

UCAT Preparation Course

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Section 2

Decision Making

Introduction:

The Decision Making (DM) section is the second of four cognitive subtests in UCAT, following Verbal Reasoning. This section evaluates your ability to apply logic and reason to complex information, making sound judgments and decisions based on data presented in various formats. Unlike Verbal Reasoning, which focuses on reading comprehension, Decision Making assesses your capacity to interpret data, evaluate arguments, and draw logical conclusions from information that may be presented visually, textually, or in combination.

The core task is to analyse information—often presented as text, tables, charts, or diagrams—and determine which conclusions can be logically drawn or which courses of action are most appropriate. This subtest does not require external subject knowledge; all answers must be based solely on the information provided, using logical reasoning rather than prior knowledge. The skill being assessed is clinical reasoning and decision-making capacity under time pressure, simulating the cognitive demands of medical and dental practice where professionals must quickly interpret complex data and make evidence-based decisions.

Format and Timing

The Decision Making section is a timed, multiple-choice assessment with the following structure, based on the official UCAT specifications:

Feature	Detail
Total Time for Section	37 minutes
Instruction Screen Time	1 minute 30 seconds (timed separately)
Number of Questions	35 questions
Scoring	Each question is worth 1 mark, except for questions that require assigning “yes”/”no” to multiple statements. These are worth 2 points, and you can get a partial score of 1 point for a mostly correct answer. The final scaled score ranges from 300 to 900.

The time pressure in this section is substantial, with candidates having an average of approximately 66 seconds per question. However, question complexity varies significantly—some logic puzzles may take over 2 minutes, while others can be answered in 30 seconds. Effective time management is therefore critical, particularly as this section contains some of the most time-consuming questions in the entire UCAT.

Question Types

1. Syllogisms

You are presented with a series of statements (premises) and must determine which conclusion logically follows from them. These questions test formal logic and reasoning ability.

Key features:

You are presented with an unfinished sentence and must select the option that completes it most logically and accurately. Focus carefully on the specific subject of the stem, locate the relevant part of the passage, and predict your own completion before examining the options. The correct answer must fit both grammatically and conceptually with the stem's precise focus.

Example structure:

These ask for information explicitly or near-explicitly stated in the text. Correct answers are almost always paraphrases using synonyms rather than identical wording. Scan for key concepts, read the surrounding context fully, and select the option that restates the passage's meaning in a different language.

2. Logical Puzzles

These present a scenario with multiple conditions or constraints, and you must determine which arrangement or outcome is logically possible or necessary.

Key features:

- Often involve ordering, scheduling, or grouping
- Use systematic elimination
- Draw a diagram or table to track information
- Identify fixed constraints first (e.g., "A must be before B")
- Consider all possibilities before selecting an answer

Key Strategies:

- Create a visual representation of the information
- Note which elements are fixed and which are variable
- Work through constraints methodically
- Check your answer against all given conditions

3. Recognising Assumptions

These questions are also commonly referred to as Strongest Argument or Evaluating Arguments questions. They test your ability to identify unstated premises that must be true for

an argument's conclusion to hold

Key features:

- You are presented with a proposal, problem, or debate, typically phrased as a yes/no question
- This is followed by four arguments, either supporting or opposing the proposal
- Your task is to select the strongest argument—the one that most directly addresses the core issue
- An assumption is an unstated piece of information that must be true for the argument to work
- You must suspend your own beliefs and rely only on the information provided

Key Strategies:

- Read the question carefully and pick out the key words or phrases
- Identify the conclusion and find the gap between the premises and the conclusion
- Use the negation test: if you negate the assumption and the argument collapses, it is a necessary assumption
- Eliminate extreme options (e.g., those using "all" or "never" when not warranted)
- Avoid partially relevant options that miss the main point
- The correct answer will be the statement that addresses all key topics in the question

4. Interpreting Information

You are presented with data in various formats (tables, graphs, charts, written passages) and must draw conclusions or make predictions based on that information.

