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GATE

6

Academic Selective Entrance Test (ASET)

Sample Paper

QUANTITATIVE REASONING

YEAR 6

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE ASKED TO DO SO

INSTRUCTIONS

Write your response in your answer booklet.

- Make sure the question number matches the answer you are writing.
- Do not spend too long on one question. You can return to difficult questions later.
- Use a lead (graphite) pencil.
- There is no penalty for wrong answers, so make your best effort.
- To change an answer, erase it completely before writing a new one.
- Keep working until you finish or the supervisor asks you to stop.
- You may write in this booklet for rough work, but final answers must be in the answer booklet.
- Do not turn the page until you are told to begin.

WRITE YOUR FULL NAME TO CONFIRM THAT YOU HAVE READ THE INSTRUCTIONS HERE:

.....

Prepared by Champion Tutors. This is a practice paper, not an official GATE paper, and may differ from the actual GATE exam.

Before you start

- This sample has 20 questions in eight units. Each unit starts with information: a picture, a table, a set of rules or a short description. Every question in the unit depends on it, and every sentence matters.
- Numbers are written in words, as they are in the Champion Tutors practice papers. Digits are used only for question numbers.
- Shade one bubble for each question. Only one answer is correct. No calculator; use the space beside each question for working.
- If you are not certain, choose the answer you think most likely. There is no penalty for a wrong answer.
- Answers, the reasoning, and the trap in each wrong option are on the last pages.

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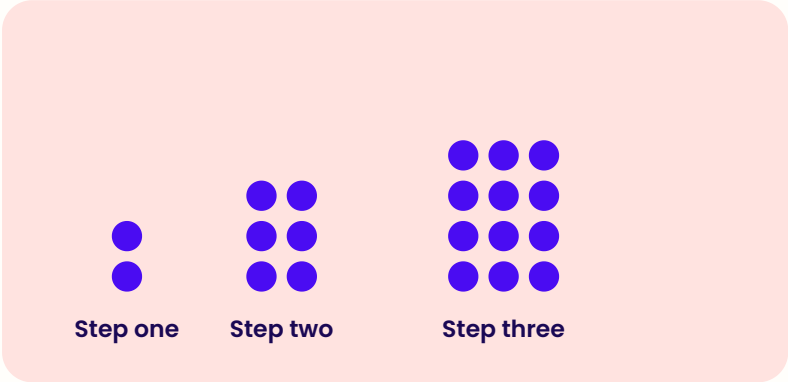
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Quantitative Reasoning

20 questions · about 25 minutes

Questions 1 to 3 · Dot steps

Kaveh makes a pattern of dots with counters from the games cupboard. Each step has one more column and one more row than the step before.



1 How many dots are in step six?

- A thirty-six
- B thirty
- C forty-two
- D forty-nine

2 How many more dots are in step eight than in step seven?

- A sixteen
- B fourteen
- C eight
- D two

3 Which of these could NOT be the number of dots in one of the steps?

- A thirty
- B fifty-six
- C ninety
- D sixty

Questions 4 to 6 · Bruna's word values

In the number game Bruna plays, every word has a value.

