

# uniTEST

## Sample Questions

2019

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# CRITICAL REASONING

## UNIT 1

### Questions 1 – 3

Consider the following passage and answer the questions that follow accordingly.

Humans may have reached northern Europe (including England) 200 000 years earlier than previously thought. Stone tools found in England suggest that early humans were there 700 000 years ago.

The stone tools were discovered at a site in Suffolk. The tools have been dated using several methods. Firstly, the magnetic polarity of iron-containing minerals in the sedimentary rocks where the tools were found is aligned north-south, just as it is today. Since the Earth's magnetic field underwent a polarity reversal 780 000 years ago, the site must be younger than that.

The tools were found beneath glacial ice deposits laid down during a period 450 000 years ago when the region was blanketed in ice, so they must be older than this. Also present at the site were fossils of a water vole *Mimomys*, which was superseded by another vole species called *Arvicola* around 500 000 years ago.

A new amino-acid dating technique gives an estimate of 700 000 years old. The method was used to measure the breakdown of amino acids within shells of a freshwater snail species found with the tools at the site.

- 1 When were humans previously thought to have reached northern Europe?
  - A 450 000 years ago
  - B 500 000 years ago
  - C 700 000 years ago
  - D 900 000 years ago
  
- 2 Without the amino acid evidence, which one of the following is the best estimate of the age of the tools?
  - A 500 000 years old
  - B 700 000 years old
  - C 450 000 to 500 000 years old
  - D 500 000 to 780 000 years old
  
- 3 Of the following, which best indicates the value of the water vole fossils to the dating of the site?
  - A The fossils confirm the date of the glacial deposit.
  - B The fossils suggest that the glacial deposits were 50 000 years older than first thought.
  - C The *Arvicola* fossils indicate that the site is more than 500 000 years old.
  - D The *Mimomys* fossils indicate that the site is more than 500 000 years old.

## UNIT 2

### Questions 4 – 6

Consider the following account adapted from an article in a science magazine.

Rupert Sheldrake crystallised his ideas on telepathy\* in dogs thanks in no small measure to Jaytee, a 10-year-old terrier owned by Pamela Smart, who lives next door to her retired parents in Manchester.

The family had noticed that the dog tended to anticipate Smart's return whenever she left the house. Jaytee would do this by sitting and apparently waiting by a window 10 or more minutes before Smart walked into the house. This was later confirmed in more than 100 experiments with the dog. 5

To Sheldrake, there is no better explanation for Jaytee's behaviour than telepathy between dog and owner. Many psychologists and experts in animal behaviour agree that Sheldrake's observations of Jaytee merit further study. But for them, telepathy is a claim too far. 10

Sheldrake invited Richard Wiseman, a psychologist at the University of Hertfordshire, to replicate experiments with Jaytee. During the experiments, Smart left home and returned when instructed to do so at a random time set by the experimenter.

But Sheldrake and Wiseman disagreed on which of Jaytee's many visits to the window they should use as the signal that the dog was preparing to greet his owner. Was it the first trip he made to the window or the period when he spent the most time at the window? And should the dog have responded at the precise time when Smart was told to go home, when she started off, or when she simply found herself thinking about going home? 15

Wiseman published his findings in the *British Journal of Psychology*, and went to the press claiming to have found no evidence of telepathy. Using the same data, Sheldrake tried to publish the opposite conclusion in the same journal, but failed. 20

\* *telepathy* is the transmission of thoughts between minds without speech or physical signalling

- 4 Which one of the following is the most credible evidence supporting Sheldrake's view that Jaytee exhibited telepathy?
- A Pamela Smart's family said that the dog anticipated her return whenever she left the house.
  - B Sheldrake said that there is no better explanation for Jaytee's behaviour than telepathy between dog and owner.
  - C Many psychologists and experts in animal behaviour agree that Sheldrake's observations of Jaytee merit further study.
  - D In one hundred experiments, the dog was observed to sit by a window 10 or more minutes before Smart walked back into the house.

- 5 Of the following, it is likely that Wiseman could most justifiably argue that Sheldrake's original observations of Jaytee
- A would occur with no other dog.
  - B were completely made up by Sheldrake.
  - C could only be the result of a trick by Smart.
  - D were correct, but the dog behaved quite differently when Wiseman made observations.
  - E were based on selective reporting and interpretation because the dog often went to the window.