Key features:

- Pay attention to scales, axes, and units in graphs
- Distinguish between correlation and causation
- Look for trends, outliers, and significant differences
- Consider whether the data supports or refutes a given statement

Key Strategies:

- Read all labels and axes carefully
- Calculate percentages or differences where relevant
- Check whether comparisons are valid
- Consider whether the data sample is representative

5. Venn Diagrams

You are presented with a Venn diagram showing relationships between groups, and must

determine which statements about the groups are true or false.

Key features:

- Understand the meaning of each section of the diagram
- Regions represent specific combinations of membership
- Statements may test your understanding of intersection, union, and complement
- "Some" means "at least one" in logic contexts

Key Strategies:

- Label each distinct region of the diagram
- Translate statements into region-based language
- Remember that "some" can mean "all" in formal logic
- Check whether a statement is necessarily true or merely possible

6. Probability and Statistics

You are presented with data about probabilities, risks, or outcomes and must determine the likelihood of events or the validity of statistical claims.

Key features:

- Work with fractions, percentages, and proportions
- Understand basic probability concepts
- Distinguish between absolute and relative risk
- Recognise when sample sizes are too small for meaningful conclusions

Key Strategies:

- Convert all information to the same format (e.g., all percentages)
- Remember that probability ranges from 0 to 1 (or 0% to 100%)
- Consider whether events are independent or dependent
- Look for information that is missing or insufficient

Why Decision Making is Tested

The abilities assessed in this section are deemed essential for future doctors and dentists. Strong decision-making skills are crucial for:

- Clinical diagnosis: Interpreting symptoms, test results, and patient history to reach accurate diagnoses
- Treatment planning: Weighing risks and benefits of different treatment options
- Resource management: Making efficient use of limited resources in healthcare settings
- Critical thinking: Evaluating research claims and medical evidence
- Patient safety: Making sound judgments under pressure to avoid errors

The section tests your ability to process information logically, evaluate evidence, and make reasoned decisions—all core competencies in clinical practice where decisions often have significant consequences.

Instructions:

1. Time pressure

The Decision Making section is 37 minutes for 35 questions, giving an average of 63 seconds per question. However, question difficulty varies significantly. When first practising, don't worry about timing—focus on understanding question types. Then progress to timed practice using UCAT official materials. **How to deal with this?**

A. Identify question types quickly

Different question types require different approaches. Recognising a syllogism versus a probability question at a glance allows you to apply the appropriate strategy immediately.

B. Use your whiteboard effectively

Decision Making benefits enormously from visual thinking. Draw Venn diagrams, tables, or simple sketches to organise information. This may take a few seconds but saves significant time by clarifying complex relationships.

C. Know when to move on

Some questions are inherently more time-consuming than others. If you've spent over 2 minutes on a question without making progress, make an educated guess, flag it, and move on. Return to it only if time permits.

D. Start with the question first

For interpreting information questions, read what you're being asked before analysing the data. This tells you which parts of a graph or table are relevant and prevents wasted effort on unnecessary information.

E. Use elimination strategically

Even when you can't immediately see the correct answer, you can often eliminate 1-2 clearly incorrect options. This improves your odds if you need to guess.

G. Guessing when time is low

When only seconds remain, make an educated guess rather than leaving the question blank.

Eliminate obviously wrong answers first, then select from remaining options. The UCAT does not penalise incorrect answers, so always answer every question.

2. Psychological Anchor

A. Keeping calm

Remember that all candidates find this section challenging—your goal is not perfection but to perform better than the average candidate. Stay calm, work systematically, and trust your preparation.

B. Don't let one question derail you

Decision Making sections often begin with difficult questions, but the following questions may be easier. Avoid:

- Panicking after a challenging start
- Spending disproportionate time on early questions
- Allowing difficulty to affect your confidence on subsequent questions

C. Trust your first instinct

The pressure of the UCAT can make you second-guess yourself. However:

- First instincts are often correct, especially in logic questions
- Each minute you spend doubting is a minute you could spend on other questions
- If you've answered logically, move forward confidently
- Reserve second-guessing for flagged questions at the end

Sample Questions

1. Syllogisms

Question 1

Statement 1: All consultants are doctors.

