain. In any MCQ examination, you must try to score as high a mark as possible.

5. It is sometimes suggested that you should go quickly through the whole paper, marking down the answers you are ‘certain’ of as you go, rather than slowly and steadily completing each question one by one. The former method has the advantage that it ‘gets marks in the bank’ and avoids the risk that you may be left with several questions to answer, some of which you may know correctly, when time is called. It also allows you time to think about items you missed out the first time round. The disadvantage of this method is that you may get mixed up and put marks in the wrong place; it also requires mental gymnastics to consider so many topics one after the other in a short time.

The method you adopt will depend on your personal-ity, your confidence and your familiarity with MCQs. I would recommend the first, as it is easier to organize your time when you follow this procedure.

6. Try to leave some time to go over your answers again before the end, paying particular attention to questions that you have found difficult. At the same time you can check that you have filled in your responses correctly. However, repeated review of your answers may in the end be counter-productive. Answers that you were originally confident were ‘absolutely correct’ often look rather less convincing at a second, third or fourth perusal. In this situation first thoughts are usually best, and too critical a revision might cause confusion.

Summary

Careful thought and reasoning ability, as well as honesty, are all involved in so-called ‘MCQ technique’: if there is indeed such a thing, it comes down to knowing how best to deal with items about which you are uncertain. In other words, when to indicate ‘don’t know’ and when to take a reasonable chance and play your hunches. It follows that the best way to avoid this dilemma is to reduce the chances of it arising by having a sound and comprehensive knowledge of medicine, surgery or whichever discipline the paper covers. You must at all costs make every effort to obtain the highest score that you can in MCQ papers.

Further Reading