- 6 At the conclusion of all the experiments, which one of the following is **least** likely to be a source of disagreement between Sheldrake and Wiseman?

Views about

- A the existence of telepathy.
- B what the dog's behaviour meant.
- C whether telepathy should have been investigated.
- D the standards of the *British Journal of Psychology*.
- E the significance of the dog's behaviour with respect to Smart's behaviour.

## UNIT 3

### Questions 7 – 9

The number statements below are from a debate for and against the topic that:

**Violent TV and videos contribute to real-life violence.**

For each of the questions (7–9) you are to choose the alternative (A – D) that most appropriately describes the relationship of the statement to the topic of the debate.

The statement:

- A** is most likely part of the debate **for** the topic.
- B** is most likely part of the debate **against** the topic.
- C** could possibly be part of the debate **for or against** the topic.
- D** is **not relevant** to either the debate for or against the topic.

7 Violence is never an acceptable course of action.

8 Violent entertainment desensitises viewers.

9 The accessibility and the graphic impact of TV make it an especially powerful medium.

# QUANTITATIVE REASONING

## UNIT 1

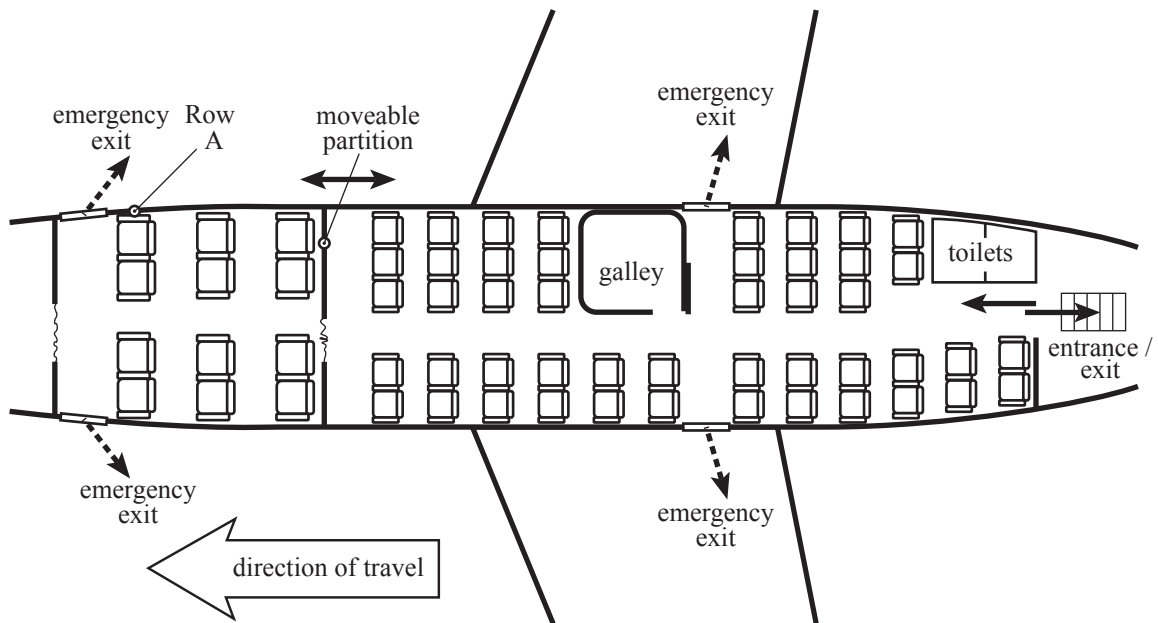
### Questions 1 – 4

GoGreat Airlines has a new class of aircraft, the A-13. The aircraft carries passengers who pay Economy fares, and a smaller number who pay higher Business fares for extra service and comfort. Seat prices vary from flight to flight.

The A-13 has a rear entrance/exit. It has emergency exits over each wing and at the front of the Business section.

The standard layout of seats is shown in the figure.

With this layout, seats in Rows D and J in Economy each have extra legroom. All Business class seats also provide extra legroom.



- 1 How many seats are provided for passengers in Economy?
- A 23
  - B 24
  - C 36
  - D 47

- 2 Suppose that for a particular flight Business is full and the Business passengers pay \$200 per seat. All but four available Economy seats are filled with passengers. Economy passengers pay \$100 per seat.