Statement 2: Some doctors are surgeons.

Statement 3: No surgeons are radiologists.

Which one of the following conclusions logically follows?

- A. All consultants are surgeons.
 - B. Some consultants are radiologists.
 - C. Some doctors are not radiologists.
 - D. All radiologists are consultants.
 - E. No consultants are surgeons.
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Question 2

Statement 1: Every member of the chess club is a student.

Statement 2: Some students are members of the drama society.

Statement 3: No members of the drama society are members of the chess club.

Which one of the following conclusions logically follows?

- A. All students are members of the chess club.
- B. Some students are not members of the drama society.
- C. No students are members of the chess club.
- D. Some members of the chess club are members of the drama society.
- E. All members of the drama society are students.

Answers:

Q1: Some doctors are surgeons, and no surgeons are radiologists. Therefore, at least some doctors (the surgeons) are not radiologists. **Answer C.**

Q2: Some students are drama society members, but no drama society members are chess club members. Therefore, those students who are drama society members are not chess club members, meaning some students are not chess club members. However, the conclusion "some students are not members of the drama society" is the only one that must be true (since some students are members of the chess club, and those are not drama members). **Answer B.**

2. Logical Puzzles

Question 3

Five friends—Alex, Ben, Carla, Dana, and Ethan—are sitting in a row of five seats, numbered 1 to 5 from left to right. The following conditions apply:

- Alex sits immediately next to Ben.
- Carla sits somewhere to the left of Dana.
- Ethan does not sit in seat 1 or seat 3.
- Ben sits in seat 2.

Which one of the following must be true?

- A. Alex sits in seat 1.
 - B. Carla sits in seat 1.
 - C. Dana sits in seat 5.
 - D. Ethan sits in an odd-numbered seat.
 - E. Carla sits in an odd-numbered seat.
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Question 4

A delivery driver must visit six houses—House A, B, C, D, E, and F—in a single route. The following constraints apply:

- House A must be visited before House B.
- House C must be visited immediately after House D.
- House E cannot be visited first or last.
- House F must be visited before House C.

Which one of the following is a possible order for the delivery route?

- A. F, D, C, A, E, B
- B. A, F, D, C, B, E
- C. D, C, F, A, E, B
- D. A, B, F, D, C, E
- E. F, A, E, D, B, C

Answers:

Q3: E

Q4: E

3. Recognising Assumptions

Question 5

Proposal: "The government should ban all single-use plastics to reduce ocean pollution."

Which of the following is the strongest argument in support of this proposal?

- A. Many countries have already banned single-use plastics and seen positive results.
 - B. Single-use plastics are convenient for consumers and businesses.
 - C. The ban would create jobs in the reusable packaging industry.
 - D. Plastics in the ocean harm marine life and enter the human food chain.
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Question 6

Proposal: "All hospitals should introduce 24-hour on-site mental health support for staff."

Which of the following is the strongest argument against this proposal?

- A. Staff would be more likely to take sick leave if mental health support is available.
- B. The cost of providing 24-hour on-site support would be prohibitive for many hospitals.
- C. Mental health issues are a personal matter and should not be addressed at work.
- D. Some staff may not feel comfortable using on-site services.

Answers:**Q5: Answer D**

The proposal specifically links the ban to reducing ocean pollution. **Option D** directly addresses this by explaining how plastics cause ocean pollution (harming marine life and entering the food chain). Option A is relevant but weaker—it references other countries without explaining why the ban would work. Option C is about jobs, not pollution. Option B actually opposes the proposal

Q6: Answer B

The proposal is about 24-hour on-site support. **Option B** directly addresses the core practical barrier—cost—making it the strongest counter-argument. Option A makes an unsupported assumption about staff behaviour. Option C is an opinion, not a logical argument. Option D is partially relevant but weaker than the practical cost concern

4. Interpreting Information & Drawing Conclusions

Question 7

A study tracked 1,000 adults over 10 years to investigate the relationship between daily physical activity and the development of type 2 diabetes. The results are shown in the table below:

Daily Activity Level	Number of Participants	Developed Diabetes	Did Not Develop Diabetes
Low	400	80	320
Moderate	350	35	315
High	250	10	240

Which one of the following conclusions is best supported by the data?

