UCAT UNIVERSITY CLINICAL
APTITUDE TEST
ANZ

2020 **UCAT ANZ**
OFFICIAL GUIDE

University Clinical Aptitude Test for Medicine and Dentistry

Foreword

This is the official guide to the UCAT ANZ 2020 which contains definitive information regarding the test and its content. From 2019, the UCAT ANZ replaced the UMAT (Undergraduate Medicine and Health Sciences Admission Test) previously used by our Consortium member universities.

Sitting the UCAT ANZ is an important step in your application to medical or dental school. We recommend you start your preparation by reading this guide as it is intended to give you a complete overview of the steps involved in sitting the UCAT ANZ, including which universities require the test, key dates, how to register and book your test, what to expect on the day, and most importantly how to prepare for the test. You will find detailed descriptions of each of the subtests, an explanation of the different question types, strategies, tips and advice from previous candidates, and over 130 practice questions and answers. We believe that this guide, in conjunction with the free preparation materials and practice tests on our website **ucat.edu.au**, are all you need to prepare successfully for the test.

We do not endorse any commercial preparation courses for the UCAT and we would advise you to be sceptical about anyone's claims to be able to help you do well in the test by coaching. Of course you do need to practice in order to become familiar with test items and most importantly the timing in each subtest. We give more advice in this guide regarding test preparation and strategies.

We hope you find this information useful. If you have any feedback and suggestions for additional content please contact us.

The UCAT ANZ Consortium

The UCAT ANZ Consortium is a group of Australian and New Zealand universities who use the UCAT ANZ as part of their selection process for medicine, dentistry and selected clinical sciences.

We are committed to achieving greater fairness in selection and to the widening participation of under-represented social groups in medical, dental and health sciences training.

The test is run by the Consortium in partnership with Pearson VUE, a global leader in computer-based testing and part of Pearson plc. It is delivered on computers worldwide through Pearson VUE's centres.

UCAT UNIVERSITY CLINICAL APTITUDE TEST ANZ

ucat.edu.au

Contents

What is the UCAT?

The University Clinical Aptitude Test (UCAT ANZ) is an admissions test used by a consortium of universities in Australia and New Zealand for their medical , dental and selected clinical science degree programmes.

The test helps universities to make more informed choices from amongst the many highly-qualified applicants to these highly competitive degree programmes. It assesses a range of abilities identified as important by university medical and dental schools for success in their programmes or courses, and later as a clinician.

The UCAT does not contain any curriculum or science content. It focuses on exploring the cognitive powers of candidates and other attributes considered to be valuable for health care professionals.

Eligibility

The UCAT ANZ test is available to any candidate whose educational level at the time of sitting the test is their final year of secondary schooling, or higher. Candidates registering for UCAT ANZ 2020 should have already completed, or plan to COMPLETE their final year of secondary schooling in 2020 (i.e. Year 12 in Australia; Year 13 in New Zealand).

Students whose current educational level is Australian Year 11 or lower are NOT eligible to take UCAT ANZ. This includes Year 11 students undertaking one or more Year 12 subjects. Year 12 students completing Year 12 over two years are only eligible to sit UCAT ANZ in their final year.

Key dates 2020

Concession Scheme opens Access Arrangements open	3 February 2020
BOOKING OPENS	**2 March 2020**
Concession application deadline Access Arrangements deadline	4 May 2020 at 5pm AEST
BOOKING DEADLINE	**11 May 2020 at 11.59pm AEST**
Late booking deadline	18 May 2020 at 11.59pm AEST
Cancellation deadline	18 May 2020 at 11.59pm AEST
Testing begins	1 July 2020
Last testing date	31 July 2020
Results delivered to universities	by early September 2020

Who should take the test?
The UCAT ANZ is a compulsory entry requirement for our Consortium Universities. You are required to sit the test by 31 July 2020 if you are intending to apply for entry in 2021 to a relevant course listed below. UCAT ANZ results cannot be carried over from one year to the next. There are no general exemptions from the test.

You may only take the test once in any test cycle and any instances of multiple testing in the same year will be treated as an example of unprofessional behaviour.

Which Universities require the test?
Some pathways to medicine/dentistry/clinical sciences will not require the UCAT ANZ. For some applicants a different test may be required. You should always check the entry requirements for each course or programme using the websites of the universities to which you intend to apply before booking a test as the information below may be subject to change. The UCAT ANZ website has the most up to date information.

University	Course or Programme
The University of Adelaide	Medicine, Dental Surgery, Oral Health
Charles Sturt University	Dental Science
Curtin University	Medicine
Flinders University	Clinical Sciences / Medicine
La Trobe University	Dental Science
Monash University	Medicine
The University of Newcastle / University of New England	Joint Medical Program
The University of New South Wales	Medicine
The University of Queensland	Medicine (provisional entry), Dental Science
University of Tasmania	Medicine
The University of Western Australia	Medicine (Direct Pathway), Dental Medicine (Direct Pathway)
Western Sydney University	Medicine
The University of Auckland	Medicine
University of Otago	Medicine, Dental Surgery

Where can I take the test?

The UCAT ANZ is a compulsory entry requirement for our Consortium Universities in Australia and New Zealand. The test is delivered in Pearson VUE test centres during July in the locations listed below.

Australia
Available dates will be shown at the time of booking your test.

Canberra	ACT	Rockhampton	QLD
Armidale	NSW	Townsville	QLD
Newcastle	NSW	Adelaide	SA
Orange	NSW	Port Augusta	SA
Parramatta	NSW	Hobart	TAS
Port Macquarie	NSW	Launceston	TAS
Sydney	NSW	Bendigo	VIC
Wagga Wagga	NSW	Geelong	VIC
Alice Springs	NT	Melbourne	VIC
Darwin	NT	Mildura	VIC
Brisbane	QLD	Traralgon	VIC
Cairns	QLD	Bunbury	WA
Gold Coast	QLD	Perth	WA

New Zealand
Available dates will be shown at the time of booking your test

Auckland	Christchurch
Dunedin	Invercargill
Wellington	

Note: Most capital cities have multiple test centres. Details of the locations will be available to view when booking opens in March 2020.

Overseas
Candidates who will be overseas for the month of July 2020 should visit the Test Centre Locations page of our website for further information on where you can sit the test and how to book an overseas test centre. Sitting the test overseas will incur an additional administrative fee.

International Candidates
International applicants may not be required to sit the UCAT ANZ, an alternative admission test (ISAT) may be required. Candidates should check the course or programme entry requirements on the websites of the relevant universities before booking a test.

Registration and Booking

The UCAT ANZ can be taken between 1 July and 31 July 2020. You must complete a two-step process using the Pearson VUE online registration system to register and then book a test.

Registration
You must create an online account with Pearson VUE before you can book your test (we call this first step registration). Follow the links on our website to create your Pearson VUE account: **ucat.edu.au/registration and booking/**

You need to register for your test personally – this cannot be done by your school or college.

Booking

Once you have registered you will be able to book your test. Bookings open on 2 March 2020 and close on 11 May 2020 at 11.59pm AEST (Australian Eastern Standard Time).

Late bookings are accepted until 18 May 2020 at 11.59pm AEST. All candidates must book a test by this date. An additional late fee applies for late bookings.

We recommend booking your test appointment early in the booking window to maximise the chance of attending a convenient test centre.

You should book a standard test unless you are eligible for extra time in public exams. Please see the Access Arrangements section of this guide for more information.

You are strongly recommended to book a test date early in the July testing period. Each year there are candidates who book a late test date and then encounter problems if they fall ill or experience other issues which prevent them from taking that test appointment.

Test Fees

The following test fees apply in 2020:

Tests taken in Australia or New Zealand	$299
Concession Fee (Australia only)	$199
Tests taken overseas / outside Australia and New Zealand	$374
Late fee	$75

Test fees depend on the test centre location, not on your place of residence or nationality.

Candidates in Australia can also refer to our Concession Scheme overleaf, to see whether they are eligible to pay a reduced test fee.

The test fee is payable online at the time of booking. All fees will be charged in Australian dollars.

The additional late fee applies to all bookings completed after 11.59pm AEST on 11 May 2020 and before 11.59pm AEST on 18 May 2020.

Concessions

Candidates who hold (or who are listed as a dependant on) a **current Australian Health Card Card (HCC) or Pensioner Concession Card (PCC)**, both of which are issued by Centrelink, are eligible for a reduced test fee. The concession fee is not available to candidates sitting the test outside Australia.

You will need to submit the online application form and upload a copy of your concession card before you make your test booking to be eligible for this reduced fee.

Applications without the correct supporting evidence or late applications received after the deadline of 5pm AEST on 4 May 2020 will not be considered.

Further information regarding applying for a concession can be found here **ucat.edu.au/ucat-anz/ concession-scheme/**

Rescheduling and Cancelling

If you are not fit to take your test due to illness or other personal circumstances you must reschedule your test to a later date even if this means losing the test fee.

You may reschedule your test online through your Pearson VUE account until 18 May at 11.59pm AEST. After this date you must phone Pearson VUE Customer Services to reschedule your test. Please note that rescheduling is based on availability. Convenient dates and times will be limited in the last two weeks of testing.

Rescheduling must be done a full 24 hours before your test. If you miss this deadline you will need to pay the test fee again to reschedule your test appointment (subject to availability). You still need to give the appropriate amount of notice even though the Pearson VUE Customer Services helpline is only available Monday to Friday from 09:00 to 18:00 (local time).

You can cancel your test through your Pearson VUE account up to the cancellation deadline of 11.59pm AEST on 18 May 2020 to receive a refund. If you have to cancel later than this, the appointment will count as a 'no-show' and payment will not be refunded.

Please see the Rescheduling and Cancelling page of the UCAT ANZ website for full details : **ucat.edu. au/ucat-anz/registration-booking/ rescheduling-and-cancelling/**

Access Arrangements

If you have a Specific Learning Difficulty such as dyslexia, a disability, medical condition or temporary injury you may be entitled to Access Arrangements such as extra time, rest breaks or accommodations.

Applications for Access Arrangements can be made from 2 February until the deadline of 5pm AEST on 4 May 2020.

Access Arrangements applications must be accompanied by suitable official documentation from an educational psychologist or registered health practitioner.

Access Arrangements

If you are entitled to any of the following access arrangements **you must apply to the UCAT ANZ Office for approval before you can book your test:**

- **UCATSA - 5 minute rest breaks between sections**
- **UCATSEN - 25% extra time**
- **UCATSENSA - 25% extra time with 5 minute rest breaks between sections**
- **Separate room (subject to availability)**
- **Access to medical items or medically necessary food/drink. This arrangement requires a separate room, which is subject to test centre availability.**

You should apply by completing the Access Arrangements application form on the website and submitting the correct supporting evidence (outlined below) by 5pm AEST on 4 May 2020. You will be notified of the outcome by email within 5 business days and must then phone Pearson VUE Customer Services to book your test.

When you submit your application for Access Arrangements you must also submit supporting documentation. The following requirements apply:

- Your documentation must be from a registered health practitioner on the practitioner's official letterhead including the date and title, name, registration number, contact details, and signature of the practitioner.

- For disabilities or health related needs, other than learning disabilities, your documentation must be no more than one year old.

- For learning disabilities, a copy of an appropriate educational psychologist's report (no more than 3 year's old) will be acceptable. A report older than 3 years will be acceptable if it is accompanied by a recent letter from an educational psychologist stating that the information in the report is still applicable.

Your documentation:
- Must give a clear diagnosis and information on the condition, indicate the impact of the condition in test settings and include a statement as to what adjustments the practitioner considers appropriate for the candidate in test settings.

Note the UCAT is a multiple-choice, online test and does not require extended handwriting.

Accommodations

If you require accomodations when sitting the test you should email the UCAT ANZ Office for approval before you make your test booking (you do not need to provide supporting evidence for the following):

- Wheelchair access*
- Adjustable height desk*
- Changes to the test colour scheme and/ or font size)
- Coloured overlays (provided by the candidate)

* subject to test centre availability

Some medicines, medical devices, mobility devices and other items are considered Comfort Aids. They are allowed into the test room after visual inspection and do not require any arrangements. A full list is available on the Access Arrangements page of our website.

For further information on how to apply for access arrangements, including acceptable supporting evidence, please ensure you read this section of our website carefully: **ucat.edu. au/uca-anz/access-arrangements/**

Test Format

Overview

The UCAT assesses a range of abilities identified by university Medical and Dental Schools as important. There is no curriculum content as the test examines innate skills. Each subtest is in a multiple-choice format and is separately timed.

For candidates sitting the UCAT in 2020, the test will consist of:

- **Verbal reasoning** - assesses ability to critically evaluate information that is presented in a written form

- **Decision making** - assesses ability to apply logic to reach a decision or conclusion, evaluate arguments and analyse statistical information

- **Quantitative reasoning** - assesses ability to critically evaluate information presented in a numerical form

- **Abstract reasoning** - assesses the use of convergent and divergent thinking to infer relationships from information

- **Situational judgement** - measures capacity to understand real world situations and to identify critical factors and appropriate behaviour in dealing with them.

UCAT - Standard Test (120 minutes)

Section	Time (including instructions)	Questions
Verbal Reasoning	22 minutes	44 questions
Decision Making	32 minutes	29 questions
Quantitative Reasoning	25 minutes	36 questions
Abstract Reasoning	14 minutes	55 questions
Situational Judgement	27 minutes	69 questions

SEN - Extended Test (150 minutes)

Section	Time (including instructions)	Questions
Verbal Reasoning	27 minutes 30 seconds	44 questions
Decision Making	40 minutes	29 questions
Quantitative Reasoning	31 minutes 15 seconds	36 questions
Abstract Reasoning	17 minutes 30 seconds	55 questions
Situational Judgement	33 minutes 45 seconds	69 questions

Verbal Reasoning

The Verbal Reasoning subtest assesses your ability to read and think carefully about information presented in passages and to determine whether specific conclusions can be drawn from information presented. You are not expected to use prior knowledge to answer the questions.

UCAT Time	Questions
22 minutes (one minute for instruction and 21 minutes for questions)	44 questions associated with 11 reading passages

Why Verbal Reasoning?
Doctors and dentists need excellent verbal reasoning skills in many aspects of their work. An ability to understand complex information and communicate this clearly and simply to patients is obviously essential. Medical practitioners must also be able to interpret findings from published materials and apply this to their own practice. It is also essential they are able to critique such materials and draw their own conclusion as to the validity of any findings.

Verbal Reasoning Items
You will be presented with eleven passages of text, each associated with four questions.

Some questions assess critical reasoning skills, requiring candidates to make inferences and draw conclusions from information. You will need to read the passage of text carefully. You will then be presented with questions which comprise a stem, which might be an incomplete statement or a question, with four response options.

The candidate is required to pick the best or most suitable response. Candidates will only be able to select one response.

For other test questions, your task is to read each passage of text carefully and then decide whether the statement provided follows logically from the information in the passage. In each case you can choose True, False or Can't Tell.

Verbal Reasoning Strategies
- You are unlikely to be familiar with the content of the text shown to you. Do not draw on existing knowledge as this will not be relevant.

- Think about how you will plan your time in this section.

- Work on your speed reading skills during your preparation by reading articles in the newspapers and learning to extract the key facts quickly.

- This section requires real concentration – it is at the beginning of the test and you should be ready to focus right from the start.

> "The best thing to prepare for Verbal Reasoning is to read a newspaper or even non-fiction books daily, examining the arguments, logical fallacies and techniques used. Join debate groups, and read around logical fallacies and formal logic as well. Learn to unpick arguments and read quickly. If you read for 15 minutes every day, you'll gradually become better, and this section will seem very easy by the time you have to take the UCAT."
>
> **Jonathan, 99th percentile**

Decision Making

The Decision Making subtest assesses your ability to apply logic to reach a decision or conclusion, evaluate arguments and analyse statistical information.

UCAT Time	Questions
32 minutes (one minute for instruction and 31 minutes for questions)	29 questions associated with diagrams, text, charts or graphs

Why Decision Making?
Doctors and dentists are often required to make decisions in situations that may be complex. This requires high-level problem solving skills and the ability to assess and manage risk and deal with uncertainty.

Decision Making Items
You will be presented with questions that may refer to text, charts, tables, graphs or diagrams. Additional information may be presented within the question itself.

All questions are standalone and do not share data. Some questions will have four answer options but only one correct answer; others will require you to respond to five statements by placing a 'yes' or 'no' answer next to each statement.

A simple on-screen calculator is available for use in this section. You may also need to use your note board and pen.

Decision Making Strategies
- Timing is important in this subtest. Flag questions you are unsure about so you can come back to them at the end.

- It may help you to write out or draw the information given in the question. Make sure you have your note board and pen to hand.

- Some questions require you to 'drag and drop' the correct response. Practice this functionality in the Tour Tutorial.

- Brush up on your maths skills around probability and Venn diagrams.

- Some items ask you to weigh arguments for and against a particular solution to a problem. You must suspend your own beliefs to reach the strongest conclusion.

- There are a number of different question types; if there are some you find more challenging, flag these for review and answer the item types you find easier first.

