Admissions Testing Service

BIOMEDICAL ADMISSIONS TEST (BMAT)
TEST SPECIFICATION

12 April 2010

BioMedical Admissions Test (BMAT) test specification

Purpose of the test

The purpose of the BioMedical Admissions Test is solely to provide an assessment of candidates' potential in an academically demanding undergraduate biomedical degree, and not their fitness to practice medicine or veterinary medicine - which universities will continue to assess in other ways. The test results are intended to be used as a significant component of the selection decision in conjunction with other public examination performance, evidence from the UCAS form and performance in interview. Test items draw upon generic academic skills and basic science knowledge rather than recent specialist teaching and provide an objective basis for comparing candidates from different backgrounds, including mature applicants and those from different countries. The test is designed to be challenging, in order to discriminate effectively between able applicants for university courses, including those who may have achieved the highest possible grades in school examinations.

Qualities to be assessed

Knowledge

Familiarity with concepts, terms and propositional knowledge specified by the national curriculum up to and including key stage 4 (GCSE-level) Science and Additional Science and Mathematics.

Skills

Handling of number and communication, specifically:

ability to read formal English and follow written instructions;

ability to work quickly and accurately;

ability to perform very simple mental arithmetic;

ability to identify the straightforward meaning of particular phrases within a longer text;

ability to extract the meaning intended by an author where to do so requires more than one syntactical element of the text to be understood and synthesized;

ability to read simple quantitative data presented numerically or graphically and to understand their straightforward meaning and to be able to produce simple and appropriate graphs or diagrams of quantitative data;

ability to generalize from quantitative data, for example to interpret a trend, a pattern, or a rate and to be able to apply the generalisation to the particular or hypothetical context;

ability to make logical inferences or deductions from textual information and quantitative data and to identify illogical inferences;

ability to communicate knowledge, understanding, interpretation, inferences, arguments, deductions and predictions by the appropriate use of clear and concise written English and diagrams;

a tendency to take approaches that are critical, evidence-based, and which consider alternatives.

Structure of the test

The test has three elements, a 60-minute test of Aptitude and Skills, a 30-minute test of Scientific Knowledge and Applications and a 30-minute Writing Task. The structure of each of these three elements is outlined below. Example test papers are available on www.bmat.org.uk.

1: Aptitude and Skills

This element tests generic skills often utilised in undergraduate study. The range of these and the approximate balance between them in terms of the time and number of marks which will be available is outlined below. Questions will be in multiple-choice or short answer form. Calculators may not be used.	Minutes	Marks available
Problem Solving demands insight to determine how to encode and process numerical information so as to solve problems, using simple numerical and algebraic operations. Problem solving will require the capacity to ... • select relevant information • recognise analogous cases • determine and apply appropriate procedures	30 (approx)	13 3-7 3-7 3-7
Understanding Argument presents a series of logical arguments and requires respondents to ... • identify reasons, assumptions, & conclusions • detect flaws • draw conclusions	15 (approx)	10 2-4 2-4 2-4
Data Analysis & Inference demands the use of information skills (vocabulary, comprehension, basic descriptive statistics and graphical tools), data interpretation, analysis and scientific inference and deduction to reach appropriate conclusions from information provided in different forms, namely ... • verbal • statistical • graphical	15 (approx)	12 3-5 3-5 3-5
All	60	35

2: Scientific Knowledge and Applications

This element tests whether candidates have the core knowledge and the capacity to apply it which is a pre-requisite for high level study in biomedical sciences. Questions will be restricted to material normally included in non-specialist school science and mathematics courses, as exemplified by the UK national curriculum for Science and Additional Science and Mathematics up to and including Key Stage 4. They will however require a level of understanding appropriate for such an able target group. The balance between the subject areas in terms of time and marks available is outlined below. Questions will be in multiple-choice or short answer form. Calculators may not be used.	Minutes	Marks available
Biology	8 approx	6 - 8
Chemistry	8 approx	6 - 8
Physics	8 approx	6 - 8
Mathematics	6 approx	5 - 7
All	30	27

3: Writing Task

	Minutes
A selection of four tasks will be available, from which one must be chosen. These will include brief questions based on topics of general, medical, veterinary or scientific interest. Questions will provide a short proposition and may require candidates to: • explain or discuss the proposition's implications; • suggest a counter proposition or argument; • suggest a (method for) resolution. The Writing Task provides an opportunity for candidates to demonstrate the capacity to consider different aspects of a proposition, and to communicate them effectively in writing. Skills to be assessed include those concerning communication, described above. All specified skills may be assessed. The question paper will brief candidates about the nature and purpose of the Task. They will be required to produce a written communication, without the assistance of a dictionary or automated spelling and grammar checking software. Whilst they may make preliminary notes, the final product is strictly limited to one A4 page, to promote the disciplined selection and organisation of ideas, together with their concise, accurate and effective expression. When scoring responses, consideration will be given to the degree to which candidates have: addressed the question in the way demanded; organised their thoughts clearly; expressed themselves using concise, compelling and correct English; used their general knowledge and opinions appropriately. Admitting institutions will be provided with a copy of the applicant's response.	30

Scoring and reporting

For both Aptitude and Skills (Section 1) and Scientific Knowledge and Applications (Section 2), scores will be reported (to one place of decimals) on a 9-point BMAT scale.

The Writing Task will be scored by the Admissions Testing Service, and an image supplied to each institution to which the candidate has applied. In addition to scores, the task provides institutions with a basis for qualitative assessments of writing skills.

Test format

There will be separate question papers for each of Sections 1, 2 and 3.

With the exception of the Writing Task (Section 3), all questions will be in objective or semi-objective formats. Questions or sub-questions will each carry one mark, so that although clusters of sub-questions relating to the same stimulus will be feasible, partial credit items will not be used. For Sections 1 and 2, exhaustive answer keys will be finalised after inspection of the range of responses to each question; followed by automated marking, psychometric analysis, test calibration and the issue of results.

The Admissions Testing Service is part of Cambridge English Language Assessment, a not-for-profit department of the University of Cambridge. It offers a range of tests and tailored assessment services to support selection and recruitment for educational institutions, professional organisations and governments around the world. Underpinned by robust and rigorous research, its services include:

- assessments in thinking skills
- admission tests for medicine and healthcare
- behavioural styles assessment
- subject-specific admissions tests.

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www.admissionstestingservice.org/help