- A. Moderate activity reduces the risk of diabetes by exactly 50% compared to low activity.
- B. High activity participants are less likely to develop diabetes than moderate activity participants.
- C. Most people who develop diabetes have low activity levels.
- D. Increasing activity levels guarantees protection against diabetes.
- E. Low activity is the cause of diabetes in 80% of cases.

Question 8

A pharmaceutical company conducted a trial to evaluate the effectiveness of three new treatments for Type 2 diabetes. Patients were randomly assigned to receive Treatment A, Treatment B, Treatment C, or a placebo over 12 weeks. The primary outcome measured was the change in HbA1c levels (a marker of average blood glucose). Secondary outcomes included the incidence of adverse effects and patient dropout rates.

Table: Trial Results After 12 Weeks

Treatment	Number of Patients	Mean HbA1c Reduction (%)	Patients Experiencing Adverse Effects (%)	Dropout Rate (%)
Placebo	150	0.8	5	8
Treatment A	148	2.1	12	6
Treatment B	151	2.8	18	11
Treatment C	149	1.9	8	15

Which of the following conclusions can be most reliably drawn from the data?

- A) Treatment B is the most effective option because it produces the greatest HbA1c reduction.
- B) Treatment A is superior to Treatment C because it has a lower adverse effect rate and lower dropout rate.
- C) Treatment C should not be recommended due to its high dropout rate, despite moderate efficacy.
- D) All three treatments show clinical benefit over placebo, but the trade-off between efficacy and side effects varies.

Answers:

Q7: High activity: $10/250 = 4\%$ developed diabetes. Moderate: $35/350 = 10\%$. Low: $80/400 = 20\%$. High activity participants are less likely (4%) than moderate (10%). **Answer B.**

Q8: Answer: D**Reasoning:**

A is incomplete: While Treatment B has the highest efficacy (2.8% reduction), it also has the highest adverse effect rate (18%) and elevated dropout rate (11%). Efficacy alone doesn't make it "most effective" overall.

B is too narrow: This compares only two treatments and ignores that Treatment A has more adverse effects than placebo (12% vs 5%).

C is overreaching: High dropout could reflect tolerability issues, but the passage doesn't provide evidence about why patients dropped out.

D is most reliable: All three treatments show HbA1c reductions above placebo (1.9–2.8% vs 0.8%), but each has different risk-benefit profiles. Treatment A: moderate efficacy/side effects; Treatment B: highest efficacy but most adverse effects; Treatment C: moderate efficacy but highest dropout.