> For Decision Making, which has a wide variety of question types, I identified which types I was best at and did them first when doing papers. I would aim to get them right before going onto more time consuming questions"

Shivani, 99th percentile

Quantitative Reasoning

The Quantitative Reasoning subtest assesses your ability to use numerical skills to solve problems. It assumes familiarity with numbers. However, items are less to do with numerical facility and more to do with problem solving (i.e. knowing what information to use and how to manipulate it using simple calculations and ratios). The subtest measures reasoning using numbers as a vehicle rather than measuring a facility with numbers.

UCAT Time	Questions
25 minutes (one minute for instruction and 24 minutes for questions)	36 questions associated with tables, charts, and/or graphs

Why Quantitative Reasoning?
Doctors and dentists are constantly required to look at data, review it and apply it to their own practice. On a practical level drug calculations based on patient weight, age and other factors have to be correct. At a more advanced level, medical and dental research requires an ability to interpret, critique and apply results presented in the form of complex statistics. Universities considering applicants need to know they have the aptitude to cope in these situations.

Quantitative Reasoning Items
You are required to solve problems by extracting relevant information from tables and other numerical presentations. Most questions will be shown as a set of four questions each connected to the same data. There are some questions that standalone and do not share data. Each question has five options. Your task is to choose the best option.

A simple on-screen calculator is available for use in this section. The calculator is integrated into the practice tests and we strongly recommend that you familiarise yourself with using it. You can also utilize your note board and pen.

Quantitative Reasoning Strategies
- Timing is very important in this section – pace yourself during the test. Check how you are doing halfway through and adjust your speed accordingly.

- Read the questions carefully – individual words and units may be crucial in answering the question correctly.

- In the first place try to understand the scenario presented – this will help you focus quickly on the questions.

- Use the laminated note board and pen provided to assist with your calculations.

- Review where there might be gaps in your maths. You may need to work out percentages, averages, ratios and fractions – remind yourself how to do some of these calculations if they are causing you problems.

- If you are finding a question difficult, eliminate the more obvious incorrect answers and make an educated guess.

- Practice your mental arithmetic to speed up your answering by reducing your reliance on the calculator.

Abstract Reasoning

Abstract Reasoning assesses your ability to identify patterns amongst abstract shapes where irrelevant and distracting material may lead to incorrect conclusions. The test therefore measures your ability to change track, critically evaluate and generate hypotheses and requires you to query judgements as you go along.

UCAT Time	Questions
14 minutes (one minute for instruction, 13 minutes for questions)	55 questions associated with sets of shapes

Why Abstract Reasoning?
When considering possible diagnoses, medical practitioners may be presented with a set of symptoms and/or results. Some information may be more reliable, more relevant and clearer than other information. Doctors and Dentists need to make judgements about such information, identifying the information which will help them reach conclusions. Carrying out research involving data often involves identifying patterns in results in order to generate further hypotheses.

Abstract Reasoning Items
There are 4 different question types in the Abstract Reasoning subtest.

For type 1, you will be presented with two sets of shapes labelled "Set A" and "Set B". You will be given a test shape and asked to decide whether the test shape belongs to Set A, Set B, or Neither.

For type 2, you will be presented with a series of shapes. You will be asked to select the next shape in the series.

For type 3, you will be presented with a statement, involving a group of shapes. You will be asked to determine which shape completes the statement.

For type 4, you will be presented with two sets of shapes labelled "Set A" and "Set B". You will be asked to select which of the four response options belongs to Set A or Set B.

Abstract Reasoning Strategies
- Timing is again very challenging in this section.

- Remember to leave time to review set A and set B at the beginning of each set of questions. Once you have identified what links each set you are half way there.

- Consider patterns around size and shape of objects; number of objects; sides of objects; shading and colour; symmetry, number of angles, position and direction... this sounds complicated but as you look at these shapes you will start to grasp what you need to focus on.

- What links shapes in set A and those in set B will often be linked in some way – remembering this may help you ignore distracting information.

- If you can't see the pattern, don't waste time; flag this set of questions and move on to the next set of shapes. You can revisit it if you have time at the end.

Situational Judgement

The test measures your capacity to understand real world situations and to identify critical factors and appropriate behaviour in dealing with them.

UCAT Time	Questions
27 minutes (one minute for instruction and 26 minutes for questions)	69 questions associated with 22 scenarios (consisting of between 2 and 5 questions)

Why Situational Judgement?

The test assesses integrity, perspective taking, team involvement, resilience and adaptability. SJTs are used widely in medical and dental selection, including selection of Interns, GPs and other medical specialities.

Situational Judgement Test Items

The test consists of a series of scenarios for which you will need to consider either the appropriateness of possible actions, or the importance of possible considerations. You do not require medical or procedural knowledge to answer.

Some of the questions require you to rate each response from four possible options.

When considering how to respond to the **importance** of certain options, an option is:

- **Very important** if this is something that is vital to take into account

- **Important** if this is something that is important but not vital to take into account

- **Of minor importance** if this is something that could be taken into account, but it does not matter if it is considered or not

- **Not important at all** if this is something that should definitely not be taken into account.

When considering how to respond to the **appropriateness** of certain options, an option is:

- **A very appropriate thing to do** if it will address at least one aspect (not necessarily all aspects) of the situation

- **Appropriate, but not ideal** if it could be done, but is not necessarily a very good thing to do

- **Inappropriate, but not awful** if it should not really be done, but would not be terrible

- **A very inappropriate thing to do** if it should definitely not be done and would make the situation worse.

Other questions require you to choose the most and least appropriate action to take from the three options provided.

> For SJT look at lots of past questions, and read through the explanations or model answers that are given as feedback. A general summary of any appropriate answer would be that the idea proposed is a local, direct solution to the problem, that doesn't reflect badly upon the profession and always puts the patient first."
>
> **Emma, 99th percentile**

Situational Judgement Strategies

- Read each scenario and response thoroughly before answering.

- Remember, there are different styles of questions in this subtest; read the instructions carefully to make sure you understand what you have to do.

- Within a scenario, each rating can be used more than once or not at all. For example, all response options can be given the same rating of very appropriate.

- Responses should relate to what an individual should do, rather than what they may be likely to do.

- Response options should be treated independently. You should make a judgement as to the appropriateness or importance of a response option independent from the other options presented within the scenario.

- Response options provided are not intended to represent all possible options. The response you think would be the most appropriate/most important may not be present.

- Some options may be appropriate/ important in the short term (i.e. immediately addressing a wrong doing) and some are appropriate/ important in the long term (discussing the implications of the wrong doing after the event). Consider response options irrelevant of the timeframe. A response option may still be an appropriate thing to do even if it is not something that can be done immediately.

- When deciding which is the most / least appropriate action, all of the possible options may be good actions to take, the question is asking you to prioritise the actions.

As part of your preparation you may wish to refer to: 'Good Medical Practice: a code of conduct for doctors in Australia' from the Medical Board of Australia, and 'Good Medical Practice' from the Medical Council of New Zealand (these documents are available online).

Marking and scores

Verbal Reasoning, Decision Making, Quantitative Reasoning and Abstract Reasoning are marked on the number of correct answers you give.

Questions with one correct answer are worth 1 mark. Questions with multiple answers (such as those in Decision Making) are worth 2 marks, with 1 mark awarded to partially correct responses.

As the number of items varies between Verbal Reasoning, Decision Making, Quantitative Reasoning and Abstract Reasoning it is not possible to make a direct comparison of the raw scores between the cognitive subtests. Raw scores are therefore converted to scale scores that share a common range from 300 to 900.

• A total scale score is generated by summing the individual scale scores of Verbal Reasoning, Decision Making, Quantitative Reasoning and Abstract Reasoning.

• A total scale score ranges from 1200 to 3600.

Raw scores are then converted to scaled scores within a range of 300 to 900.

Within the Situational Judgement test full marks are awarded for an item if the response matches the correct answer and partial marks awarded if the response is close to the correct answer.

As the SJT is a measure of non-cognitive attributes, it will be considered by universities in a different manner to the cognitive subtests. Please refer to their websites for more details.

There is no negative marking for incorrect answers in any of the subtests, and performance on one item does not influence which other items are presented.

"You'll probably get tired of hearing this, but reflection is incredibly important. After each practice session, reflect on what the questions you answered were asking for and ask yourself is there a quicker or easier way to do this? Is there a reason why the answer couldn't possibly be any of the other options?

In doing this, you become a lot better at ruling out answers so even if you feel pushed for time you can make a very good guess."

Olukayode, 99th percentile

Using My Results

When do I Receive My Result?

Your score report will be accessible online through your Pearson VUE account within 24 hours of sitting your test.

2020 results are only valid for the current university admissions cycle (for entry into medical or dental school in 2021).

How Do I Use My UCAT Result?

You will have your test result before most of the university application deadlines so please ensure you use this to help inform your university choices. Our universities decide autonomously how they use the UCAT ANZ score. Please check the websites of the individual universities to which you intend to apply to ensure you are not wasting an application.

Test Statistics

In order to help you understand how well you have performed compared to other candidates we will publish summary test statistics on the Test Statistics page of our website in August. **ucat.edu.au/ucat-anz/results/ test-statistics/**

Delivering Results

We will communicate all test results to our Australian and New Zealand Consortium universities by early September. You do not need to take any further action. Note: University applications should be submitted by the deadlines indicated on the individual websites.

If you are applying to both Australian/ New Zealand and UK universities, please visit the Results section of our website for information to have your results provided to UK universities: **www.ucat.edu.au/ucat-anz/results/**

Practising for the Test

The UCAT is an important test. Although it is a test of aptitude rather than academic knowledge, you should still allow time to prepare thoroughly.

You should practise for the test using the FREE and OFFICIAL resources available on the Practice Tests and Resources page of the UCAT website. These have been developed by the UCAT Consortium and provide comprehensive information on the test and materials to support your preparation, including extensive question banks and a number of timed practice tests. **ucat.edu.au/ucat-anz/practice-tests/**

We would recommend you spend around 25-30 hours preparing for the UCAT. This is the amount of preparation done by the highest scoring respondents to our most recent candidate survey. It's best to start 4-6 weeks before your test date and do 'little and often' each day, building up your practice gradually as you near your test date.

As practice materials are compiled from previous test questions, there may be a higher proportion of questions with a UK context than you will see in the UCAT ANZ.

NOTE: The UCAT Consortium does not work with or endorse commercial companies offering coaching and resources for our test. These companies are not affiliated with UCAT in any way.

How should I prepare?

- Use this **Official Guide** as the majority of candidates we talk to indicate that reading this increased their knowledge of both the test content and also how to prepare effectively for the test

- Use the **Tour Tutorial** to familiarise yourself with the onscreen test format, learn how to move around the screen and through the test, how to flag and review questions, and to use the on-screen calculator provided

- Use the interactive **Question Tutorial** to find out about the different question types you will see and learn useful strategies for approaching and answering questions in each of the subtests

- **Did you know that we provide over 1,000 FREE practice questions on our website?** Once you understand the different sections of the test, begin using our useful online **Question Banks** which contain hundreds of example questions which you can you to familiarise yourself with the format and style of questions for each subtest

- You can watch a number of videos to support your preparation by finding **OfficialUCAT** on **Vimeo** and **Youtube.** High-scoring candidates share advice on their revision tips and overall test experience, plus a selection of Admissions Tutors from our UK Consortium Universities share their thoughts on the use of the test and what they look for in an applicant

- The **Official UCAT Practice App** is a free preparation resource which allows you to familiarise yourself with the question styles in each subtest. It is a complementary resource in addition to the online practice tests, to boost your preparation. Download this from the iTunes App Store or Google Play Store

- **An essential part of your preparation should be to use the official UCAT Practice Tests**. We provide you with three **fully timed tests which mimic the live testing experience**. Questions are of an equivalent standard to those you will encounter in the test and you can review your responses against answer rationales. The practice tests are also vital in helping you to understand the time limitations in each section and to develop strategies to approach each subtest with this in mind.

Test Strategies and Advice

We regularly interview our highest-scoring candidates for their advice on how they prepared for the test. Some of this feedback, along with our own advice, is below:

- Candidates who take our test early do better - FACT! Doing this will allow you to concentrate on other things (such as your university application!). If you book early you will have your choice of test slots and if you then feel unwell or unprepared you have time to reschedule.

- Seek help and advice from your school/college or via online student forums from previous test takers.

- If you have not studied mathematics recently, make additional time to revisit and practice your mathematical skills as this will impact on performance in the Quantitative Reasoning section in particular.

- Once you've worked out the subtests you are better at, focus your preparation on those with which you are less confident, using the answer rationales to see where you may be going wrong.

- If you are not well, reschedule your test to a later date at least 24 hours before your test appointment by contacting Pearson VUE Customer Services. In presenting yourself for testing, you are declaring yourself fit. We will not consider health issues as mitigating circumstances.

- Good multiple-choice questions include answer options that are wrong but almost right. Work hard to find and eliminate them. Questions like these are not tricks. Accept that one (and only one) of the answers is correct. All the questions have been thoroughly checked.

- Many candidates do not complete all questions in the test. Use the timed practice tests as you get nearer to your test date to ensure you are managing your time effectively.

- Try not to leave unanswered questions. If you are finding a question difficult, eliminate the more obvious incorrect answers, then make your best guess from those that are left.
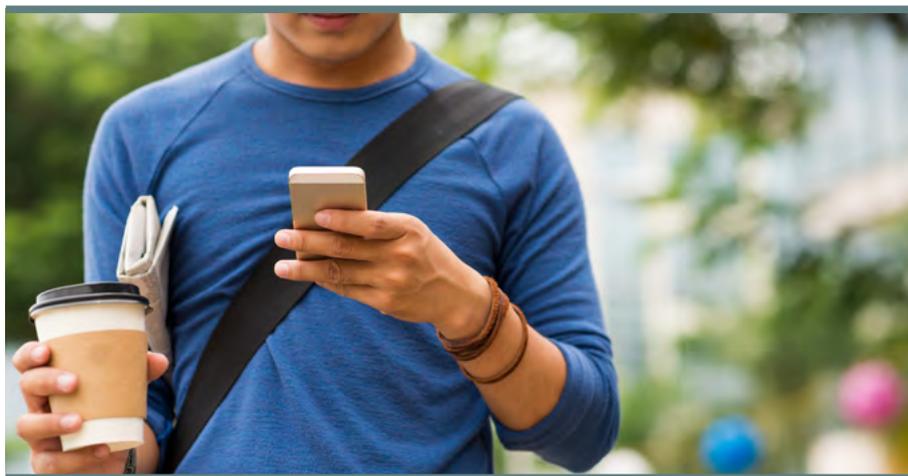
> "The mock tests on the UCAT website are the most valuable resource you have; don't waste them by attempting them before you've done any preparation. Find a bank of questions and get practice on each type before trying a mock test."
>
> **Adam, 99th percentile**

- No points are deducted for wrong answers – we do not use negative marking. If you are struggling with a question, make your best guess and move on. You can flag it for review if you want to come back to it later.

- Using the Flag and Review functions effectively featured strongly in advice from last year's highest scorers when questioned on how they managed the time constraints within the test.

- Finally, stay calm during the test. Pace yourself and move on if you're struggling. It is inevitable you will find some questions and sections easier than others.

Keyboard Shortcuts
Keyboard shortcuts can be used to navigate through the test if you find this preferable to using the mouse.

Wherever there is a letter underlined, the Alt key can be used with the underlined letter as a keyboard short cut, e.g. Alt + N = Next (as displayed below) and Alt + P = Previous.

The shortcuts available at any time during the test depend on which screen is currently being viewed.

Keyboard shortcuts cannot be used to select answers to questions; this has to be done by using the mouse to select the desired response, and in some cases to drag and drop an answer.

Calculator
A simple on-screen calculator is available for the Decision Making and Quantitative Reasoning subtests. To access this click on the icon in the top left hand side of your screen.

The calculator will look similar to this:
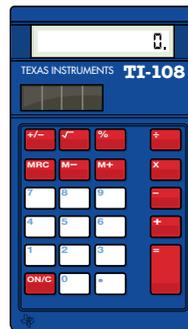
The calculator has been included within the timed practice tests. **We strongly advise you to use the calculator when taking the practice tests in order to familiarise yourself with the functionality.** Some keyboards at Pearson VUE test centres may not contain the numeric keypad on the right side of the keyboard, therefore you should practise using the calculator with the mouse as well the keypad.

In the live test the calculator closes when clicking away or moving to another question. It can be recalled by clicking on the icon; your current calculations should be retained.

> I found the UCAT website incredibly useful, I felt the practice tests on there were the most realistic resources I used and by completing these tests throughout my preparation it allowed me to monitor my progress and help improve my scores each time.
>
> Also, I downloaded the UCAT app onto my phone so I could do a couple of questions if I had time when out and about."

Rachael, 99th percentile

You can use the mouse or the number pad on your keyboard to operate the calculator. **Make sure the 'Num Lock' is on for the number pad to work**. Not all keyboards at Pearson VUE test centres contain the numeric key pad on the right side of the keyboard. Candidates should practise using the calculator with the mouse as well as the numeric keypad. Due to limitations with the web browser format the practice test calculator does not retain calculations when you click away or move to another question.

If you need help with the calculator during the test please raise your hand.

What about commercial companies?

