

UCAT Decision Making Practice Paper 1

Decision Making

35 questions · 37 minutes · On-screen calculator allowed

How to use this booklet

- There are 35 questions in this section. Some questions have five answer options (A to E); choose the one best answer.
- Other questions list five statements. For each statement choose Yes or No, as the question directs. Treat every statement separately.
- You have 37 minutes. There is no penalty for incorrect answers, so answer every question. A calculator is allowed.

DECISION MAKING — 35 QUESTIONS

37 minutes

Work through the questions in order, but do not spend too long on any one. For statement questions, mark Yes or No for every statement, then check your work against the worked solutions.

1. The table shows the number of loans of each type of book from four libraries in one month. For each statement, decide whether it is supported by the data in the table.

Library	Fiction	Non-fiction	Children's books
Bayview Library	50	75	150
Northgate Library	155	100	95
Eastside Library	100	90	130
Central Library	170	25	110

- | | Yes | No |
|--|-----------------------|-----------------------|
| 1. Northgate Library had the highest number of loans that were fiction. | ☐ | ☐ |
| 2. At Central Library, the number of loans that were children's books was more than double the number that were fiction. | ☐ | ☐ |
| 3. Fiction made up exactly 38% of all the loans. | ☐ | ☐ |
| 4. Altogether, 465 of the loans were children's books. | ☐ | ☐ |
| 5. Northgate Library had more loans in total than Eastside Library. | ☐ | ☐ |

2. Each of Kai, Xavi, Lena and Max says one sentence. Each person either always tells the truth or always lies. Kai says: "Lena and Xavi are both lying." Xavi says: "Exactly one of Lena and Kai is lying." Lena says: "Xavi is telling the truth." Max says: "Xavi and Lena are both lying." Who is telling the truth?

- A Kai, Lena and Max only
- B Kai only
- C Kai and Max only
- D Lena only
- E Xavi and Lena only

3. Pia, Eli, Cara, Jade and Hana each drink a different one of these: tea, coffee, juice, milk, water. Cara drinks milk, and Eli does not drink juice. Neither Jade nor Cara drink water. Neither Eli nor Jade drink tea. Pia does not drink water. Pia drinks either juice or tea. Hana drinks either water or tea. Neither Eli nor Cara drink coffee. Who drinks coffee?

- A Pia
- B Eli
- C Hana
- D Jade
- E Cara

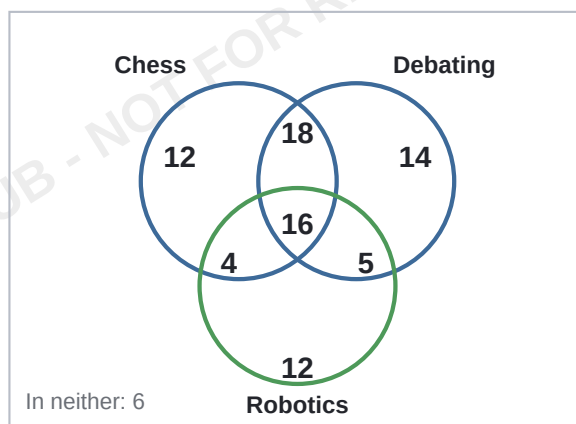
4. There are two independent alarms. In a given period, the first triggers with probability $\frac{3}{10}$ and the second triggers with probability $\frac{1}{6}$, independently of each other. What is the probability that at least one of them triggers?

- A $\frac{7}{12}$
- B $\frac{5}{12}$
- C $\frac{7}{15}$
- D $\frac{11}{30}$
- E $\frac{1}{20}$

5. Premises: Some pilots are runners. All pilots are poets. For each statement, decide whether it logically follows from the premises.

	Yes	No
1. Some pilots are poets.	☐	☐
2. All pilots are runners.	☐	☐
3. Some pilots are not runners.	☐	☐
4. Some runners are poets.	☐	☐
5. Some pilots are not poets.	☐	☐

6. The Venn diagram shows the activities of 87 pupils. Each number is the number of pupils in that region of the diagram. For each statement, decide whether it is correct.



	Yes	No
1. More pupils belong to Robotics club than Debating club.	☐	☐
2. 21 pupils belong to Robotics club but not Debating club.	☐	☐
3. At least half of the pupils belong to Chess club.	☐	☐
4. 9 pupils belong to none of the clubs.	☐	☐
5. More pupils belong to exactly two of the three than all three.	☐	☐

DECISION MAKING — 35 QUESTIONS

Answers & worked solutions

Answer Key

1	NNYNY	2	E	3	D	4	B	5	YNNYN	6	NNYNY
7	E	8	YNNNN	9	NNYYY	10	A	11	C	12	NNYYN
13	YNNYY	14	NNYNY	15	YNNNY	16	NNYYY	17	B	18	NYYNY
19	B	20	NYYNY	21	A	22	YYNN	23	D	24	YNNYN
25	NYYNY	26	YNNYN	27	YNNNY	28	NYYNY	29	C	30	A
31	D	32	YNNNY	33	NYYNY	34	YNNYN	35	C		

For five-statement questions the key lists Y (Yes, the conclusion follows) or N (No) for statements 1 to 5 in order.

1. The table shows the number of loans of each type of book from four libraries in one month. For each statement, decide whether it is supported by the data in the table. [Interpreting information]

Library	Fiction	Non-fiction	Children's books
Bayview Library	50	75	150
Northgate Library	155	100	95
Eastside Library	100	90	130
Central Library	170	25	110

Correct answers: 1 No, 2 No, 3 Yes, 4 No, 5 Yes

- Read the exact figures from the table and calculate what each statement claims before comparing.
- Compare the calculated value with the claim; 'more than' and 'fewer than' statements need the true value on the correct side of the stated figure.
- Statement by statement:
 1. No: the fiction figures are 50, 155, 100, 170, so the highest is 170.
 2. No: 110 compared with double 170, which is 340.
 3. Yes: 475 out of 1250 is 38.0%.
 4. No: adding the four children's books figures gives 485.
 5. Yes: Northgate Library had 350 loans and Eastside Library had 320.

LOS: Interpreting information

KEY TAKEAWAY

Calculate the quantity each statement describes from the table, then check the claim; never judge a percentage or total by eye.