Word	Value
CAB	six
BAD	seven
ACE	nine
DIG	twenty

4 **What is the word DEED worth?**

(A) eighteen
(B) sixteen
(C) twenty
(D) fourteen

5 **The secret word Bruna chose is worth ten. Which could it be?**

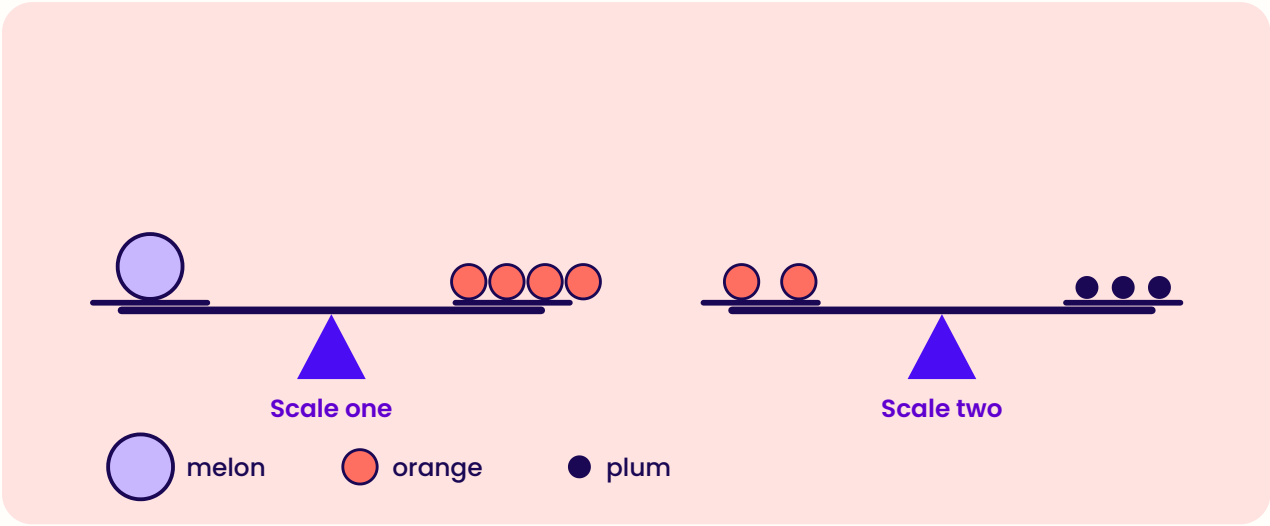
(A) BED
(B) GAB
(C) ADD
(D) FED

6 **A four-letter word is worth twelve. Which must be true?**

(A) It must contain the letter A.
(B) It must contain the letter E.
(C) It cannot contain the letter J.
(D) It cannot contain the letter I.

Questions 7 to 9 · Fruit scales

Habib has two scales. Both balance. All melons weigh the same, all oranges weigh the same and all plums weigh the same.



7 How many plums balance one melon?

A three
B four
C eight
D six

8 Habib puts one melon and one plum on the left pan, and three oranges on the right pan. What must he add to the right pan to make it balance?

A two plums
B one orange and one plum
C two oranges
D one melon

9 Which of these would NOT balance one melon?

A six plums
B two oranges and three plums
C three oranges and two plums
D four oranges

Questions 10 to 12 · Two clocks

Navid lives in Kesterton. His grandmother lives in Port Ellery. Clocks in Port Ellery are always three hours ahead of clocks in Kesterton.

10 **The plane Navid takes leaves Kesterton at nine in the morning (Kesterton time). The flight takes five hours. What time is it in Port Ellery when he lands?**

- A five in the afternoon
- B two in the afternoon
- C eleven in the morning
- D eight in the evening

11 **Navid is awake from seven in the morning until eight at night, Kesterton time. His grandmother is awake from six in the morning until nine at night, Port Ellery time. For how many hours each day are they both awake?**

- A thirteen hours
- B eleven hours
- C fifteen hours
- D eight hours

12 **The flight home leaves Port Ellery at four in the afternoon (Port Ellery time) and lands in Kesterton at six in the evening (Kesterton time). How long is the flight?**

- A two hours
- B five hours
- C eight hours
- D three hours

Question 13 · Calendar puzzle

January, March, May, July, August, October and December have thirty-one days. April, June, September and November have thirty days. February has twenty-eight days, or twenty-nine days in a leap year.

13 **A chess club meets every ninth day. The first meeting is on Monday the first of March. On what date is the next meeting that is also on a Monday?**

- A the eighth of April
- B the tenth of May
- C the third of May
- D the second of May

Questions 14 and 15 · Sprouting beans

Marguerite planted ten bean seeds in each of four pots and counted how many sprouted after a week.

Pot	Water each day	Light	Seeds that sprouted
P	a lot	sunny window	nine
Q	a lot	dark cupboard	eight
R	a little	sunny window	four
S	a little	dark cupboard	three

14 **Which statement do the results support best?**

- (A) Water made a bigger difference to sprouting than light did.
- (B) Seeds sprout better in the dark.
- (C) Light made no difference at all.
- (D) Pot P had the best soil.

15 **Marguerite plants pot T exactly like pot Q, but only five seeds sprout. What is the best thing for her to do?**

- (A) Ignore pot Q.
- (B) Decide that dark cupboards are bad for seeds.
- (C) Repeat the test with more seeds in each pot.
- (D) Add the sprouts from pot T to pot Q and call it one pot.

Questions 16 and 17 · The school shop

The school shop sells these items. Prices do not change if you buy more than one.