Whilst there are many commercial companies publishing books and offering coaching for our test, the UCAT ANZ Consortium does not work with any of these companies or endorse the use of their materials. Taking advantage of these opportunities can cost candidates a great deal of money and we would advise you to be sceptical about claims they can help you do well in the test by coaching.

Commercial organisations will be using questions that are not necessarily of the standard you will encounter in the UCAT and this may distort your performance whilst practising. Screen views may be different and commercial organisations are unlikely to include the new question types which you may encounter in your test. More significantly, they may also not replicate the UCAT scoring accurately and may give misleading indicators of your anticipated UCAT score.

We therefore strongly advise candidates to use the official Practices Tests and Question Banks on our website, and to be cautious about using resources from any commercial providers as these are not affiliated with UCAT in any way.

Adviser Resources

Schools and colleges can access useful resources to help them advise their students about sitting the UCAT from the Practice Test page of our website.

ucat.edu.au/ucat-anz/practice-tests/

Test Day

You may be nervous, but being organised in advance can save any unnecessary stress on your test day. Please read this section carefully, particularly the information regarding correct ID to be able to sit your test, to avoid any surprises on your arrival at the Test Centre.

Arrival
Before you set off for your test, make a note of the Test Centre's address and phone number and find it on a map.

Please arrive at the Test Centre at least 30 minutes before your scheduled test time to complete the check-in process. Candidates who arrive more than 15 minutes after their scheduled appointment time will not be allowed to take the test and will not be eligible to be rescheduled or refunded. This applies in cases of transport problems as well as forgetfulness and lateness.

On arrival, you should present to the Test Centre reception BOTH of the following:
· a printout of your confirmation email from Pearson VUE
· one piece of photographic identification from our approved list.
   See the Identification section overleaf.

During the check-in process the test centre will take a digital photograph of you for security purposes. You will also be asked to sign the UCAT ANZ Consortium Examination Rules. You will sign these to state that you understand them. The Examination Rules are available at the Test Day page of our website, please familiarise yourself with these before your test.
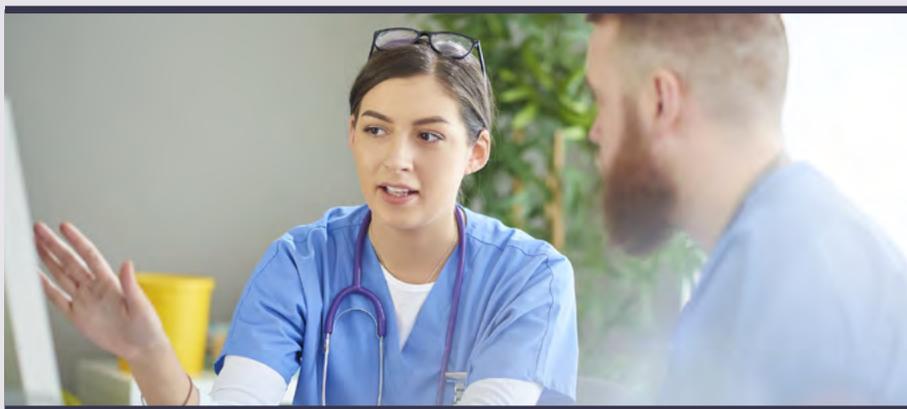
Identification (ID)

You must present one piece of approved photographic identification from the list below. You must present the original ID (not a photocopy, photo or digital ID) and it must be valid (unexpired).

The name and date of birth on your ID must exactly match the name and date of birth you provided when you registered. The photograph in your identification document must be recognisable as a likeness to you on the day of the test.

Passport - an original, valid passport that contains a recognisable photo.

Driver's licence - A government issued original, valid licence that contains a recognisable photo will ONLY be accepted at test centres in the country of issue. You may present a learner's permit, probationary or full licence. A digital licence will not be accepted.

Australian Keypass Card - An original, valid Keypass Card/ Under 18 Keypass Card that contains a recognisable photo. A digital Keypass will not be accepted. The Keypass Card is issued by Australia Post.

Australian Proof of Age Card - A government issued original, valid Australian Proof of Age Card that contains a recognisable photo. Only the following Proof of Age Cards from each state or territory are accepted:
- ACT Proof of Identity Card
- NSW Photo Card
- NT Evidence of Age Card
- QLD Photo Identification Card
- SA Proof of Age Card
- TAS Personal Information Card
- VIC Proof of Age Card
- WA Photo Card

New Zealand 18+ / Kiwi Access Card
An original, valid 18+ / Kiwi Access Card that contains a recognisable photo. The Kiwi Access Card is issued by NZ Post and has replaced the 18+ Card.

If you do not bring acceptable photographic identification you will not be allowed to sit the test and will not be eligible to be rescheduled or refunded.

Full details regarding acceptable photographic identification can be found on our website **ucat.edu.au/ucat-anz/ test-day/**.

Personal belongings

You will be asked to store your personal belongings in a locker or in a designated place as directed by the test administrator at the test centre. Personal belongings (including bags, coats, papers, books, pens, calculators, watches, wallets, keys, IDs, mobile phones, sweets, food and drinks) are not allowed into the testing room. For clarity, nothing is allowed into the testing room apart from you and the indoor clothes you are wearing. Please see the **Test Day** page on our website for further clarification.

Environment

You will be allocated a desk space in the testing room at which you will find your PC, keyboard and space for your laminated notebook and marker pen. There will be other people taking tests in the same room as you and as tests start and finish at different times, there may be some limited disturbance as other test takers arrive and leave the room. The test centre will endeavour for such disturbance to be kept to a minimum. **You can request ear plugs if you think this will be disturbing.**

Calculator

A simple on-screen calculator is available within the test. See the **Practising for the Test section** of this guide for further details of the on-screen calculator

We strongly advise you to use the calculator when taking the practice tests in order to familiarise yourself with the functionality.

Notebook and Marker Pen

You will be given a marker pen and a laminated notebook to make notes during your test. If another notebook is required, you should raise your hand and request one from the invigilator.

The invigilator will have checked the pen is working before giving it out. You may wish to check this before you start to avoid the need to seek assistance during testing. If you are not given a notebook and a pen when you enter the test room, you should request them by raising your hand. Not requesting these items will not be considered a mitigating circumstance.

Breaks

Please note that once started the test cannot be paused. If you need a break to take medication or use the toilets, please raise your hand to notify the invigilator who will assist you in leaving the test room. However the test will continue running and you will lose test time whilst you are out of the test room.

Problems

In attending to test you are declaring yourself fit to take the test. If you feel unwell you should reschedule to a later date. We will not consider such health issues as mitigating circumstances.

If you feel ill during your test, raise your hand to notify the invigilator. If you do not do this your illness will not be accepted as mitigating circumstances. If you are not well enough to continue testing please contact the UCAT Office as soon as possible.

If you experience hardware/software problems, noise disturbance or other distractions, notify the invigilator immediately by raising your hand. If you do not do this, such circumstances will not be accepted as mitigating circumstances – especially where it is possible that had an incident been reported, the issue could have been resolved by the invigilator.

Unprofessional behaviour

We expect candidates to meet minimum standards of acceptable behaviour during testing and during any interactions with the UCAT ANZ Consortium and Pearson VUE staff. Please familiarise yourself with the Professional Examination Rules before your test.

Where candidates fall short of these minimum standards, such incidents will be thoroughly investigated. Where such allegations of misconduct are upheld, we reserve the right to take actions which may include:

- withdrawal of all test results
- disqualification from sitting the test for a period in the future
- the sharing of the outcomes of the investigation with legitimate third parties (which may include TACs and Consortium Universities).

Examples of misconduct include:

- Testing more than once in any test cycle
- attempting to take the UCAT ANZ in any year prior to the final year of secondary schooling
- breach of security arrangements
- impersonation
- failure to follow invigilator or other staff instructions
- creating a disturbance
- using prohibited aids (e.g. notes, note paper, calculators, mobile phone, audio/recording device etc.)
- copying another candidate's work
- giving or receiving assistance from another candidate during the test
- using the test questions, their content or information about them for purposes other than sitting the UCAT
- giving of false or misleading information during the registration, booking and payment processes
- giving false or misleading information during the complaints and appeals processes
- giving of false or misleading information relating to test results during admissions processes..

Mitigating Circumstances

Illness or Personal Circumstances

The UCAT is a compulsory entry requirement for our Consortium Universities, however, we understand that some candidates may experience mitigating circumstances which may affect their ability to take the test. **Candidates who present themselves for their test are declaring themselves fit to take the test.**

If you are not fit to sit your test, you must reschedule your appointment to a later date, even if this means losing the test fee. Please refer to the Rescheduling and Cancelling page of our website for information: ucat.edu.au/ucat-anz/registration-booking/rescheduling-and-cancelling/

If you plan to take the test in the final week of testing you may encounter difficulties rescheduling within the testing window and may have to travel much further to sit the test at an available test centre. This is why we advise candidates to test early in the test cycle.

Test Day Problems

The UCAT ANZ Consortium and our partner Pearson VUE aim to provide you with a straightforward and convenient way of sitting your test in a businesslike environment. However, occasionally things may go wrong and we have put systems in place to deal with such circumstances.

If you feel ill during your test, raise your hand to notify the invigilator. If you do not do this your illness will not be accepted as mitigating circumstances. If you are too unwell to continue, you should end your test and then email the UCAT ANZ Office within one business day of your test sitting with medical documentation.

If you experience hardware/software problems, noise disturbance or other distractions, notify the invigilator immediately by raising your hand. If you do not do this, such circumstances will not be accepted as mitigating circumstances – especially where it is possible that had an incident been reported, the issue could have been resolved by the invigilator. The invigilator cannot answer questions related to test content.

If you wish an incident to be followed up that you have reported at your test sitting you must contact Pearson VUE Customer Services within 1 business day of sitting your test. The reporting of an incident at the test centre does not automatically result in a detailed follow up unless it is specifically requested.

Once you have followed up with Pearson VUE regarding an incident, Pearson VUE will investigate and the outcome of the investigation will be reported back to you by email. If you have not heard from Pearson VUE within 5 business days please contact Pearson VUE for an update on how the investigation is progressing.

We will only consider incidents reported after the day of testing in exceptional circumstances as it is often difficult for us to investigate such incidents fully.

Candidate Complaints

If you are not satisfied with the outcome of the investigation by Pearson VUE, the UCAT ANZ Consortium has put in place a Complaints and Appeals Procedure which can be found on our website. Please note that we do not deal with complaints about admissions decisions, which should be addressed to the individual university concerned.

Practice Questions

The following are a selection of questions reproduced from our free Official UCAT Practice App available from the iTunes App Store and Google Play.

The App is a great way to practise on the go when you have a few minutes to spare, and can be used in addition to the online preparation materials on the UCAT website, which mimic the live test experience more accurately.

In addition to these questions, you can also find three fully timed practice tests and hundreds of further practice questions on the UCAT ANZ website: **ucat.edu.au/ucat-anz/ practice-tests/**.

Practice Questions

Verbal Reasoning

VR1 – The Teleological Argument

Since the Greeks, the teleological argument has been commonly used to prove the existence of a Creator or Supreme Being. It was famously expressed by William Paley in 1802, who imagined finding a pocket watch on a heath. If you had never seen a watch before, you might marvel at its mechanism and rightly assume that someone with great skill had made it. He pointed to the intricate structure of living things and argued that they were so cleverly put together that some unknown designer must have made them. He went on from there to say that because organs and organisms in nature seemed to have a purpose – bees pollinate flowers, the intricate structure of the eye enables us to see – that a hidden planner is at work. The Universe operates to known rules – Newton's Laws of Motion for example – which is a further argument for a planned and purposeful world.

This argument became seriously challenged fifty years later, when Charles Darwin published his theory of natural selection as an explanation for the variety and complexity of living organisms. This did not presuppose a hidden designer. More than a hundred and fifty years later, the evolutionist Richard Dawkins published a book explaining evolution by natural selection entitled 'The Blind Watchmaker'.

VR1-1 Dawkins' title of his book, 'The Blind Watchmaker', is appropriate because:
- ☐ A no watchmaker is blind.
- ☐ B the structure of living things cannot be explained.
- ☐ C a Supreme Being must be blind.
- ☐ D natural selection does not depend on an intelligent designer.

VR1-2 From the passage, teleology can be defined as:
- ☐ A arguing that all events have a purpose.
- ☐ B using Natural Selection to explain a watch's mechanism.
- ☐ C arguing that everything happens by chance.
- ☐ D using Newton's Laws to predict the future of the Universe.

VR1-3 Which of these assertions is best supported by information contained in the passage?
- ☐ A Natural selection depends on a hidden designer.
- ☐ B Natural selection depends on chance events.
- ☐ C The operation of the Universe does not depend on hidden rules.
- ☐ D The Universe has been carefully planned.

VR1-4 **Using the information in the passage, a belief in the existence of a Supreme Being is:**
- ⬜ A justified because humans have a purpose.
- ⬜ B not justified because of evolution.
- ⬜ C not possible to justify using scientific theories.
- ⬜ D possible to contradict using scientific theories.

VR1-5 **William Paley used the construction of a watch in an argument from:**
- ⬜ A analogy
- ⬜ B deduction
- ⬜ C comparison
- ⬜ D authority

VR1-6 **The structure of the human eye is similar to a camera. From the passage we can conclude that the human eye:**
- ⬜ A must take pictures like a camera.
- ⬜ B may take pictures like a camera.
- ⬜ C was designed like a camera.
- ⬜ D did not evolve like a camera.

Verbal Reasoning

VR2 – The 1737 Licensing Act

London's West End is famous for its theatres but this was not always so. Between 1642 and 1660 all theatrical performances were banned as immoral, corrupt and subversive. In 1660 drama was legalised once more but in all England only two London theatres and acting companies were permitted. Royal sponsorship resulted in strict control of content and performance while critical comment was forbidden. Theatre catered for upper class audiences.

In the 1690s commercial interests replaced royal patronage and government control decreased. Owners, seeking increased profits wanted more socially diverse audiences. Many dramatists, leading up to the late 1730s criticised the government and royal family. As performances became increasingly critical and outspoken the government established tighter control and imposed censorship. The 1737 Licensing Act was passed following the reading in parliament of a scurrilous play, *The Golden Rump*, which offensively mocked King George's personal habits.

The Lord Chamberlain's office, which censored all plays two weeks before performance, only licensed them if everything objectionable was deleted. Heavy fines and imprisonment were used to punish authors and actors who broke this law. Many authors resented this restriction on their freedom to criticise politicians.

After 1788 magistrates could authorise local theatres. Many new provincial theatres were built but London theatres were still restricted to two. Country gentry could now enjoy culture not available to many Londoners. Censorship meant fewer plays were written so critics of government found new satirical mechanisms and London theatre managers developed new entertainment forms to attract audiences. Censorship finally ended in 1968.

VR2-1 Which of these statements is best supported by the passage?
- A. The two London theatres allowed by the Licensing Act were both in the West End.
- B. The king of England who ascended the throne in 1660 was a supporter of theatre.
- C. The Lord Chamberlain was appointed because he was an expert in the writing of plays.
- D. The terms of the Licensing Act remained in force unaltered until the twentieth century.

VR2-2 Based on the passage, each of these statements is true EXCEPT:
- A. Plays were often used as a way of criticising government actions.
- B. The reigning king in 1737 was not popular with all of his subjects.
- C. The Licensing Act reduced the number of theatres allowed in London.
- D. Legal censorship of plays in England lasted for over two hundred years.

VR2-3 It was easier for people in the North of England to see plays in the 1790s compared to the 1660s because:
- A. better transport made it easier for them to get to London theatres.
- B. censorship had been relaxed so that more plays were being written.
- C. authors who criticised the government were no longer allowed to write plays.
- D. it was legally possible to open theatres outside London for the first time.

VR2-4 Using information contained in the passage it can be inferred that:
- A. criticism of the government in the 1730s was considered to be more of a problem than it was in the 1660s.
- B. the main reason the king sponsored theatres after 1660 was because he wanted to make a financial profit.
- C. the Lord Chamberlain's office was set up by theatre managers who wished to control the work of playwrights.
- D. many authors enjoyed the freedom the Licensing Act gave them to write plays which were critical of politics.

VR2-5 **Which of these statements best supports the claim that as far as drama was concerned 'country gentry could now enjoy culture not available to many Londoners'?**

- ☐ A. Before 1788 theatres were only legally allowed in London.
- ☐ B. After 1788 new theatres were opened in several provincial towns.
- ☐ C. Theatre managers in London experimented with new types of amusement.
- ☐ D. In the 1690s royal sponsorship of theatres was replaced by commercial interests.

VR2-6 **In the eighteenth century the main target audience for theatre managers was:**

- ☐ A. the upper classes.
- ☐ B. country gentry.
- ☐ C. members of the government.
- ☐ D. the middle and working classes.

VR2-7 **Using information contained in the passage, it is most likely that parliament would have objected to the play _The Golden Rump_, because it was:**

- ☐ A. satirical
- ☐ B. anti-government
- ☐ C. individually insulting
- ☐ D. badly written

VR2-8 **It is most likely that the author believed one of the main targets attacked by playwrights between 1690 and 1730 to be:**

- ☐ A. London magistrates.
- ☐ B. members of the government.
- ☐ C. the Lord Chamberlain's office.
- ☐ D. theatre managers and owners.