How much are the total fares from the flight?

- A \$6 500
- B \$6 700
- C \$6 900
- D \$7 100

- 3 In Economy, the armrests between adjacent seats can be raised out of the way, except for the seats with extra legroom.

When a flight is not full, people sometimes like to raise armrests and stretch across three seats to sleep.

How many passengers could sleep this way in Economy in an A-13?

- A 5
- B 7
- C 15
- D 21

- 4 Suppose a light lunch is to be served on an A-13 flight. Two flight attendants each serve lunch at the rate of one meal per one and a half minutes. All Business seats are full, and all but seven Economy seats carry passengers.

How long does it take to serve all the passengers?

- A 26 minutes
- B 35 minutes
- C 39 minutes
- D 41 minutes

## UNIT 2

### Questions 5 – 8

Our solar system is composed of nine\* planets that travel around a star we call the Sun. Figure 1 indicates the relative sizes of the planets and their order from the Sun. Table 1 provides further information about the planets (based on information known around the year 2000).

- An orbit is the path a planet takes as it travels completely around the Sun.
- The length of a year for a planet is the time it takes for the planet to travel once around the Sun.
- The length of a day for a planet is the time it takes to spin around once on its axis.

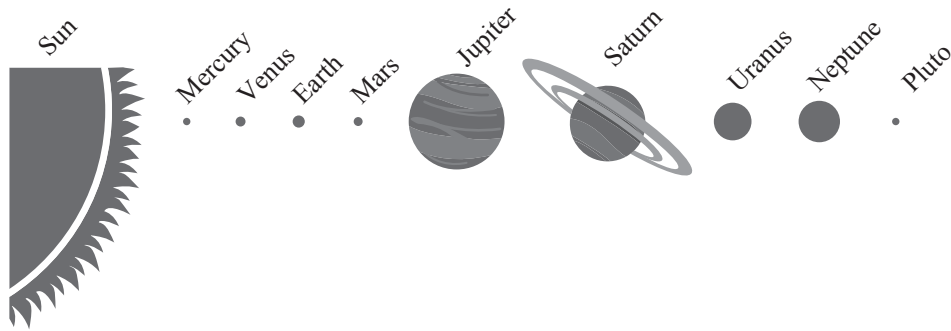


Figure 1

Table 1

Planet	Mean distance from the Sun ( $\times 1,000,000$ km)	Diameter (km)	Number of moons	Mean orbital speed (km/s)	Time to orbit the Sun (Earth years)	Length of day (hours)
Mercury	58	4,880	0	48.0	0.24	1416
Venus	108	12,100	0	35.0	0.62	5832
Earth	150	12,760	1	30.0	1.00	24
Mars	228	6,800	2	24.0	1.88	24.6
Jupiter	778	143,800	16	13.0	11.86	9.84
Saturn	1,427	120,000	18	10.0	29.46	10.23
Uranus	2,870	52,300	15	6.8	84.01	17.24
Neptune	4,497	49,500	8	5.4	164.79	18.4
Pluto	5,900	3,000	1	4.7	247.70	153.4

\* recently Pluto has been downgraded to a minor planet



- 5 Which one of the following statements is best supported by the data?
- A Day length increases as distance from the Sun decreases.
  - B Orbital speed increases as year length decreases.
  - C Diameter increases as orbital speed increases.
  - D Year length decreases as diameter increases.
- 6 Which of the following statements is best supported by the data?
- A Planets further from the Sun travel faster and therefore have shorter days.
  - B Planets closer to the Sun travel faster and therefore have shorter days.
  - C Planets with longer days travel slower and are closer to the Sun.
  - D Day length is unrelated to average orbital speed and distance from the Sun.
- 7 Which of the following is the best estimate of the number of Neptune days that equal ten Earth days?
- A 4
  - B 8
  - C 12
  - D 16
- 8 Which of the following is the best estimate of the number of Saturn days in an Earth year?
- A 1600
  - B 800
  - C 400
  - D 100

### UNIT 3

#### Questions 9 – 11

Dale, a plumber, charges for work done in people's homes as follows:

- \$60.00 to go to the home, which includes a maximum of 15 minutes work; plus
- \$15.00 for any part of each 15 minutes' work after the first 15 minutes.