5. Venn Diagrams

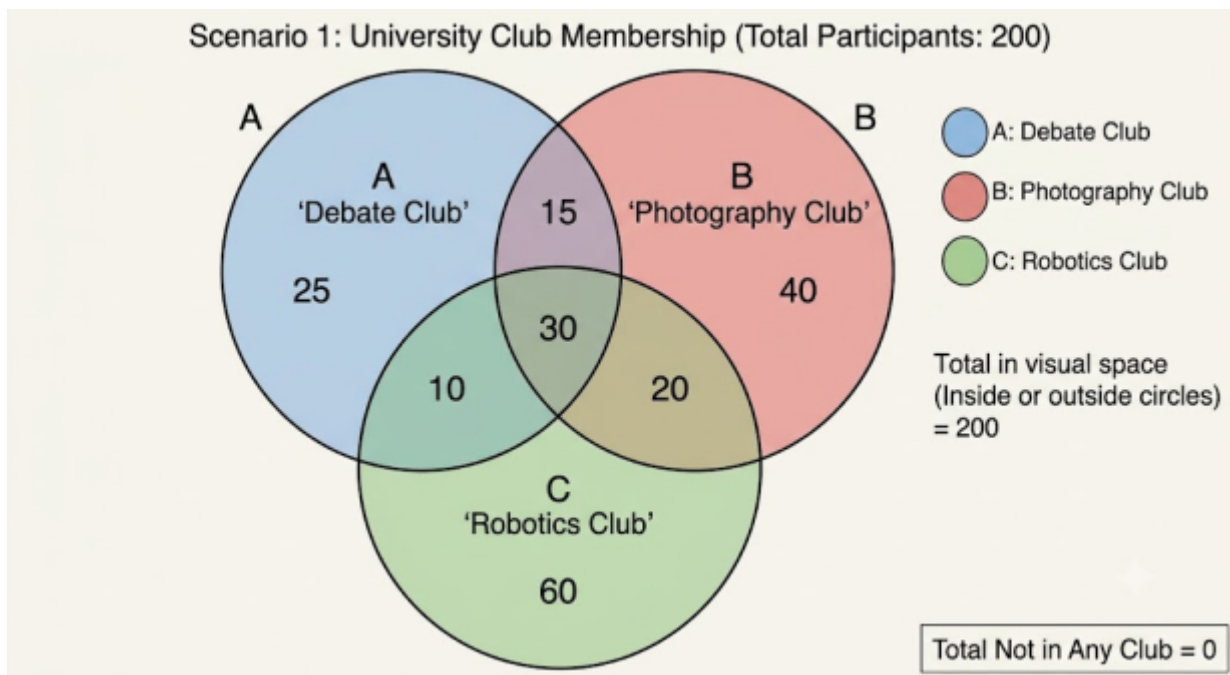
Question 9

This diagram represents the distribution of 200 participants in three different university clubs:

Circle A (Blue): Debate Club

Circle B (Red): Photography Club

Circle C (Green): Robotics Club



How many individuals are members of exactly two clubs?

- A) 15
- B) 30
- C) 45
- D) 75

Question 10

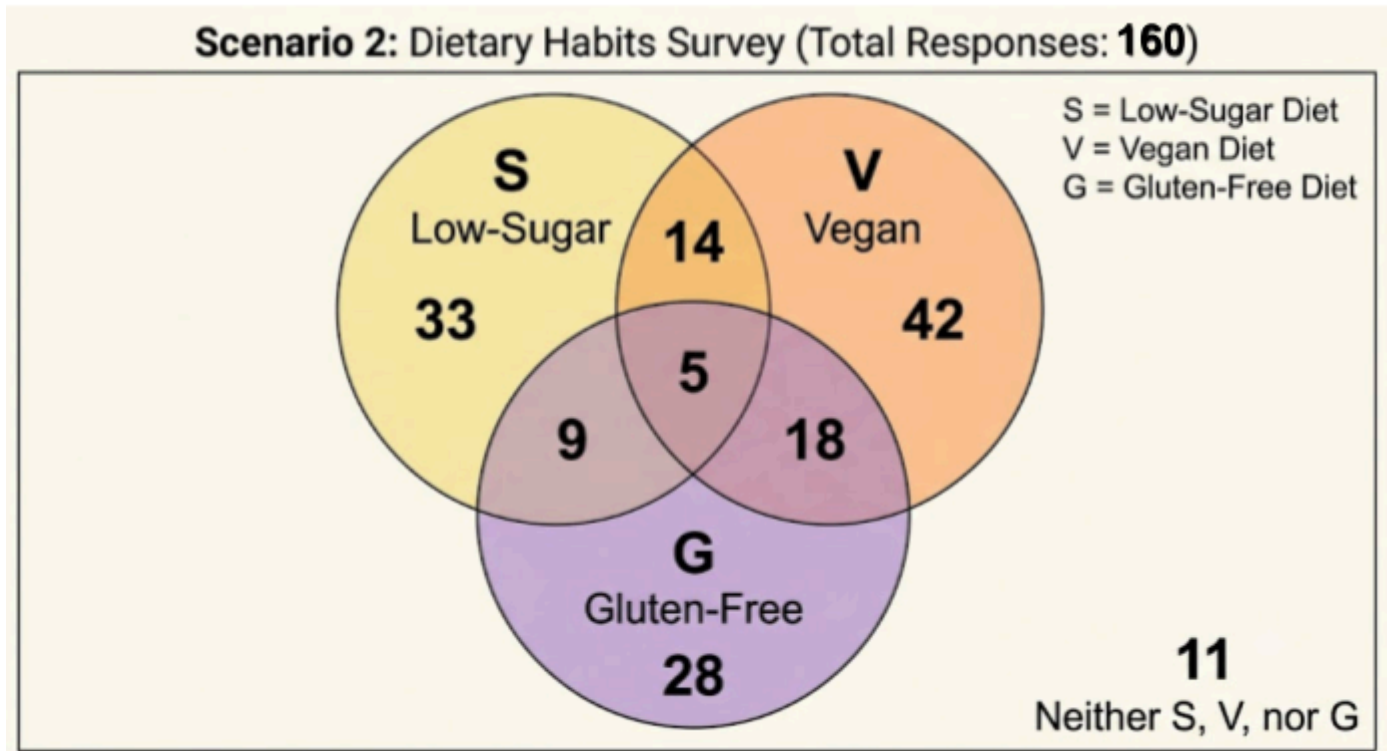
This diagram represents the distribution of 150 dietary surveys collected at a health clinic. Respondents identified their dietary habits:

Circle S (Yellow): Follows a low-sugar diet.

Circle V (Orange): Is Vegan.

Circle G (Purple): Follows a Gluten-Free diet.

Note: In this scenario, 11 respondents indicated they follow none of these three dietary habits.



Based only on the provided diagram, how many respondents are Vegan (V) but are not Gluten-Free (G)?

- A) 42
- B) 56
- C) 61
- D) 79

Answers:**Q9: Answer C.**

To find members of exactly two clubs, we sum the intersection areas of only two circles, excluding the center intersection (which represents all three clubs).

Debate & Photography (A & B only): 15

Debate & Robotics (A & C only): 10

Photography & Robotics (B & C only): 20

Total = $15 + 10 + 20 = 45$.

Q10: Answer: B

The question asks for the total number of respondents within the Vegan circle (V), but excluding any intersection with the Gluten-Free circle (G). This includes:

Respondents who are Vegan only: 42

Respondents who are Vegan and Low-Sugar (but not Gluten-Free): 14

Total = $42 + 14 = 56$.

6. Probabilistic & Statistical Reasoning

Question 11

A bag contains 4 red balls, 3 blue balls, and 5 green balls. Two balls are drawn at random without replacement.

What is the probability that both balls drawn are blue?

- A. $\frac{3}{12}$
 - B. $\frac{3}{11}$
 - C. $\frac{1}{22}$
 - D. $\frac{1}{12}$
 - E. $\frac{1}{4}$
-

Question 12

A medical test for a disease has the following characteristics:

- The disease affects 2% of the population.
- If a person has the disease, the test is positive 95% of the time.
- If a person does not have the disease, the test is negative 90% of the time.

A randomly selected person from the population takes the test and receives a positive result. What is the approximate probability that they actually have the disease?

- A. 95%
- B. 90%
- C. 50%
- D. 16%
- E. 2%

Answers:

Q11:

Probability first blue = $3/12$. Probability second blue (without replacement) = $2/11$. Combined = $3/12 \times 2/11 = 6/132 = 1/22$. **Answer C.**

Q12:

Using Bayes' theorem: $P(\text{disease} \mid \text{positive}) = (0.02 \times 0.95) / [(0.02 \times 0.95) + (0.98 \times 0.10)] = 0.019 / (0.019 + 0.098) = 0.019 / 0.117 \approx 0.162$ or 16%. **Answer D.**