Verbal Reasoning

VR3 – Exchange Rates

A basket of chosen groceries may cost £50 in the UK, but to pay for those same groceries in a supermarket in the USA you would need to have exchanged your pounds for US dollars.

People exchange some of their own currency for that of another country in order to buy goods from that country or to save their money in that country - for example, Australia. People choose to save their money in other countries to get a better return than they would in the UK. Such savings would involve lending to a bank by the UK individual and borrowing by the bank.

However, the prices at which currencies are bought and sold fluctuate more than the groceries. A way to avoid all the uncertainty of buying or selling goods from or to other countries in different currencies is for countries all to use the same currency, as in the eurozone. Hence the euro was introduced in 1999 and, by 2013, was used by 17 countries which previously had 17 different currencies all with their own exchange rates.

If someone in France buys goods from a firm in Spain or goes on holiday to Italy, there are no currency issues because they are all using the euro. By contrast, if

exchange rates fluctuate, my UK pounds may buy fewer euros (pound devalues), so a holiday in Portugal becomes more expensive or, if my pounds buy more euros (pound revalues), much cheaper. Problems arise for the eurozone (as for an individual country) if demand and supply for the euro fail to balance – excess demand causes exchange rate rises, excess supply means the exchange rate falls.

VR3-1 If the pound devalues against another currency, exports from the UK to that country will cost less in the country buying them in currency terms.
◯ A. True
◯ B. False
◯ C. Can't Tell

VR3-2 A person using the euro in France or Germany will be unaffected by changes in exchange rates between the euro and the UK £, even if they purchase goods imported from the UK.
◯ A. True
◯ B. False
◯ C. Can't Tell

VR3-3 If the interest rate on a savings account in Australia gives a rate of return three times higher than the best rate in the UK, a saver in the UK would always get at least twice as good a return after tax and currency fluctuations have been taken into account.
◯ A. True
◯ B. False
◯ C. Can't Tell

VR3-4 If I convert £50 into the equivalent number of US dollars, I will be able to buy the same basket of groceries in the USA as I originally purchased in the UK.
◯ A. True
◯ B. False
◯ C. Can't Tell

VR3-5 A country which imports many raw materials including oil and chemicals from overseas so it can manufacture products is in danger of adversely affecting its exchange rate as a result.
◯ A. True
◯ B. False
◯ C. Can't Tell

VR3-6 When a saver makes a deposit in a bank, this technically means the money is being lent by the bank.
◯ A. True
◯ B. False
◯ C. Can't Tell

VR3-7 If by importing £100 million-worth of raw materials, a country is then able to export an extra £200 million-worth of exports to other countries, the overall supply of its currency will rise.
◯ A. True
◯ B. False
◯ C. Can't Tell

VR3-8 A holiday company organizing tours across Asia by train guarantees not to increase its prices once the holiday has been booked. An initial payment of 10% is required with booking, and the other 90% is to be paid in Russian roubles a week before the holiday commences.

This means there is no possibility that the holiday will cost the traveller more than he or she expects to pay.

- ☐ A. True
- ☐ B. False
- ☐ C. Can't Tell

Verbal Reasoning

VR4 – Rule of War

Humans have fought each other since the dawn of civilisation. They have done so over food, territory, resources and slaves. Many developments in technology have been spurred along by the competition over weapons. While aggression may be a part of human nature, there are many ethical issues over war, and most would regard it as a wholly undesirable activity. Unspeakable things happen during wars, but fighting has usually been subject to implicit rules and codes of conduct. Although warfare has changed dramatically since the Geneva Conventions of 1949, they are still considered the cornerstone of contemporary International Humanitarian Law. They protect combatants who find themselves hors de combat, and they protect civilians caught up in the zone of war. These treaties came into play for all recent international armed conflicts, including Afghanistan, the invasion of Iraq, the invasion of Chechnya and the war in Georgia. The Geneva Conventions also protect those affected by non-international armed conflicts such as the Syrian civil war.

While conventions lay down rules to which the leaders of countries or armies must adhere and answer to in international courts, the notional separation of combatants and civilians has become increasingly difficult to make. The mass bombings undertaken by both Britain and Germany in the Second World War were as much about intimidating the population as destroying weapons and military personnel. The rise of terrorism as a mode of warfare has further muddied the water. The use of drones in difficult warzones, presented as a safe and reliable method of attacking soldiers or terrorists who travel or live in civilian areas, has raised ethical questions for their operators.

VR4-1 The Geneva Conventions are designed to:

- ☐ A establish the human rights of military personnel in battle.
- ☐ B protect civilians against all actions of their government.
- ☐ C protect civilians caught up in battle areas.
- ☐ D prevent civilians taking up arms in wartime.

VR4-2 **One conclusion that can be drawn from the passage is that:**
- A humans will always fight one another.
- B there were no humanitarian conventions before 1949.
- C there is no justification for the conflict in Afghanistan.
- D civilians in civil wars have no legal rights.

VR4-3 **According to the passage, the writer most probably agrees that:**
- A the Geneva Conventions are ineffective.
- B the mass bombing of cities in wartime is an international crime.
- C there will be fewer wars in the future.
- D developments in technology will prevent wars.

VR4-4 **The use of armed drone aircraft, controlled by far distant operators, could be unethical because:**
- A there is a risk of injury to civilians.
- B the operator may not be a soldier.
- C terrorists are protected by international law.
- D their operators can only view through a remote camera.

VR4-5 **From the information in the passage, which of the following is correct?**
- A Everyone regards warfare as unethical.
- B Injury to civilians is an ethical consequence of warfare.
- C Acts of war are always unethical.
- D Drone attacks can have unethical consequences.

Verbal Reasoning

VR5 – Greener Jet Engines

The recent decision by the European Parliament to include air traffic in the EU's Emissions Trading Scheme (ETS) has increased the pressure on aircraft manufacturers to produce 'greener' aircraft. An estimated 3% of Europe's entire greenhouse gas emissions are currently generated by airlines, and with it potentially doubling by 2020 the introduction of this controversial tariff has increased the pace of innovation. There are two areas of potential fuel saving in aircraft design – the engines and the airframe. The ratio of lightweight materials and recycled components in wing and body production is growing, but creating an engine that reduces fuel consumption, noise and nitrous oxide pollution is key.

In normal turbofan designs, an intake fan at the front reduces the speed of air passing around the engine, mixing it with the much faster moving hot gases generated by burning fuel and air to create greater thrust. This calls for larger engine chambers which can allow this slowed air to pass through but the bigger the engine, the greater the weight, fuel consumption and noise. An American company, Pratt and Whitney, have developed such an engine by introducing a geared turbofan to their designs. This is based on the principle that turbines are most effective at high speeds and fans at much lower revolutions.

The gearbox acts to reduce the rotation of the inlet fan to around a third of the turbine inside the engine. This creates a 15% improvement in fuel efficiency and a smaller, lighter housing.

VR5-1 **If airlines adopt aircraft with 'greener' credentials by 2020, they will be considered for exemption from the Emissions Trading Scheme by the European Union.**
☐ A. True
☐ B. False
☐ C. Can't Tell

VR5-2 **Airline manufacturers are concentrating solely on the development of lighter, more fuel-efficient engines to meet the stringent emissions tariffs set by the European Union.**
☐ A. True
☐ B. False
☐ C. Can't Tell

VR5-3 **When comparing normal turbofan design to geared turbofans, two of the greatest differences are the size and weight of the chambers housing the engine components.**
☐ A. True
☐ B. False
☐ C. Can't Tell

VR5-4 **According to the EU, by 2020 airlines will contribute 3% of total greenhouse gas emissions across Europe.**
☐ A. True
☐ B. False
☐ C. Can't Tell

Verbal Reasoning

VR6 – Arctic Foxes

Research into the variation in numbers of the arctic fox has shown that, in areas where there is a population of small rodents, the number of foxes is associated with the numbers of rodents. The fox populations respond to increased food availability by increasing reproduction. However, in areas where there are no small rodents eg Svalbard in Norway, the picture is more complex.

Prior to 1973, the diaries of polar bear trappers (who took the bear furs, but left the carcasses) reported flourishing populations of arctic foxes.

After 1973, when the polar bear became a protected species, both the trappers and the reports of foxes declined.

Researchers estimated the fox numbers in Svalbard by several methods including a 'capture index' (the number of live foxes trapped in baited traps) and an 'observation index' (based on sightings by scientists and local people). Estimated numbers of foxes fluctuated: they were low in 1990/1991, rose from 1992 to 1995, and then dropped so sharply in autumn 1995 that they seemed to have disappeared from the area by 1996. Fox tracks were not observed again until autumn 1996.

Two important sources of food for arctic foxes in Svalbard are Barnacle geese and reindeer carcasses. Numbers of Barnacle geese rose until 1994, when predation on nests by foxes left only 2 surviving goslings. Numbers of goslings then rose to over 600 in 1996, when no foxes were observed. There was a sharp rise in reindeer mortality in the winter of 1993/4, which led to a high number of carcasses, but lower numbers in the winter of 1995/6.

Fox numbers may be influenced by the migration of foxes to other areas and/or by disease, but no studies were carried out to investigate this.

VR6-1 Which of the following is most likely to be true?

- ⃝ A. There is no relationship between the numbers of foxes captured, and those observed by local people.

- ⃝ B. The numbers of foxes captured and those observed by scientists will be the same.

- ⃝ C. Where there are rodents, as numbers of rodents go up, so will the number of foxes.

- ⃝ D. Where there are rodents, as numbers of foxes go up, so will the number of rodents.

VR6-2 Which of the following cannot be inferred from the passage?

- ⃝ A. Foxes act so as to limit the number of Barnacle geese.

- ⃝ B. Low reindeer numbers led to the 1996 crash in the number of foxes.

- ⃝ C. Methods for estimating fox numbers are imprecise.

- ⃝ D. The variations in animal population numbers are cyclic.

VR6-3 Which of the following statements about the disappearance of foxes in 1996 could be justified from the passage?

- ⃝ A. The foxes died from starvation.

- ⃝ B. The foxes were subject to predation by other animals.

- ⃝ C. The foxes died from disease.

- ⃝ D. The foxes had all been trapped.

VR6-4 After 1973, which of the following seems the least feasible reason for the decline in observed foxes?

- ⃝ A. There were fewer trappers.

- ⃝ B. Trappers did not report their experiences in diaries after 1973.

- ⃝ C. Polar bears declined after 1973.

- ⃝ D. There were fewer carcasses

Decision Making

DM1

Every year Madrigal School has a school photograph taken. Eight teachers sit at the front in a row.

Mr None sits fifth from the left with Mrs O'Rourke and Mr Percival on either side.

Mr Rowley sits as far away from Mrs O'Rourke as possible.

Mr Stephen sits next to Mr Percival.

Miss Zenzer does not sit beside Mrs O'Rourke or Miss Trollope.

Mr Warlock sits three seats away from Mr None.

			Mrs O'Rourke				

Which one of the following statements MUST be true?

- ☐ A Miss Zenzer sits at the far left of the row.
- ☐ B Mr Stephen sits next to Mrs O'Rourke.
- ☐ C Mr Warlock sits next to Mr Percival.
- ☐ D Miss Trollope sits at the far right of the row.

DM2

I walk my dogs daily.

Barker and Dainty have to walk alone.

Boxer goes for an afternoon walk.

Dainty is the only dog who has two walks each day.

Rex always has his morning walk with another dog.

Which one of the following MUST be true?

- ☐ A Boxer is Rex's companion.
- ☐ B Boxer has more than two walks a day.
- ☐ C I have at least five dogs.
- ☐ D Each day I have to make a minimum of six walks with my dogs.

DM3

In a prize draw two boys (Alec and Daniel) and three girls (Betty, Carole and Edna) each picked a prize (Pram and doll set, Roller blades, Chemistry set, Teddy bear, and Jigsaw puzzle).

The Pram and doll set was not picked out by a girl.

Edna and Carole were disappointed when the Roller blades were picked by one of the others.

The Chemistry set did not go to either Edna or Betty.

Daniel was quite amused when he picked the giant Teddy bear.

What gift did Edna pick?
- ☐ A Chemistry set
- ☐ B Jigsaw puzzle
- ☐ C Pram and doll set
- ☐ D Teddy bear

DM4
W, X, Y and Z are playing football in the garden. One of them breaks a window by mistake.

W says, 'It was X'.

X says, 'It was Y'.

Y says, 'It was not me'.

Z says, 'It was not me'.

Which one MUST be lying?
- ☐ A W is lying
- ☐ B X is lying
- ☐ C Y is lying
- ☐ D Z is lying

DM5
Four people H, I, J, K are a Doctor, a Manager, a Teacher and a Lecturer, not necessarily in that order. They each own a different type of vehicle.

H is a Doctor.

J owns a sports car.

K owns an electric car.

The person who owns a motor bike is not a Teacher.

The Manager polishes her scooter every weekend.

Which one of the following MUST be true?
- ☐ A K is a Teacher
- ☐ B J is a Teacher
- ☐ C I is a Manager
- ☐ D K is a Manager

DM6

Should we focus more on rehabilitating offenders rather than punishing them for the crimes they commit?

Select the strongest argument from the statements below.
- [ ] A Yes, crimes are often committed by people with serious personal issues.
- [ ] B Yes, focusing on the cause of crime will ultimately lead to a reduction in crime.
- [ ] C No, it doesn't matter what causes the crime, a crime is still a crime.
- [ ] D No, victims of crime need to see that justice has been done.

DM7

Should the Government make wearing a uniform compulsory in all schools?

Select the strongest argument from the statements below.
- [ ] A Yes, school uniform prevents students from being judged by the clothes they wear.
- [ ] B Yes, compulsory school uniform prepares pupils for the world of work.
- [ ] C No, enforcing school uniform would add to a Head Teacher's workload.
- [ ] D No, school uniforms are expensive for parents to purchase.

DM8

Should the maximum speed limit on motorways be reduced from 70 mph to 60 mph to improve road safety?

Select the strongest argument from the statements below.
- [ ] A Yes, reducing the speed limit will cut harmful fuel emissions.
- [ ] B No, the accident rate at the lower limit is no different to the one at the higher speed limit.
- [ ] C No, it is difficult to stop drivers ignoring the present speed limit; a new speed limit would be ignored in the same way.
- [ ] D No, the real problem is slow drivers, it would be better to have a minimum speed limit.

DM9

Should the number of university student places on arts/humanities courses be drastically cut?

Select the strongest argument from the statements below.
- [ ] A Yes, as they are not academically rigorous.
- [ ] B Yes, because the country does not need people with arts backgrounds.
- [ ] C No, because otherwise all the arts lecturers would be without work.
- [ ] D No, because many students benefit from the transferable skills they teach.

DM10

The town's new Academy for Girls specialises in sport.

All pupils at the academy are required to take three sports.
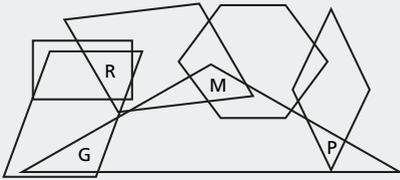
Key

□ gymnastics ▱ boxing
△ swimming ◇ line-dancing
▱ tennis ◇ athletics

Which letter shown above represents pupils participating in boxing, athletics and swimming?

- A Letter G
- B Letter M
- C Letter P
- D Letter R

DM11

The diagram shows the status and occupation of a number of people. Each shape shows a different status or occupation.
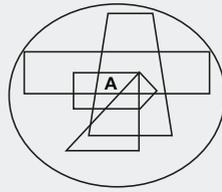
Key

▱ males
◸ in work
○ total population
□ in education
▭ married

What does the letter 'A' represent in the diagram above?

- A Unmarried women who are in education.
- B Unmarried men who are in work.
- C Married men who are education.
- D Married men who are neither in work nor in education.

DM12

The water sports centre offers three different activities. The table below shows the activities taken on one particular day.

Activity	Number of customers
Windsurfing only	5
Water-skiing only	11
Canoeing only	4
Windsurfing and Canoeing	12
Canoeing and water-skiing	8
Windsurfing and water-skiing	7
All three activities	13

There were 60 customers that day. How many did canoeing?

- A 4
- B 33
- C 37
- D 39

DM13

Twelve couples attended the tea dance, but they did not all join in every dance.

Four couples danced the quickstep; they took no further part in the dance.

Three couples danced the foxtrot and the waltz but not the quickstep or samba.

The five couples who danced the samba also danced the foxtrot and the waltz.

Which of the following represents the group of twelve couples?

- A
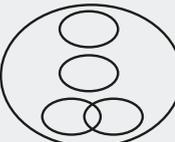
- B

- C
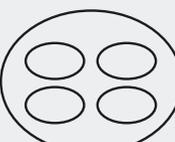
- D

DM14

The diagram gives information about the numbers of people who had holidays in certain countries.
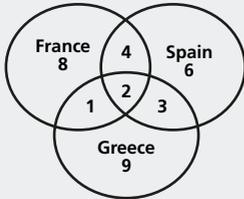
Which one of the following statements is true?
- A More people went to France than went to Spain.
- B More than half of the people who went to Spain also went to Greece.
- C 8 people went to exactly two countries.
- D 20 people went to only one country.