9 Dale calls at Mrs Acorn's home and does an hour and twenty minutes' work.

His charge will be

- A \$75.00.
- B \$90.00.
- C \$120.00.
- D \$135.00.
- E \$150.00.

#### Questions 10 and 11 relate to the following additional information.

Dale wants to set up a computer program to automate his billing of customers. The illustration opposite (Figure 1) shows the stage he has reached in his planning of the flow chart for the program. There is nothing in the circle marked with an X at this stage.

10 Without an instruction at X, a problem with this program is that it will

- A always charge customers too little.
- B always charge customers too little, except for periods of 15 minutes or less.
- C always charge customers too much, except for periods of 15 minutes or less.
- D only charge customers correctly for periods of time that are exact multiples of 15 minutes.
- E only charge customers correctly for periods of time that are not exact multiples of 15 minutes.

11 Which one of the following instructions at position X would correct Dale's program?

- A subtract \$15.00
- B add \$45.00
- C subtract \$45.00
- D add \$60.00
- E subtract \$60.00

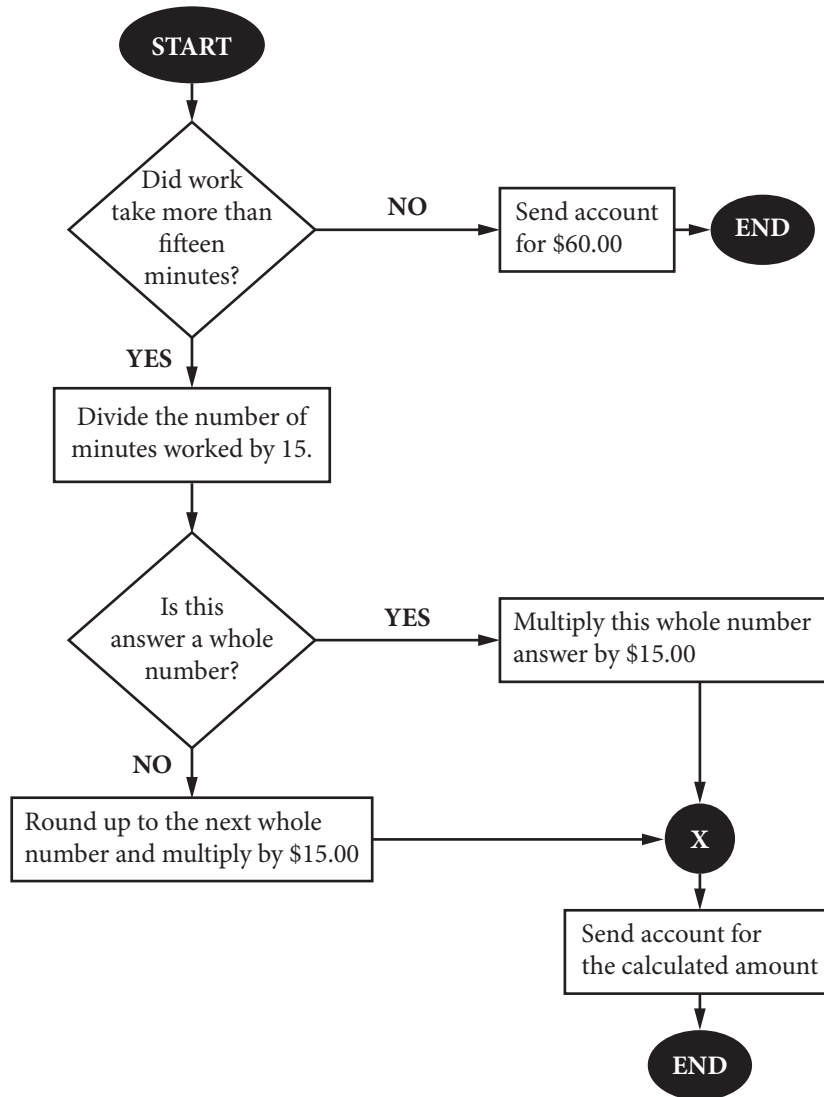


Figure 1

## UNIT 4

### Question 12

Simon is responsible for scheduling the weekly meetings of four sporting clubs at his campus. The meetings are to be held at lunchtimes, Monday to Friday. Each club has one meeting each week.

All the clubs are able to meet in any lunchtime when they do not have training. The clubs train at lunchtime on the following days (Table 1):

**Table 1**

Club	Training days
Netball	Mondays and Wednesdays
Mountaineering	Tuesdays
Triathlon	Mondays and Thursdays
Orienteering	Fridays

- People who join a club **must** attend all training sessions for that club.

12 Simon draws up four possible schedules for the meetings, shown below.

Which one of these schedules does **not** involve a clash with a club's training?

A

	M	Tu	W	Th	F
N					*
M	*				
T				*	
O			*		

D

	M	Tu	W	Th	F
N		*			
M				*	
T			*		
O					*

B

	M	Tu	W	Th	F
N					*
M	*				
T		*			
O			*		

E All four schedules involve a clash.

C

	M	Tu	W	Th	F
N					*
M		*			
T			*		
O	*				

# VERBAL REASONING

## UNIT 1

### Questions 1 – 3

*The composer Ludwig van Beethoven lived from 1770 to 1827. The following passage discusses how his music related to the Classical style of the eighteenth century and the Romantic style of the nineteenth century.*

There is no doubt that Beethoven was attracted to the spiritual ideals of the Romantic movement. But he was a product of the eighteenth century: his achievement lay in taking the elements of the Classical style and resynthesising them, not abandoning them. The Classical style – exemplified by Mozart – was the result of bringing into balance the opposing forces of form and content; the Romantic style came when the content overflowed the form. Melodies became less clearly defined, and harmony lost its structural foundations and took on colour and variety instead. Beethoven was drawn to these new ways, but his nature was such that he needed to mould the raw materials of his composition to achieve the tension that comes from bringing strength under control. He never faltered in his belief that it was the duty of the creative artist to organise his material. It was in such organisation that the form of his compositions lay. This discipline and strength of purpose gives his work its singular authority.

- 1 By saying that Beethoven was a product of the eighteenth century the writer means that
  - A he worked primarily within the Classical tradition.
  - B he was a typical and conventional composer of his era.
  - C in his own time Beethoven's music was regarded as Romantic.
  - D only Beethoven's contemporaries could truly appreciate his genius.
  
- 2 According to the writer, Beethoven believed that composers should
  - A cling faithfully to traditional musical forms.
  - B deliberately control and direct their composition.
  - C display the opposition between form and content.
  - D express their creative impulses without constraint.
  
- 3 In the writer's view, what makes Beethoven's music unique is its
  - A theatricality.
  - B grand vision.
  - C formal anarchy.
  - D regulated power.

## UNIT 2

### Questions 4 – 7

*The following passage describes the experiences of a man who has undergone surgery that has given him vision after a lifetime of blindness.*

One man when shown an orange a week after beginning to see, said that it was gold. When asked, 'What shape is it?' he said, 'Let me touch it and I will tell you!' After doing so, he said that it was an orange. Then he looked long at it and said, 'Yes, I can see that it is round.' Shown next a blue square, he said it was blue and round. A triangle he also described as round. When the angles were pointed out to him he said, 'Ah. Yes, I understand now, one can see how they feel.' For many weeks and months after beginning to see, the person can only with great difficulty distinguish between the simplest shapes, such as a triangle and a square. If you ask him how he does it, he may say, 'Of course if I look carefully I see that there are three sharp turns at the edge of one patch of light, and four on the other.' But he may add peevishly, 'What on earth do you mean by saying that it would be useful to know this? The difference is only very slight and it takes me a long time to work it out. I can do much better with my fingers.' And if you show him the two shapes the next day he will be quite unable to say which is a triangle and a square.