DM15

One night at a youth club 8 people played snooker.

12 people (of which 4 also played snooker) played table tennis.

9 people played darts (none of these played either snooker or table tennis).

6 people played no game; they just talked.

Which one of the following represents the activities taking place at the youth club that night?

- A
- B
- C
- D
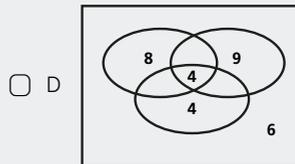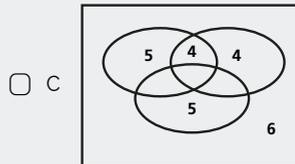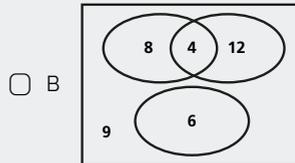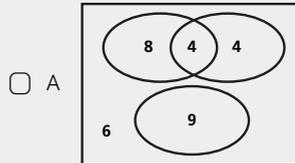
DM16

There are 48 people in a room. They are asked what they enjoy doing in their spare time.

29 of the people say they enjoy reading.

9 of the people say they enjoy watching television.

Which of the following MUST be true?

- ☐ A Between 10 and 19 (inclusive) people neither like reading nor like watching television.
- ☐ B There are exactly 20 people who like reading but do not like watching television.
- ☐ C There are more people who do not like reading than who do not like watching television.
- ☐ D There are 38 people who like either reading or watching television.

DM17

Martin's journey home from work involves taking the bus to the station, catching the six o'clock train and then a short walk to his house. If the bus is late, he has to catch a later train.

On 10 days out of the past 50, the bus has not reached the station in time for him to catch the six o'clock train. Similarly on 10 days out of the past 50, the six o'clock train has arrived late at Martin's home station.

Is it more likely than not that Martin will get home on time tomorrow?

- ☐ A Yes, the buses and the trains each meet the requirements of the timetable 40 out of 50 times respectively, so he should get home on time tomorrow.
- ☐ B Yes, if the bus is late, the train may be too, so he would get home on time.
- ☐ C No, on 20 occasions over the 50 days either the train or bus has been late, so it is unlikely he will get home on time.
- ☐ D No, every day is different so predictions are no more than guesses and wholly unreliable.

DM18

Father Christmas has a sack of wrapped presents from which visiting children can randomly select a gift. At the start, there are 15 presents of a harmonica and 15 of a drum in Father Christmas's sack. By lunchtime, 5 harmonicas and 4 drums have been chosen.

Has the chance of a harmonica being randomly selected now increased when the next child collects a present?

- [ ] A Yes, it was 1/2 and is now 10/21.
- [ ] B Yes, it was 1/2 and is now 11/21.
- [ ] C No, it was 1/2 and is now 11/21.
- [ ] D No, it was 1/2 and is now 10/21.

DM19

Three students, Sarah, Simon and Paul test the same coin for bias.

The table gives information about their results.

	Sarah	Simon	Paul
Throws	50	100	160
Heads	37	73	88

Sarah and Simon pool their results to give their estimate of the probability that when the coin is thrown once it lands Heads. Paul uses his results to give his estimate.

Will Sarah and Simon's estimate be better than Paul's estimate?

- [ ] A Yes, because it comes from two different tests.
- [ ] B Yes, because their separate estimates are very close to each other.
- [ ] C No, because Paul had more throws in total.
- [ ] D No, because Paul's estimate will be nearer one half.

QR1 Buying Leaflets

The table gives information about the cost of buying one leaflet from a printing company. VAT is charged at 20% of the total order.

	Number Ordered				
	1-9	10-49	50-199	200-599	600+
Single sided black/white	70p	60p	40p	30p	20p
Double sided black/white	£1.30	£1.00	70p	55p	40p
Single sided colour	£1.60	£1.10	80p	60p	50p
Double sided colour	£2.90	£2.00	£1.40	£1.00	90p
Note: 100p = £1.00					

QR1-1 Gina buys 450 single sided colour leaflets. The total cost, to the nearest £, including VAT is:
- A £206
- B £216
- C £270
- D £324
- E £432

QR1-2 Sophie buys 200 single sided black and white and 200 single sided colour leaflets. The total cost, including VAT is:
- A £216
- B £248
- C £310
- D £372
- E £420

QR1-3 Karin buys 150 single sided black and white and one and a half times as many single sided colour leaflets. The total cost, including VAT is:
- A £222
- B £234
- C £288
- D £330
- E £342

QR1-4 Stefan bought 300 double sided black and white leaflets and 100 single sided colour leaflets. What percentage, correct to 1 decimal place, of the total cost including VAT, did he spend on the colour leaflets?
- A 27.2%
- B 27.6%
- C 32.7%
- D 56.1%
- E 67.3%

QR1-5 Bo bought some double sided colour leaflets. The VAT on her bill was £12. How many leaflets did she buy?
- A 30
- B 36
- C 60
- D 72
- E 75

QR1-6 Frank bought some leaflets. The cost including VAT was £174. All the leaflets Frank bought were the same. How many leaflets did he buy?
- A 145
- B 290
- C 348
- D 696
- E 725

Quantitative Reasoning

QR2 Taste

A group of people were asked to taste some paper soaked in a weak solution of the chemical PTC. The table gives some information about the results.

	Women	Men	Girls	Boys
Can taste PTC	35	72	18	27
Cannot taste PTC	20	60	10	20

QR2-1 **Of the adults in the group, what percentage, correct to 1 decimal place can taste PTC?**
- [ ] A 40.0%
- [ ] B 40.8%
- [ ] C 57.2%
- [ ] D 58.0%
- [ ] E 59.1%

QR2-2 **3/5 of the women who can taste PTC and 7/12 of the men who can taste PTC do not drink coffee. What percentage, correct to 1 decimal place, of the adults who can taste PTC do drink coffee?**
- [ ] A 33.7%
- [ ] B 41.1%
- [ ] C 43.9%
- [ ] D 58.9%
- [ ] E 66.3%

QR2-3 **If 10% of the men who said they cannot taste PTC could in fact taste PTC at higher concentrations, what would be the ratio of men who can taste PTC to men who cannot taste PTC, at higher concentrations?**
- [ ] A 39:25
- [ ] B 39:27
- [ ] C 39:30
- [ ] D 41:25
- [ ] E 41:30

QR2-4 **A population of 100,000 people is equally divided between men, women, boys and girls. Use the data in the table to estimate the number, correct to 4 significant figures, of people in the population who can taste PTC.**
- [ ] A 40,020
- [ ] B 41,980
- [ ] C 58,020
- [ ] D 58,610
- [ ] E 59,980

QR2-5 **In a population, 8% can taste neither PTC nor sodium benzoate, 74% can taste PTC and 60% can taste sodium benzoate. What percentage can taste exactly one of these two chemicals?**
- [ ] A 18%
- [ ] B 32%
- [ ] C 42%
- [ ] D 50%
- [ ] E 58%

QR3 Balloon Flights

Helium balloons are used for weather research. Here is some information about how the temperature of the atmosphere changes with height and how fast balloons ascend.

Dry Air Temperature decrease is 5.2°C per 500m.

Wet Air Temperature decrease is 2.8°C per 500m.

The rate of climb of a balloon is 4.8 metres per second.

In addition, here is some information about conversion factors.

5280 feet = 1 mile. 1 mile = 1.6 km.

You can convert °C to °F using the rule F = 1.8 × C + 32.

QR3-1 When the ground temperature is 24°C, what is the temperature, correct to 1 decimal place, in dry air at a height of 1.8 km?
- A 5.3
- B 10.1
- C 13.9
- D 18.7
- E 19.3

QR3-2 When the ground temperature is 24°C, at what height in dry air, correct to 1 decimal place, is the temperature -15°C?
- A 3.2 km
- B 3.8 km
- C 7.0 km
- D 7.5 km
- E 15.0 km

QR3-3 A balloon rises in wet air from a ground temperature of 24°C. How many minutes, correct to the nearest minute, will it take to reach a height where the temperature is 0°C?
- A 6
- B 8
- C 9
- D 15
- E 343

QR3-4 A balloon rises from the ground through dry air. After 5 minutes the temperature of the air round the balloon is 12°C. What is the ground temperature, correct to the nearest °C?
- A 15°C
- B 16°C
- C 20°C
- D 27°C
- E 28°C

QR3-5 A balloon flew on Monday. A second balloon flew on Tuesday. The rate of climb of the second balloon was 25% more than the first balloon's. Both balloons flew to the same height. Which one of the following statements is true?
- A The second balloon took 25% of the time that the first balloon did.
- B The second balloon took 75% of the time that the first balloon did.
- C The second balloon took 80% of the time that the first balloon did.

- ☐ D The second balloon took 120% of the time that the first balloon did.
- ☐ E The second balloon took 125% of the time that the first balloon did.

QR3-6 What is the decrease of temperature, correct to 2 decimal places, in wet air when measured in °F per mile?
- ☐ A 2.49 °F per mile
- ☐ B 4.98 °F per mile
- ☐ C 6.30 °F per mile
- ☐ D 16.13 °F per mile
- ☐ E 29.95 °F per mile

Quantitative Reasoning

QR4 Concrete

The table gives information about the ratios, by volume, of material used to make types of concrete mix.

Type	Cement	Sand	Gravel
General use	1	2	4
Foundation	1	3	6
High Strength	2	2	3
Watertight	2	3	6
Rough	1	4	8

For example, rough concrete mix requires a ratio cement:sand:gravel of 1:4:8 by volume.

The mass of cement is 2,240 kg per m^3.
The mass of sand is 1,600 kg per m^3.
The mass of gravel is 1,680 kg per m^3.

For all concrete mixes, water is added in the proportion 7 litres water for every 25 kg of cement to make concrete.

(The mass of 1 litre of water is 1 kg)
(1000 litres = $1m^3$).

QR4-1 Which type of concrete mix contains the greatest proportion, by volume, of sand?
- ☐ A General use
- ☐ B Foundation
- ☐ C High Strength
- ☐ D Watertight
- ☐ E Rough

QR4-2 Jim is making general use concrete mix for a garage floor. The floor is rectangular, 9m by 4m and 15cm deep. How much sand in m^3, correct to 2 decimal places, is required?
- ☐ A $1.35m^3$
- ☐ B $1.54m^3$
- ☐ C $1.62m^3$
- ☐ D $1.66m^3$
- ☐ E $1.80m^3$

QR4-3 What is the ratio, by mass, of cement:gravel for general use concrete mix?
- ☐ A 1:3
- ☐ B 1:4
- ☐ C 2:9
- ☐ D 8:3
- ☐ E 10:21

QR4-4 How many litres of water, correct to the nearest whole litre, are needed to make 3.5 m³ of watertight concrete?

- ☐ A 111
- ☐ B 366
- ☐ C 399
- ☐ D 627
- ☐ E 5089

QR4-5 When high strength concrete is made, what percentage, correct to the nearest whole number, of the total mass will be water?

- ☐ A 8%
- ☐ B 9%
- ☐ C 10%
- ☐ D 22%
- ☐ E 28%

QR4-6 What is the ratio by volume, correct to 3 significant figures, of water to cement in any concrete mix?

- ☐ A 1:0.0159
- ☐ B 1:0.159
- ☐ C 1:0.627
- ☐ D 1:1.59
- ☐ E 1:6.27

> For me the most challenging sub-test was quantitative reasoning. I initially assumed that this was just simple maths and ignored it for a while. It was only later that I realised how constricting the timing was. While practising I learnt how important it was to not dwell on any questions and just guess and move on if I got stuck.
>
> I found it best to avoid using the calculator if possible but if it was absolutely necessary, I made sure 'number-lock' was turned on and I used the set of number keys on the right hand side of the keyboard."

Rahul, 99th percentile

Quantitative Reasoning

QR5 Motorboats

The table shows the total cost of renting different types of motorboats for a certain number of hours. Total cost is calculated using the deposit and the cost of renting per hour. Some information is missing in the table.

Type	Hours	Deposit	Cost per Hour	Total cost
A	2	_	£25	£135
B	4	_	£60	£330
C	8	£100	£75	_
D	10	£95	£100	£1,095

QR5-1 If the deposit for Type D motorboats is increased by 5% on Sundays, what will be the total cost of renting a Type D motorboat for 6 hours on a Sunday?

- ☐ A. £695.00
- ☐ B. £699.75
- ☐ C. £750.20
- ☐ D. £754.25
- ☐ E. £950.00

QR5-2 Martha's total cost of renting a Type C motorboat was £325. For how many hours did she rent the motorboat?

- ☐ A. 1
- ☐ B. 2
- ☐ C. 3
- ☐ D. 4
- ☐ E. 5

QR5-3 The total cost of renting a Type E motorboat is £240 per hour. Type C and Type E motorboats have the same deposit. What is the ratio of the cost per hour of a Type C motorboat to that of a Type E motorboat?

- ☐ A. 1:3
- ☐ B. 15:28
- ☐ C. 14:23
- ☐ D. 5:7
- ☐ E. 23:27

QR5-4 Alan rented a Type A motorboat for 3 hours on Monday and a Type C motorboat for 2 hours on Tuesday. What was the percentage change in Alan's total cost from Monday to Tuesday?

- ☐ A. 15.00%
- ☐ B. 50.00%
- ☐ C. 56.25%
- ☐ D. 72.25%
- ☐ E. 75.00%

AR1
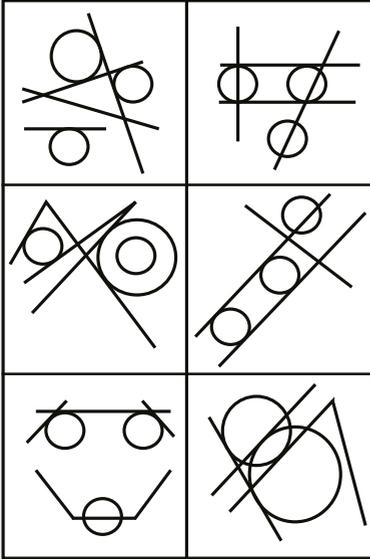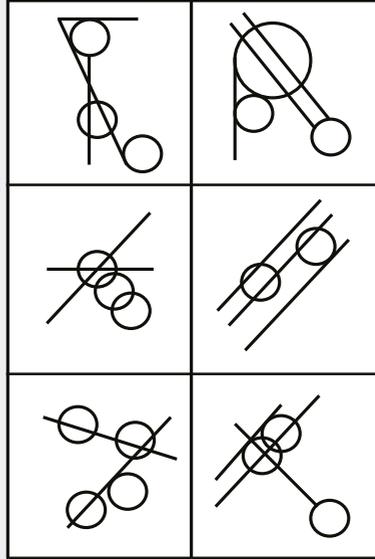
Set A

Set B

AR1-1
Test shape:

- A. Set A
- B. Set B
- C. Neither
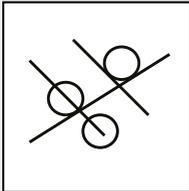
AR1-2
Test shape:

- A. Set A
- B. Set B
- C. Neither

AR1-3
Test shape:
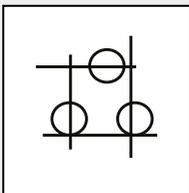
- A. Set A
- B. Set B
- C. Neither

AR1-4
Test shape:
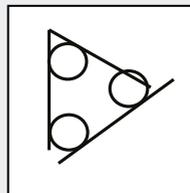
- A. Set A
- B. Set B
- C. Neither

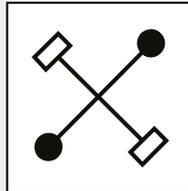**AR1-5**
Test shape:
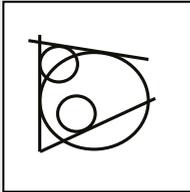
- A. Set A
- B. Set B
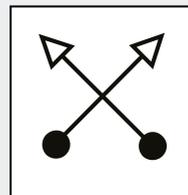- C. Neither

AR1-6
Test shape:
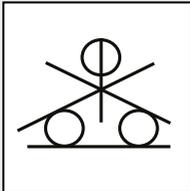
- A. Set A
- B. Set B
- C. Neither

AR1-7
Test shape:
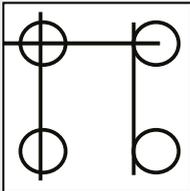
- A. Set A
- B. Set B
- C. Neither

AR1-8
Test shape:
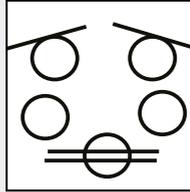
- A. Set A
- B. Set B
- C. Neither

AR1-9
Test shape:
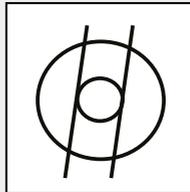
- A. Set A
- B. Set B
- C. Neither

AR1-10
Test shape:
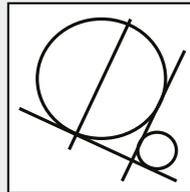
- A. Set A
- B. Set B
- C. Neither