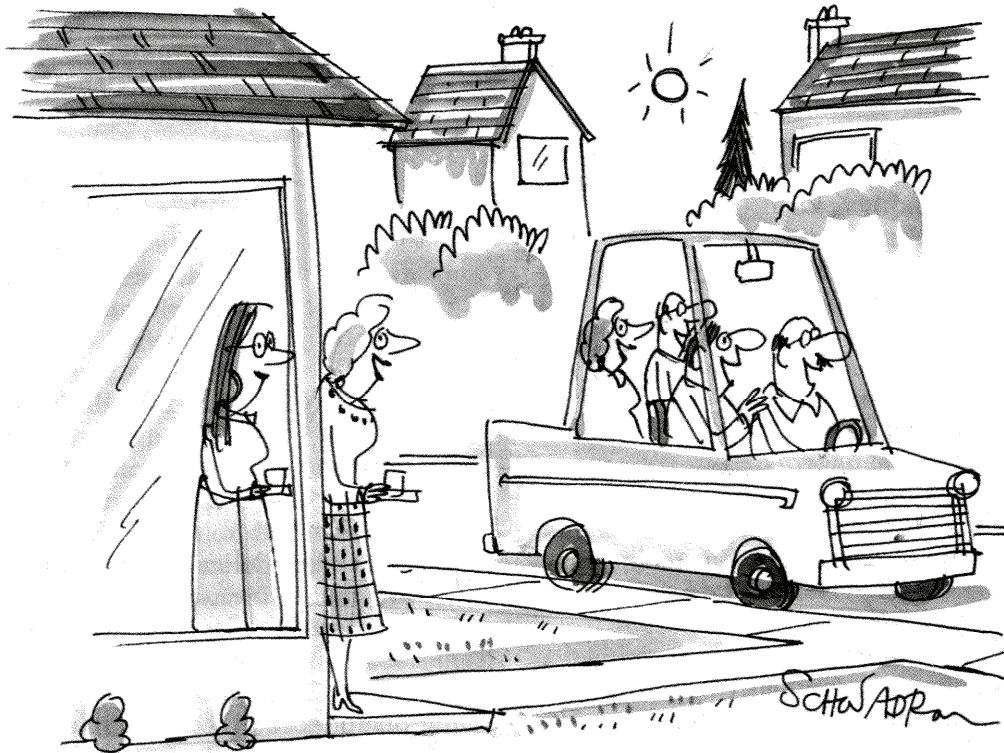
5

10

- 4 One week after beginning to see, the man
- A related shape directly to visual images.
  - B formed visual impressions of shape indirectly.
  - C spontaneously reduced his dependence on his sense of touch.
  - D was developing a visual appreciation of shape through association with colour.
- 5 The man's mistake about the square (line 4) suggests that
- A his eyesight was still impaired.
  - B he could not make full use of visual clues.
  - C the idea of shape was meaningless for him.
  - D colour makes shape perception more difficult.
- 6 The passage suggests that the man refers to the shapes as 'one patch of light' (line 9) because
- A he does not know the names of shapes.
  - B he does not associate visual images with shapes.
  - C he wants to be precise in order to make his reasoning clear.
  - D he wants to choose wording which will convey the difficulty of his task.
- 7 The passage presents shape perception as generally dependent on
- A experience.
  - B keen eyesight.
  - C inherited skills.
  - D colour perception.

## UNIT 3

### Questions 8 and 9



*"They all work in their own homes now, but they still get together for car pool reunions."*

- 8 The cartoon is a comment on
- A corporate loyalty.
  - B the value of teamwork.
  - C the social implications of a casualised workforce.
  - D the social implications of a decentralised workforce.
- 9 The cartoon suggests that current work practices are
- A quaint.
  - B congenial.
  - C unsatisfying.
  - D unproductive.

<b>Critical Reasoning</b>	<b>Quantitative Reasoning</b>	<b>Verbal Reasoning</b>
1 B	1 D	1 A
2 D	2 B	2 B
3 D	3 A	3 D
4 D	4 C	4 B
5 E	5 B	5 B
6 C	6 D	6 B
7 D	7 C	7 A
8 A	8 B	8 D
9 A	9 D	9 C
	10 B	
	11 B	
	12 B	

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**Acknowledgments** — [www.cartoonstock.com](http://www.cartoonstock.com) for the ‘Car pool’ cartoon from *Doubt and Certainty in Science: A Biologist’s Reflections on the Brain* by John Z. Young, 1951. Reproduced by permission of Oxford University Press; MacDonalds Educational Ltd for the extract (adapted) from the *Book of Music*, edited by G. Rowley, 1977; Renaud, S. for the extract from *The French Paradox*, proceedings from the Wolf Blass Foundation International Wine and Health Conference, Ed C.S. Stockley, The Wolf Blass Foundation Inc, 1996.