AR2
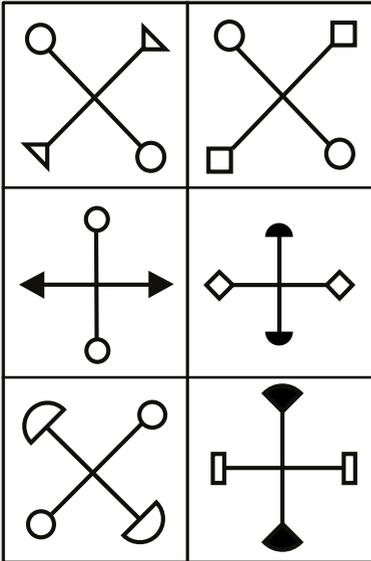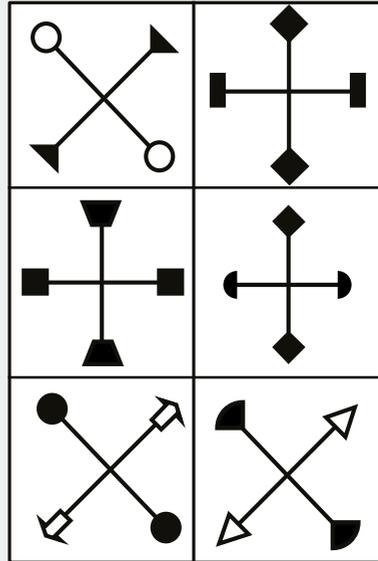
Set A

Set B

AR2-1
Test shape:

- A. Set A
- B. Set B
- C. Neither
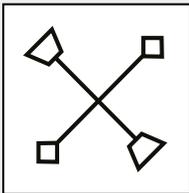
AR2-2
Test shape:

- A. Set A
- B. Set B
- C. Neither

AR2-3
Test shape:
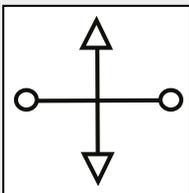
- A. Set A
- B. Set B
- C. Neither

AR2-4
Test shape:
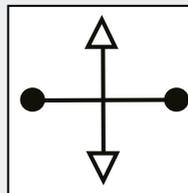
- A. Set A
- B. Set B
- C. Neither

AR2-5
Test shape:
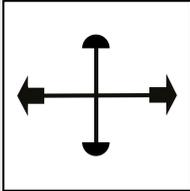
A. Set A
B. Set B
C. Neither

AR2-6
Test shape:
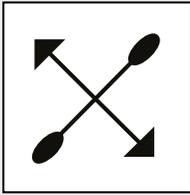
A. Set A
B. Set B
C. Neither

AR2-7
Test shape:

A. Set A
B. Set B
C. Neither

AR2-8
Test shape:

A. Set A
B. Set B
C. Neither

Abstract reasoning was the subtest I found the most challenging at the beginning. It was something completely new to me that I simply couldn't get my head round! But I found doing simpler questions first to build my confidence (and, more importantly, to get an idea of the patterns that constantly came up), before moving onto more difficult questions, was a system that worked for me. The biggest thing you can do to improve is to do practice questions as inevitably you will get better over time.

For each subtest I had a rough idea of how long each question should take. If I was spending too long on a particular question I would force myself to move on as there may be easier marks I could gain towards the end."

Ayaz, 99th percentile

AR3
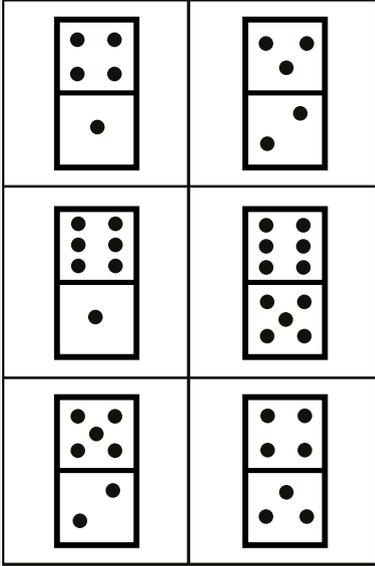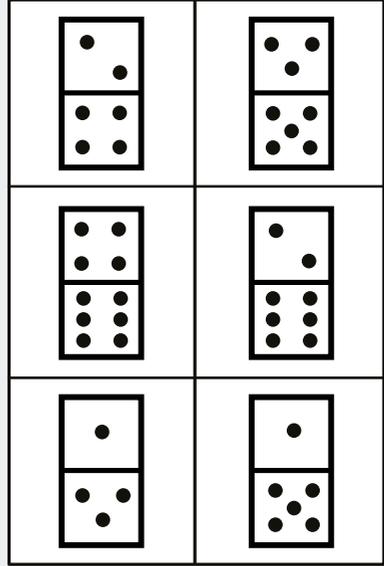
Set A

Set B

AR3-1 Which of the following test shapes belongs in Set A?

- ☐ A.
- ☐ B.
- ☐ C.
- ☐ D.
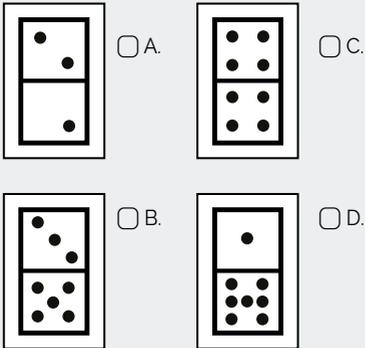
AR3-2 Which of the following test shapes belongs in Set A?

- ☐ A.
- ☐ B.
- ☐ C.
- ☐ D.
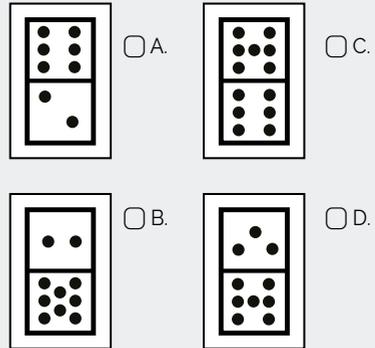
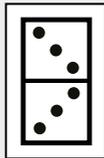**AR3-3** Which of the following test shapes belongs in Set A?
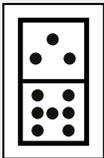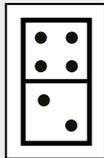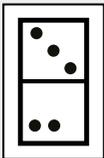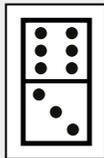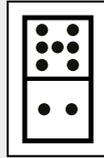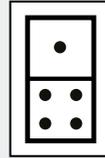

A.

B.

C.
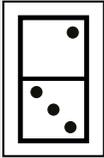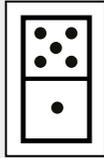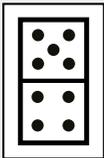
D.

AR3-5 Which of the following test shapes belongs in Set B?

A.

B.

C.

D.

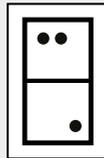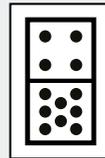**AR3-4** Which of the following test shapes belongs in Set B?
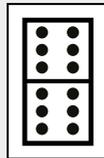

A.

B.

C.

D.

AR3-6 Which of the following test shapes belongs in Set B?

A.

B.

C.

D.
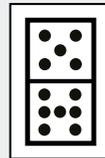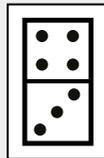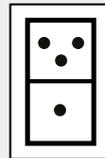
AR4
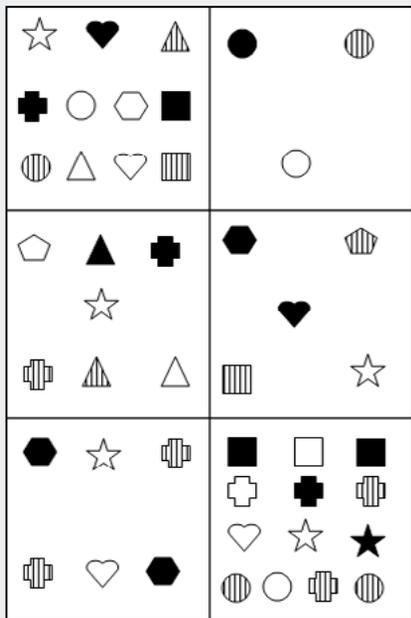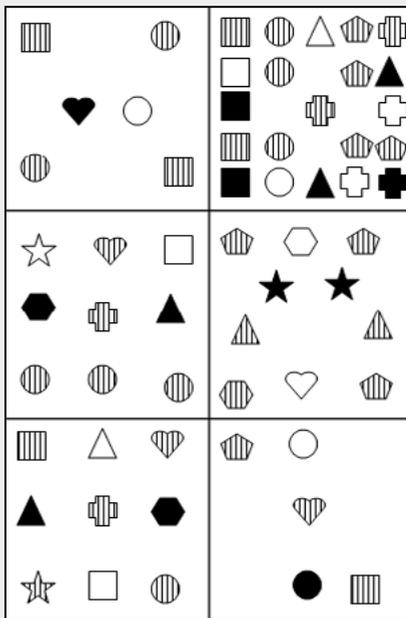
Set A

Set B

AR4-1

Test shape:
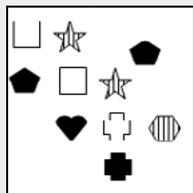
- [ ] A. Set A
- [ ] B. Set B
- [ ] C. Neither

AR4-2

Test shape:
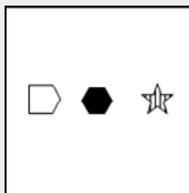
- [ ] A. Set A
- [ ] B. Set B
- [ ] C. Neither

Abstract Reasoning

AR4-3

Test shape:

- A. Set A
- B. Set B
- C. Neither

AR4-4

Test shape:

- A. Set A
- B. Set B
- C. Neither

AR4-5

Test shape:

- A. Set A
- B. Set B
- C. Neither

AR5

Which figure completes the series?

- ⃝ A.
- ⃝ B.
- ⃝ C.
- ⃝ D.

AR6

is to

as

is to

Which figure completes the statement?
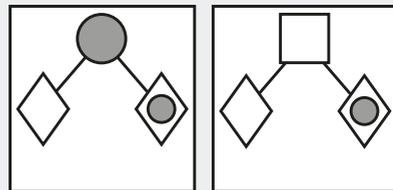
- ⃝ A.
- ⃝ C.
- ⃝ B.
- ⃝ D.
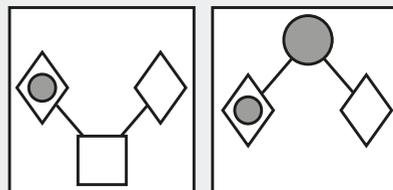
Situational Judgement

SJ1

A medical student, Sehn, has been assigned to work with a consultant, Margaret, on a hospital ward for one week. The purpose of this attachment is for Sehn to gain insight into the work the Margaret undertakes and assist in h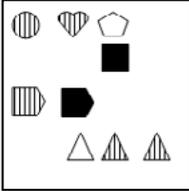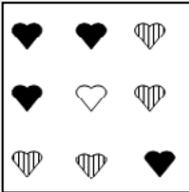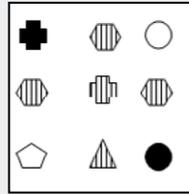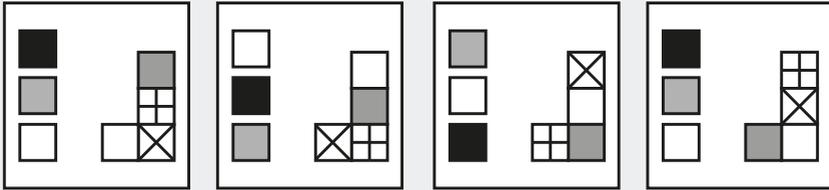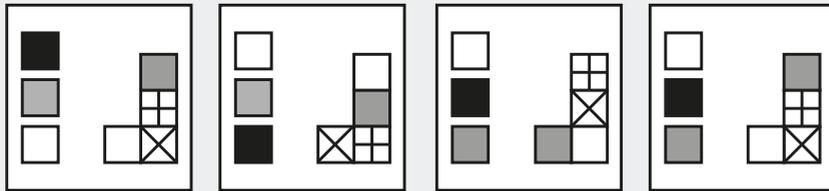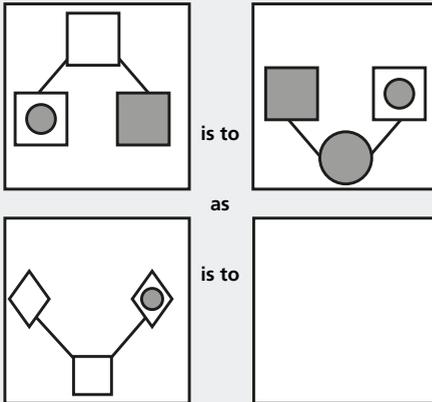is development. At the start of the week, Margaret assigns Sehn personal tasks, which do not appear to be related to Sehn's clinical development. These tasks will take at least two of the five days to complete.

How **appropriate** are each of the following responses by **Sehn** in this situation?

SJ1-1 **Complete the assigned personal tasks for Margaret, without mentioning that they do not seem to be related to his development**
- ☐ A A very appropriate thing to do
- ☐ B Appropriate, but not ideal
- ☐ C Inappropriate, but not awful
- ☐ D A very inappropriate thing to do

SJ1-2 **Suggest to Margaret examples of more clinical tasks that he could get involved with during the attachment**
- ☐ A A very appropriate thing to do
- ☐ B Appropriate, but not ideal
- ☐ C Inappropriate, but not awful
- ☐ D A very inappropriate thing to do

SJ1-3 **Seek advice from the academic tutor responsible for the learning attachment**
- ☐ A A very appropriate thing to do
- ☐ B Appropriate, but not ideal
- ☐ C Inappropriate, but not awful
- ☐ D A very inappropriate thing to do

SJ2

A medical student, Gemma, is observing a patient consultation conducted by Dr Mitchell. Dr Mitchell is updating the patient's medical records on the computer. He asks the patient whether he is allergic to penicillin, to which the patient replies Yes. However, Gemma notices that Dr Mitchell types No as the response to this question on the computer record.

How **appropriate** are each of the following responses by **Gemma** in this situation?

SJ2-1 **Inform Dr Mitchell once the patient has left the room that he appears to have made an error with the computer record**
- ☐ A A very appropriate thing to do
- ☐ B Appropriate, but not ideal
- ☐ C Inappropriate, but not awful
- ☐ D A very inappropriate thing to do

SJ2-2 **Change the computer record after Dr Mitchell and the patient have left the room, to avoid Dr Mitchell being embarrassed**
- ☐ A A very appropriate thing to do
- ☐ B Appropriate, but not ideal
- ☐ C Inappropriate, but not awful
- ☐ D A very inappropriate thing to do

SJ2-3 **Ask the patient to repeat his answer to the question**
- ☐ A A very appropriate thing to do
- ☐ B Appropriate, but not ideal
- ☐ C Inappropriate, but not awful
- ☐ D A very inappropriate thing to do

SJ2-4 **Inform the patient privately about the error after the consultation has finished**

- ☐ A A very appropriate thing to do
- ☐ B Appropriate, but not ideal
- ☐ C Inappropriate, but not awful
- ☐ D A very inappropriate thing to do

SJ3

A dental student, Rio, is leading a group of fellow students in a project they have been assigned to work on together. Jerome approaches Rio with a complaint about one of the other students in the group, Elizabeth. Jerome insists that Elizabeth is not dedicating enough time and effort to the group project. Jerome explains that Elizabeth leaves meetings early and her notes are not very comprehensive when she is asked to research topics. He asks if Rio can do something about this as he is leader of the group.

How **appropriate** are each of the following responses by **Rio** in this situation?

SJ3-1 **Take no action unless further complaints are received from other members of the group**

- ☐ A A very appropriate thing to do
- ☐ B Appropriate, but not ideal
- ☐ C Inappropriate, but not awful
- ☐ D A very inappropriate thing to do

SJ3-2 **Suggest to Jerome that he raises his concerns with Elizabeth directly**

- ☐ A A very appropriate thing to do
- ☐ B Appropriate, but not ideal
- ☐ C Inappropriate, but not awful
- ☐ D A very inappropriate thing to do

SJ3-3 **Report Elizabeth's lack of dedication to the academic tutor**

- ☐ A A very appropriate thing to do
- ☐ B Appropriate, but not ideal
- ☐ C Inappropriate, but not awful
- ☐ D A very inappropriate thing to do

SJ3-4 **Ask other members of the project group whether they have similar concerns about Elizabeth's behaviour**

- ☐ A A very appropriate thing to do
- ☐ B Appropriate, but not ideal
- ☐ C Inappropriate, but not awful
- ☐ D A very inappropriate thing to do

SJ3-5 **Speak to Elizabeth directly to raise concerns about the time and effort she is dedicating to the group project**

- ☐ A A very appropriate thing to do
- ☐ B Appropriate, but not ideal
- ☐ C Inappropriate, but not awful
- ☐ D A very inappropriate thing to do

SJ4

A medical student is due to attend an appointment with her supervisor. One hour prior to the meeting, an opportunity to attend a clinical session becomes available at short notice. The student knows this session would be of value to her learning and development, however it will clash with her appointment with her supervisor.

How **important** to take into consideration are the following factors for the **student** when considering how to respond to the situation?

SJ4-1 **The importance of the meeting with the supervisor**
- [ ] A Very important
- [ ] B Important
- [ ] C Of minor importance
- [ ] D Not important at all

SJ4-2 **Whether the supervisor is contactable to be able to re-arrange the meeting**
- [ ] A Very important
- [ ] B Important
- [ ] C Of minor importance
- [ ] D Not important at all

SJ4-3 **That other clinical sessions may arise in future that will be of value to her development**
- [ ] A Very important
- [ ] B Important
- [ ] C Of minor importance
- [ ] D Not important at all

SJ4-4 **Her supervisor's view on whether this clinical session would be a valuable learning opportunity**
- [ ] A Very important
- [ ] B Important
- [ ] C Of minor importance
- [ ] D Not important at all

SJ5

A medical student, Cameron, is told by a patient that a consultant frequently swears loudly on the ward which makes him feel so uncomfortable that he does not want to stay in hospital. Cameron consults a nurse on the ward and she tells him that she has not ever witnessed this behaviour by the consultant. The nurse reminds Cameron that the patient might just dislike being in hospital. Cameron is unsure what to do because the consultant is marking one of his assessments..

How **important** to take into account are the following considerations for **Cameron** when deciding how to respond to the situation?

SJ5-1 **The consultant is marking one of his assessments**
- [ ] A Very important
- [ ] B Important
- [ ] C Of minor importance
- [ ] D Not important at all

SJ5-2 **A patient on the ward has told him that he feels so uncomfortable that he wants to leave**
- [ ] A Very important
- [ ] B Important
- [ ] C Of minor importance
- [ ] D Not important at all

SJ5-3 **Other patients may have overheard the consultant swearing loudly on the ward and also feel uncomfortable**
- [ ] A Very important
- [ ] B Important
- [ ] C Of minor importance
- [ ] D Not important at all

SJ5-4 **The nurse has not witnessed the consultant swearing loudly on the ward**
- [ ] A Very important
- [ ] B Important
- [ ] C Of minor importance
- [ ] D Not important at all

SJ6

A consultation is taking place between a consultant and a patient; a medical student is observing. The consultant tells the patient that he requires some blood tests to rule out a terminal disease. The consultant is called away urgently, leaving the medical student alone with the patient. The patient tells the student that he is worried he is going to die and asks the student what the blood tests will show.

How **appropriate** are each of the following responses by the **medical student** in this situation?

SJ6-1 **Explain to the patient that he is unable to comment on what the tests will show as he is a medical student**

- A   A very appropriate thing to do
- B   Appropriate, but not ideal
- C   Inappropriate, but not awful
- D   A very inappropriate thing to do

SJ6-2 **Acknowledge the patient's concerns and ask whether he would like them to be raised with the consultant**

- A   A very appropriate thing to do
- B   Appropriate, but not ideal
- C   Inappropriate, but not awful
- D   A very inappropriate thing to do

SJ6-3 **Suggest to the patient that he poses these questions to the consultant when he returns**

- A   A very appropriate thing to do
- B   Appropriate, but not ideal
- C   Inappropriate, but not awful
- D   A very inappropriate thing to do

SJ6-4 **Tell the patient that he should not worry and that it is unlikely that he will die**

- A   A very appropriate thing to do
- B   Appropriate, but not ideal
- C   Inappropriate, but not awful
- D   A very inappropriate thing to do

Rationales and Answers to Practice Questions

Verbal Reasoning – VR1 The Teleological Argument

VR1-1 Correct answer: D
Dawkins has used Paley's analogy to suggest that the maker of his watch could not be blind, otherwise the making of the watch would be too difficult or impossible, and also that natural selection is blind in the sense that it does not operate towards a final goal.

VR1-2 Correct answer: A
This is supported by the passage in the first paragraph, the teleological argument has been commonly used to prove the existence of a Creator or Supreme Being.

VR1-3 Correct answer: B
This is supported by the passage in the theory of Charles Darwin: ...theory of natural selection as an explanation for the variety and complexity of living organisms. This did not presuppose a hidden designer. Therefore events are not planned, they occur by chance.

VR1-4 Correct answer: C
This is supported by the passage using Paley's attempt to provide a scientific explanation of a designed world using Newton's Law of Motion but failing to justify it fully when Darwin and Dawkins published books on evolution and natural selection.

VR1-5 Correct answer: A
An analogy is a form of reasoning using familiarity in which one thing is referred to as another thing, on the basis that the other thing is of similar structure. Paley's story of the construction of a watch on the basis that it is very similar to the way the universe is constructed is a classic example of analogy.

VR1-6 Correct answer: B
This is supported by Paley's argument in the first paragraph: He pointed to the intricate structure of living things and argued that they were so cleverly put together that some unknown designer must have made them. Using this information, it can be inferred that the similar structure means they have a similar purpose, so that the eye may take pictures like a camera.

Verbal Reasoning – VR2 The 1737 Licensing Act

VR2-1 Correct answer: B
This is supported in paragraph 1: 'In 1660 drama was legalised once more. It also goes on to say that the censorship of plays was a result of Royal Sponsorship, suggesting the King of 1660 was a supporter of Theatre.

VR2-2 Correct answer: C
This is supported by paragraph 1 which refers to 2 theatres in London in 1660 but no comment about number of London theatres in 1737 (paragraphs 2-3).

VR2-3 Correct answer: D
This is supported by paragraph 4: After 1788 magistrates could authorise local theatres. Many new provincial theatres were built but London theatres were still restricted to two.

VR2-4 Correct answer: A
In 1660 the king controlled criticism by sponsorship of theatres (paragraph 1) but in the 1730s the government found it necessary to take legislative and punitive action to reduce/control criticism (paragraph 2). No indication is given of why the king sponsored theatres in paragraph 1 other than control.

VR2-5 Correct answer: A

This is supported by the last paragraph which states that there was no longer a limit of having theatres solely in London.

VR2-6 Correct answer: D

This is supported by the passage in paragraph two, Owners, seeking increased profits wanted more socially diverse audiences i.e. not the upper class/a range of people.

VR2-7 Correct answer: C.

This is supported by the passage in paragraph two where it states that the play offensively mocked King George's personal habits. None of the other response options are is cited in this passage as a feature of this play.

VR2-8 Correct answer: B

This is supported by the passage in paragraph two, Many dramatists, leading up to the late 1730s criticised the government and royal family.

Verbal Reasoning – VR3 Exchange Rates

VR3-1 Correct answer: True

If the exchange rates change so the overseas purchaser can buy more pounds for their currency than previously, then it will be true that exports from the UK will cost less in the country buying them in currency terms.

VR3-2 Correct answer: False

Fluctuations do occur in the exchange rate between the pound (£) and the euro, so (as in the example in para 4) a person in France or Germany will be affected by fluctuation in exchange rates between the two currencies.

VR3-3 Correct answer: Can't Tell

We have no idea whether interest rates in the UK or Australia will remain unchanged or how the exchange rates between the UK £ and Australian $ have fluctuated or will fluctuate, nor does the passage tell us anything about the tax rates in the two countries so we cannot tell whether the statement is true or false.

VR3-4 Correct answer: Can't Tell

Prices can differ greatly in different countries and the passage says nothing about purchasing power.

VR3-5 Correct answer: True

The more oil or chemicals the UK purchases from overseas, the greater will be its demand for foreign currency, so the supply of pounds in the foreign exchange markets will rise unless balanced by more demand from overseas for UK pounds.

VR3-6 Correct answer: False

As para 2 makes clear, when a saver makes a deposit in a bank, this technically means the money is being borrowed – not lent - by the bank.

VR3-7 Correct answer: False

No, the importing country would have to sell £100 million–worth of pounds to buy other currencies but the countries to which it is exporting goods will need to buy £200 million-worth of pounds to pay for the goods, so it is the overall demand for pounds – not supply – which will rise.

VR3-8   Correct answer: False
The statement is incorrect because there is a possibility that the holiday may cost the traveller more than anticipated if the exchange rate for the Russian rouble rises and therefore the traveller needs to exchange more pounds to pay for the holiday.

Verbal Reasoning –
VR4 Rule of War

VR4-1   Correct answer: C
The first paragraph states that they protect civilians caught up in the zone of war.

VR4-2   Correct answer: A
First line states that Humans have fought each other since the dawn of civilisation and 3rd line states aggression may be a part of human nature so it is fair to assume that this will always continue to be the case.

VR4-3   Correct answer: B
The bombing and intimidation (paragraph 2) goes against the Geneva Conventions' purpose to protect civilians caught up in the zone of war potentially making it an international crime.

VR4-4   Correct answer: A
It is logical that far distant operators may not be as accurate in their control of the armed drone aircraft and cause injury to civilians.

VR4-5   Correct answer: D
The last sentence states The use of drones has raised ethical questions for their operators. Therefore, if questions have been raised for their operators then there must have been some consequences that spurred those questions.

Verbal Reasoning –
VR5 Greener Jet Engines

VR5-1   Answer: Can't Tell.
There is no information in the passage that suggests the EU will consider exemption for airlines from the Emissions Trading Scheme.

VR5-2   Answer: False.
This is supported by the first paragraph statement: 'There are two areas of potential fuel saving in aircraft design – the engines and the airframe. The ratio of lightweight materials and recycled components in wing and body production is growing'.

VR5-3   Answer: True.
This is inferred by the majority of the information in the third paragraph, particularly in the final sentence which states that the geared turbofan creates 'a 15% improvement in fuel efficiency and a smaller, lighter housing.'

VR5-4   Answer: False.
This is inferred by the first paragraph statement 'An estimated 3% of Europe's entire greenhouse gas emissions are currently generated by airlines, and with it potentially doubling by 2020…' suggesting it could rise to 6% of emissions.

Verbal Reasoning –
VR6 Arctic Foxes

VR6-1   Answer: C.
This is supported by the information presented in the whole passage. Since rodents are a food source for foxes, it is common sense that when there are more rodents, there will be more foxes as their reproduction is dependent on food availability.

VR6-2   Answer: D.
The passage does not indicate that the animal population numbers in general are cyclic. On the contrary, the passage refers to the estimated numbers of foxes as fluctuated.

VR6-3   Answer: A.
In the third and fourth paragraph, the passage made a link between the decline in the number of foxes in 1996 and the low number of reindeer carcasses in 1995/6. It can, thus, be inferred that the low number of reindeer carcasses in 1995/6, which are an important source of food for foxes, led to the starvation of foxes which consequently declined in number.

VR6-4   Answer: C.
The passage does not state that Polar bears have declined after 1973. On the contrary, the Polar bears after 1973 became protected species, therefore one would expect that there will be fewer carcasses left by trappers. Therefore, this option cannot be one of the reasons for the decline in observed foxes. As Polar bears became a protected species then there will be fewer trappers probably not reporting their experiences.

Decision making

DM1   Correct answer: A
From left to right, the teachers are sitting in this order: Miss Zenzer, Mr Warlock, Miss Trollope, Ms O'Rourke, Mr None, Mr Percival, Mr Stephen, and Mr Rowley.

DM2   Correct answer: C
Rex has his morning walk with another dog so this cannot be Barker or Dainty as they have to walk alone. Boxer goes for an afternoon walk so there must be one other dog that is Rex's companion on his morning walk = at least five dogs.

Not A as Boxer has to walk alone. Not B as Boxer has an afternoon walk. Not D as the minimum number of walks would be 5: 1 x Barker, 2 x Dainty, 1 x Boxer and 1 x Rex (with another dog).

DM3   Correct answer: B
Each child picked the following gift: Alec = Pram and doll set; Betty = Roller blades; Carole = Chemistry set; Daniel = Teddy bear; Edna = Jigsaw puzzle.

DM4   Correct answer: B
Suppose W is telling the truth, and X is lying, then Y and Z are telling the truth. X is therefore the only one who must be lying.

W cannot be lying as X or Y would also be lying. Y cannot be lying as W would also be lying. Z cannot be lying as X would also be lying.

DM5   Correct answer: C
The Manager must be I as we know H is a Doctor and J and K own cars that is not owned by the Manager. K and J could be the Teacher but they could equally be the Lecturer. K cannot be the Manager as they own an electric car and the Manager has a scooter.

DM6   Correct answer: B

B is the strongest argument that deals with the outcome of rehabilitation. The other options are a matter of opinion.

DM7   Correct answer: A

A is the strongest argument that considers the impact of the Government's action to those wearing the uniform (all the students). The other options considers only a subset of those affected.

DM8   Correct answer: B

B is the strongest argument that deals with the aim to improve road safety (accident rate). The other options are a matter of opinion.

DM9   Correct answer: D

D is the strongest argument that deals with the consequence of the courses being cut. The other options are matter of opinion.

DM10   Correct answer: B

Letter M is the only letter that represents boxing, athletics and swimming. Letter G represents tennis and swimming. Letter P represents line-dancing and swimming. Letter R represents tennis, gymnastics and boxing.

DM11   Correct answer: C

The letter 'A' is placed within the shapes that represent 'married', 'males' and 'in education'.

DM12   Correct answer: C

The number of customers who did canoeing either solely or with another activity is 24 (4 + 12 + 8). 13 people did all three activities so in total 37 customers took part in canoeing.

DM13   Correct answer: B

All four diagrams have a large circle to indicate attendance at the tea dance. A

separate oval is used to represent those who danced the quickstep but took no further part in the dance. Three overlapping shapes are necessary to show the remaining couples' dance variations. Only the diagram in option B represents those couples who danced the samba, foxtrot and the waltz.

DM14   Correct answer: C

In total 8 people went to exactly two countries (4 people went to France and Spain, 3 people went to Spain and Greece, 1 person went to France and Greece). The same amount of people went to France as went to Spain (15) so A cannot be correct. 5 of the 15 people who went to Spain also went to Greece so B cannot be correct. 23 people only went to one country so D cannot be correct.

DM15   Correct answer: A

A separate oval is used to represent the 9 people who played darts but no other activity. 6 people played no game so this number needs to be outside the ovals. Overlap between ovals is needed for the 4 people who played table tennis and snooker. Only the diagram in option A reflects this.

DM16   Correct answer: A

In total, 38 people (29 + 9) like reading and/or watching television. It is not known if there is any overlap in those who enjoy reading and watching television so the range of people must be 10 (48 – 38) and 19 (48 – 29).

DM17   Correct answer: A

The first bus and the train have been on time 40/50 and 40/50 times respectively (80/100). The probability calculation is 0.8 X 0.8 = 0.64, so it is more likely than not that Martin will get home on time.

DM18   Correct answer: D
The chance of selecting a harmonica at first is 1/2 as there are an even number of harmonicas and drums (30 in total). After 9 gifts have been selected, there are 21 left in the sack (10 harmonicas and 11 drums). The chance of selecting a harmonica is 10/21 which is lower than the original chance of 1/2 so the correct answer is 'No'.

DM19   Correct answer: C
Sarah and Simon collectively had 150 throws whereas Paul had 160 throws – Paul's estimate is therefore more reliable. The other options are statistically incorrect.

Quantitative Reasoning – QR1 Buying Leaflets

QR1-1   The correct answer is D: £324.
Calculation required: 450 x £0.60 x 1.20

QR1-2   The correct answer is A: £216
Calculation required:
200 × (£0.30 + £0.60) × 1.20

QR1-3   The correct answer is B: £234
Calculation required:
(150 × £.40 + 225 × £0.60) × 1.20

QR1-4   The correct answer is C: 32.7%.
Calculation required:
(100 × £0.80) × 1.20 / (300 × £0.55 + 100 × £0.80) × 1.20) ×100

QR1-5   The correct answer is A: 30.
Calculation required:
12 ÷ 0.2 = 60   60 ÷ 2

QR1-6   The correct answer is E: 725.
Calculation required:
174 ÷ 1.2 = 145 145 ÷ 0.2

Quantitative Reasoning – QR2 Taste

QR2-1   The correct answer is C: 57.2%.
Calculation required:
35 + 72 + 20 + 60 = 187
35 + 72 = 107 (107÷187) ×100 = 57.2%

QR2-2   The correct answer is B: 41.1%
Calculation required:

$100 - \frac{63}{35+72} \times 100 = 41.1\%$

QR2-3   The correct answer is B: 39:27
Calculation required: 78:54 = 39:27
60 ÷ 10 = 6, 72 + 6 = 78, 60 - 6 = 54

QR2-4   The correct answer is E: 59,980.
Calculation required:
$\frac{35}{55} \times 25,000 + \frac{72}{132} \times 25,000 + \frac{18}{28} \times 25,000 + \frac{27}{47} \times 25,000$

= 59,980

QR2-5   The correct answer is D: 50%.
Calculation required: 74 – x + 60 – x + 8 + x
= 100, x = 42, 32 + 1

Quantitative Reasoning – QR3 Balloon Flights

QR3-1   The correct answer is A: 5.3.
Calculation required: 24 – (1.8 × 5.2) / 0.5
= 24 – 18.72

QR3-2   The correct answer is B: 3.8 km.
Calculation required: 24 –15 = 39, 39 ÷ 5.2 = 7.5, 7.5 × 0.5

QR3-3   The correct answer is D: 15.
Calculation required: 24 ÷ 2.8 = 8.57. 8.57 × 500 = 4285, 4285 ÷ 4.8 = 892 seconds

QR3-4   The correct answer is D: 27ºC.
Calculation required: Height reached = 5 × 60 × 4.8 = 1440m, Temp change = (1440 ÷ 500) × 5.2 = 14.976, 14.976 + 12

QR3-5   The correct answer is C:
The second balloon took 80% of the time that the first balloon did. Calculation required: $\frac{100}{125} \times 100 = 80$

QR3-6   The correct answer is D:
16.13°F. Calculation Required: If 0˚C at 0 metres = (0 x 1.8) + 32 = 32°F at 0 metres, then -2.8˚C at 500 metres = -(2.8 x 1.8) + 32 = 26.96˚F at 500 metres.
The rate of decrease of temperature is therefore: 32˚F - 26.96˚F = 5.04˚F per 500 metres.
Conversion to ˚F per mile: 1600/500 = 3.2. 5.04 x 3.2 = 16.13˚F per mile.

Quantitative Reasoning – QR4 Concrete

QR4-1   Correct answer is E: Rough.
Calculation required: $\frac{4}{13} \times 100$ = 30.8%.

QR4-2   Correct answer is B: 1.54m³.
Calculation required:
9 × 4 × 0.15 = 5.4, $5.4 \times \frac{2}{7}$

QR4-3   Correct answer is A: 1:3.
Calculation required:
2240:1680 × 4 = 2240:6720

QR4-4   Correct answer is C: 399.
Calculation required:
$\frac{2}{11} \times 3.5 = 0.636$, 0.636 × 2240 = 1425, 1425 ÷ 25 × 7

QR4-5   Correct answer is B: 9%.
Calculation required:
2 × 2240 + 2 × 1600 + 3 × 1680 = 12720, 4480 ÷ 25 × 7 = 1254.4 litres

Total mass = 13974.4 kg $\frac{1254.4}{13974.4} \times 100$

QR4-6   Correct answer is D: 1:1.59.
Calculation required: 25 ÷ 2240 = 0.01116..
m³ 7 litres = 0.007m³, 0.007:0.01116

Quantitative Reasoning – QR5 Motorboats

QR5-1   Answer: B.
Deposit for Type D motorboat on Sundays = 95 + 5 × 95/100 = 95 + 4.75 = £99.75.

Total cost of renting a Type D motorboat for 6 hours on a Sunday = Deposit + Cost per hour × number of hours = £99.75 + £100 × 6 = £99.75 + £600 = £699.75.

QR5-2   Answer: C.
Total cost of renting a Type C motorboat for x hours = Deposit + Cost per hour × number of hours = £100 + £75x

Or, £325 = £100 + £75x
Or, £75x = £325 - £100 = £225
Or, x = 225/75 = 3.

QR5-3   Answer: B.
Total cost of renting a Type E motorboat for 1 hour = Deposit + Cost per hour × 1

Deposit = £100
240 = 100 + Cost per hour of Type E motorboat
Or, Cost per hour of Type E motorboat = 240 – 100 = £140
Cost per hour of Type C motorboat = £75
Required ratio = £75: £140 = 15:28.

QR5-4   Answer: C.
Total cost of renting a Type A motorboat for 3 hours = Deposit + Cost per hour × number of hours

For a Type A motorboat, if the deposit is x, then 135 = x + 2 × 25
Or, 135 = x + 50
Or, x = 135 − 50 = £85
Therefore, Total cost of renting a Type A motorboat for 3 hours on Monday = 85 + 3 × 25 = £160
Total cost of renting a Type C motorboat for 2 hours on Tuesday = 100 + 75 × 2 = £250
Percentage increase in Alan's total cost from Monday to Tuesday = (£250 - £160) × 100/£160 = 56.25%.

Abstract Reasoning – AR1

Rules
Set A
There are two circles each with two tangents. Other shapes are irrelevant

Set B
There is one circle with two lines transecting it. Other shapes are irrelevant.

AR1-1   Correct answer: Neither
Only one circle has two tangents so not A, one circle only has one line transecting it so not B. Therefore neither.

AR1-2   Correct answer: Neither
Two circles but only with one tangent each so not A, one circle only has one line transecting it so not B. Therefore neither.

AR1-3   Correct answer: Neither
One circle with one tangent so not A, one circle only has one line transecting it so not B. Therefore neither.

AR1-4   Correct answer: A
Two circles with two tangents so A.

AR1-5   Correct answer: A
Two circles with two tangents so A.

AR1-6   Correct answer: A
Two circles with two tangents so A.

AR1-7   Correct answer: B
One circle with two lines transecting it so B

AR1-8   Correct answer: B
One circle with two lines transecting it so B

AR1-9   Correct answer: B
One circle with two lines transecting it so B

AR1-10   Correct answer: A
Two circles with two tangents to A.

Abstract Reasoning – AR2

Rules
Set A
There are 2 pairs of shapes.

If the shapes are unshaded then the pairs are in an ×. If one pair is shaded then the pairs are in a +

Set B
There are 2 pairs of shapes.

If the shapes are all shaded then the pairs are in a +. If one pair is shaded then the pairs are in an ×

AR2-1   Correct answer: A
2 pairs of shapes, all unshaded, in an ×

AR2-2   Correct answer: N
2 pairs of shapes, all unshaded, in a +

AR2-3   Correct answer: B
2 pairs of shapes, one pair shaded, in an ×

AR2-4   Correct answer: A
2 pairs of shapes, one pair shaded, in a +

AR2-5   Correct answer: B
2 pairs of shapes, both pairs shaded, in a +

AR2-6   Correct answer: N
2 pairs of shapes, both pairs shaded, in an ×

AR2-7   Correct answer: B
2 pairs of shapes, one pair shaded, in an ×

AR2-8   Correct answer: N
2 pairs of shapes - but one pair shaded on non opposite arms of the ×

Abstract Reasoning – AR3

Rules
Set A
Total number of spots is an ODD number, and larger number of spots is above.

Set B
Total number of spots is an EVEN number, and larger number of spots is below.

AR3-1   Correct answer: A
A is correct. Total number of spots = 3. Larger number of spots (2) is above.

AR3-2   Correct answer: C
C is correct. Total number of spots = 13. Larger number of spots (7) is above.

AR3-3   Correct answer: B
B is correct. Total number of spots = 9. Larger number of spots (5) is above.

AR3-4   Correct answer: A
A is correct. Total number of spots = 10. Larger number of spots (7) is below.

AR3-5   Correct Answer: D
D is correct. Total number of spots = 12. Larger number of spots (8) is below.

AR3-6   Correct answer: C
C is correct. Total number of spots = 12. Larger number of spots (7) is below.

Abstract Reasoning – AR4

Rules
Set A Rule
Regardless of the nature of the shapes themselves there must be an equal number of black and shaded shapes but the combined total is always at least one more than the total number of white shapes

Set B Rule
Regardless of the nature of the shapes themselves there must be an equal number of black and white shapes but the combined total is always at least one fewer than the total number of shaded shapes.

AR4-1   Answer Neither
More black shapes than either white or shaded so cannot be either.

AR4-2   Answer A
One black and one white but only one shaded so cannot satisfy B. One shaded and one black (= 2 shapes) which is one more than the white shape so must be A.

AR4-3   Answer B
2 black and 2 white (= 4 shapes) and 5 shaded shapes so must be B.

AR4-4   Answer A
Equal number of black and shaded (=4) but only 1 white so must be A.

AR4-5   Answer B
2 black and 2 white (= 4) and 5 shaded so must be B.

Abstract Reasoning - AR5

Correct answer: D

The shading of the column has the sequence: black, shaded, white; white, black, shaded; shaded, white, black and then repeats. The shading of the L shape from the top has the sequence: shaded, cross, diagonal cross, white. In each square, the box at the end of the L shape moves to the top box and the shading sequence continues.

So, the next square should have the column shading as white, black, shaded. The L shape should be in the order of shaded, cross, diagonal cross, white.

Abstract Reasoning - AR6

Correct answer: D

The single shape changes to the opposite side of the box (top to bottom) and changes to the small shape that is inside another shape (square to circle). The two shapes attached to the lines swap from left to right.

So, the square at the bottom should move to the top and become a circle. The two kite shapes should swap, with the circle inside the kite being on the left.

Situational Judgement - SJ1
SJ1-1   Correct answer: C
This response isn't the most appropriate – it shows a lack of insight by Sehn about his understanding of the placement, and offers no solution to the problem. This course of action does not have severe consequences.

SJ1-2   Correct answer: B
Although this is an appropriate course of action, it does not deal with the fact that Sehn is still being asked to carry out personal tasks.

SJ1-3   Correct answer: A
This is the most appropriate course of action, given that Margaret was unlikely to have assigned Sehn to the placement. The academic tutor has overall responsibility for work-based placements and, as the administrator, they should be made aware of the problem.

Situational Judgement - SJ2
SJ2-1   Correct answer: A
This is a sensitive issue, but one that must be corrected at the first opportunity. To correct Dr Mitchell immediately in front of the patient may serve to undermine their trust in his professional skills. Waiting until the patient has left (assuming no treatment is due to be carried out, or drugs prescribed) is the best course of action. Dr Mitchell will then need to re-confirm with the patient at the next available opportunity.

SJ2-2   Correct answer: D
This is an inappropriate course of action that is not consistent with open and honest practice. Altering notes in this way is ground for gross professional misconduct.

SJ2-3   Correct answer: B
This is a reasonable course of action, and may serve to clarify the patient's response. However, it may also affect the patient/doctor relationship and so waiting to discuss it with Dr Mitchell afterwards is preferable.

SJ2-4   Correct answer: D
This is an inappropriate course of action. Without seeking further clarification from Dr Mitchell, Gemma is not making an informed judgement, and this may be detrimental to the doctor/patient relationship.

Situational Judgement - SJ3
SJ3-1   Correct answer: C
This option is inappropriate – it discredits Jerome's observation. This course of action does not have severe consequences.

SJ3-2   Correct answer: B
This is an appropriate course of action, although Rio, as the group leader, should be managing the situation.

SJ3-3   Correct answer: C
This option is inappropriate, as Rio should be managing the situation and this matter does not, at this stage, involve the academic tutor. No attempt has been made at resolution. This course of action does not have severe consequences.

SJ3-4   Correct answer: A
This would be entirely appropriate, in order to gather a consensus opinion about Elizabeth's behaviour. Part of working as a team is the ability to share concerns.

SJ3-5   Correct answer: A
This would also be entirely appropriate, as the concern should be raised with all individuals concerned. There should be opportunity for those individuals to defend any such allegations and to improve performance, where necessary. These options will result in local resolution before the matter needs to be taken further.

Situational Judgement - SJ4
SJ4-1   Correct answer: A
Assuming that the student is able to contact her supervisor to re-arrange, the importance of the meeting is very worthy of consideration. This could be a meeting about compromised patient care, for example.

SJ4-2   Correct answer: A
In order to act professionally, the student should ensure open and timely communication with her supervisor. To not consider whether or not she can contact the supervisor to re-arrange would be considered poor practice.

SJ4-3   Correct answer: A
It may be that there is no need to re-arrange her pre-existing meeting if clinical availability is likely to present itself again. This is about forward planning, time-management and maintaining existing commitments.

SJ4-4   Correct answer: B
The student must accept responsibility for developing her own professional development. Given that she has already identified that this session would be of value to her learning and development, the opinion of the supervisor becomes less (but still) important.

Situational Judgement - SJ5

SJ5-1 Correct answer: D

Although there may be apparent consequences for raising an issue with the consultant, the overriding consideration should be that of the patient. Assessments should be marked professionally and objectively – this is not an important consideration.

SJ5-2 Correct answer: A

The patient's safety and wellbeing should be the main concern at all times.

SJ5-3 Correct answer: B

This may be true, and may be important when deciding how to respond. However, it is based on an assumption and so is not a very important consideration.

SJ5-4 Correct answer: B

This may be true and so it is important to take it into account, however, as Cameron has received a direct complaint from a patient, this should be followed up regardless of who can support or refute it.

Situational Judgement - SJ6

SJ6-1 Correct answer: B

The General Medical Council requires students to work "…within the limits of their competence, training and status as medical students." A medical student is not qualified to discuss the possible outcomes of the patient's blood test nor what the future may hold for the patient. However, it is correct for a student to explain his role to the patient, so that the patient understands the student's position. In this situation, where a patient is concerned or worried about their health, the medical student should acknowledge the patient's concerns and advise the patient to address their concerns with a more appropriate member of staff.

SJ6-2 Correct answer: A

On any occasion that a patient is concerned or worried about their health, this should be acknowledged by any person involved with their care. Although the medical student is not yet qualified to address the patient's concerns directly, by acknowledging them and giving the patient the option to raise them with the consultant, the student is assuring the patient that he is being listened to and that his concerns are being taken seriously.

SJ6-3 Correct answer: B

The consultant has overall responsibility for the care of the patient and in this case would be the most appropriate member of staff to address the patient's concerns directly. However, ideally the student should also indicate that they empathise with the patient about their concerns.

SJ6-4 Correct answer: D

The General Medical Council requires students to work "…within the limits of their competence, training and status as medical students." A medical student is not qualified to discuss the possible outcomes of the patient's blood test nor what the future may hold for the patient. By telling the patient not to worry, the student is inappropriately (and perhaps falsely) reassuring the patient. A student should acknowledge the patient's concern and indicate that they empathise with the patient about their concerns.

Notes

Notes

Notes

Step-by-step guide

You may find this step-by-step guide helpful in planning for your test.

Check

- [ ] Which universities require the test and their entry criteria
- [ ] The location of your nearest test centres
- [ ] If you require Access Arrangements or specific test accommodations, check to see whether we can meet these
- [ ] Whether you are eligible for a Concession fee and then apply by 5pm AEST on 4 May 2020
- [ ] That you have one of the correct forms of ID required to sit your test

Book

- [ ] You need to book your test before booking closes on 11 May 2020 at 11.59pm AEST
- [ ] If you miss the booking deadline, ensure to book by the late booking deadline of 11.59pm AEST on 18 May 2020.
- [ ] We recommend you book as early as possible to ensure your choice of date and test centre

Prepare

- [ ] Use the UCAT Practice Tests and Resources in this guide to help you prepare for the test
- [ ] Use the Practice Tests and Resources on the UCAT ANZ website for definitive information and advice about the test plus hundreds of official practice questions
- [ ] Familiarise yourself with the onscreen format so you know how to use the mouse, answer questions and move through the test. Practise using the onscreen calculator and get used to the timings of each section
- [ ] Find out what to expect at a Pearson VUE Test Centre
- [ ] Read the statement on unprofessional behaviour and our Professional Examination Rules
- [ ] Familiarise yourself with what to do if something goes wrong either before or during your test

UCAT UNIVERSITY CLINICAL APTITUDE TEST **ANZ**

Test

- [ ] Ensure you take the correct, original, unexpired ID with you to the test centre
- [ ] Make sure you know where your test centre is and allow yourself plenty of time for arrival
- [ ] Take your test between 1 July and 31 July 2020 – no exceptions!
- [ ] In the unlikely event of any issues during your test, you must report this to the test centre immediately and follow up with Pearson VUE Customer Services within 1 business day of your test date.

Research

- [ ] Check the information provided on consortium member websites to see how each university uses the test in their admissions process before you submit your university applications
- [ ] Final scores and test statistics will be published after the end of testing
- [ ] Use all of this information to make an informed decision about where to apply

Apply

- [ ] Don't forget your university applications should be submitted by the deadlines indicated on the individual university websites

Relax

- [ ] We will communicate your test result directly to our UCAT ANZ Consortium universities, you do not need to take any action

"The UCAT is not something to be feared, it's just one more step in achieving your goal of getting into medical / dental school. The key is preparation - make full use of the resources available on the UCAT website and otherwise.

One last bit of advice, don't fret about the test and postpone it, get it over and done with as early as possible."

Amir-Seena, 96th percentile

My UCAT 2020 Preparation Plan

TOP TIP

Our highest scoring candidates said they spent 25-30 hours preparing for the test and that it's better to build up your preparation by doing just an hour or so each day.

TOP TIP

Get familiar with the 'Flag' and 'Review' functions within the test which can help you manage your time and practise using the on-screen calculator too.

+6 weeks to go

Visit the **UCAT ANZ website** or read our **Official Guide** to find out the key information you need to know

4 weeks to go

Use the **Interactive Question Tutorial** to guide you through each subtest and learn strategies on how to approach and answer questions

Use the Tour Tutorial to understand the format of the UCAT and learn the functions of the computer-based test

Use our FREE question banks to practise hundreds of example questions

TOP TIP

Challenge yourself by reading newspapers or articles to improve your speed reading and critical reasoning skills which will help with Verbal Reasoning.

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3 weeks to go

Check out advice from high scoring candidates on our website and on the **Official UCAT YouTube channel**

Take Practice Test A on the UCAT ANZ website; these tests closely mimic the test experience and questions are of equivalent standard to the actual test

Download the Official UCAT App to practise some additional questions in your spare time

Take Practice Tests B & C – step up your practice by sitting the timed versions to improve your speed as you get closer to sitting your test

Feedback

Please let us have any feedback you might have on this publication so we can improve it for future years.

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