Item	Price
pen	one dollar thirty-five
notebook	two dollars eighty
ruler	ninety-five cents
eraser	sixty cents
glue stick	one dollar seventy-five

16 **Valentina buys two different items with a five-dollar note and gets eighty-five cents change. What did she buy?**

A a pen and a notebook

B a notebook and a ruler

C a notebook and a glue stick

D a pen and a glue stick

17 **Joaquin has five dollars. What is the greatest number of different items he can buy?**

A three

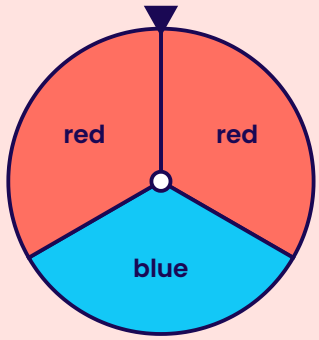
B four

C five

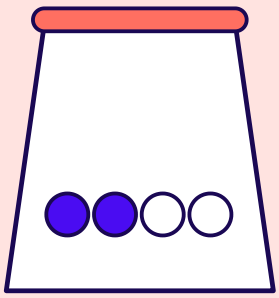
D two

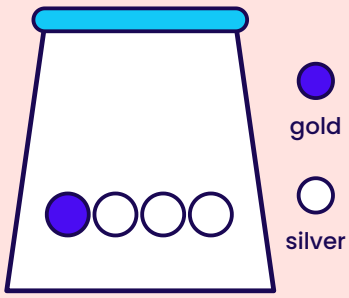
Questions 18 to 20 · Spin and pick

Fenna spins the spinner. If it lands on red, she picks one counter without looking from the Red bag. If it lands on blue, she picks one from the Blue bag. A gold counter wins a prize.



Spinner


Red bag



Blue bag

18 **What is the chance that Fenna wins a prize?**

A one in three

B three in four

C three in eight

D five in twelve

19 **Fenna wins a prize. What is the chance that the spinner landed on red?**

A two in three

B one in two

C four in five

D five in twelve

20 **Which change would make the chance of winning exactly one in two?**

A Paint the blue part of the spinner red.

B Add one gold counter to the Blue bag.

C Swap the two bags.

D Add one gold counter to the Red bag.

Answers

Quantitative Reasoning sample paper

Q	ANSWER	WHY, AND THE TRAP IN THE WRONG OPTIONS
1	**C forty-two**	Step six has six columns and seven rows: forty-two dots. Traps. A: six rows instead of seven. B: step five. D: seven columns and seven rows.
2	**A sixteen**	Step seven is seven by eight (fifty-six), step eight is eight by nine (seventy-two). The difference is sixteen. Each step adds two more dots than the step before added. Traps. B: the difference between steps seven and six. C: adds only one new column. D: counts only the one extra dot in each column.
3	**D sixty**	Every step is a number times the next number: thirty is five by six, fifty-six is seven by eight, ninety is nine by ten. Sixty would need to be seven by eight or eight by nine, and it is neither. Traps. A, B, C: each is a number multiplied by the number after it.
4	**A eighteen**	Each letter is worth its place in the alphabet (A one, B two, and so on) and the values are added. D four, E five, E five, D four: eighteen. Traps. B: counts E as four. C: counts D as five. D: counts each letter once and doubles it wrongly.
5	**B GAB**	G seven, A one, B two: ten. Traps. A: eleven. C: nine. D: fifteen.
6	**C It cannot contain the letter J.**	J is worth ten. The other three letters are worth at least one each, so a word with J is worth at least thirteen. Traps. A: BBBF (two, two, two, six) is worth twelve without A. B: many words of twelve have no E. D: I with AAA is nine and three, which is twelve.
7	**D six**	One melon balances four oranges. Two oranges balance three plums, so four oranges balance six plums. Traps. A: stops at two oranges. B: the number of oranges. C: treats one orange as two plums.
8	**B one orange and one plum**	In plums, the left pan is six and one: seven. Three oranges are four and a half plums. The right pan needs two and a half plums more, which is one orange (one and a half plums) and one plum. Traps. A: two plums are not enough. C: two oranges are three plums, too many. D: far too much.
9	**C three oranges and two plums**	A melon is worth six plums, or four oranges, or two oranges and three plums. Three oranges and two plums are worth six and a half plums. Traps. A, B and D all balance; each swaps oranges for plums correctly.
10	**A five in the afternoon**	He lands at two in the afternoon Kesterton time, which is five in the afternoon in Port Ellery. Traps. B: Kesterton time. C: takes three hours off instead of adding. D: adds the three hours twice.

Q	ANSWER	WHY, AND THE TRAP IN THE WRONG OPTIONS
11	**B eleven hours**	In Kesterton time, his grandmother is awake from three in the morning until six in the evening. Both are awake from seven in the morning until six in the evening: eleven hours. Traps. A: the day Navid is awake. C: the day his grandmother is awake. D: moves the times three hours the wrong way at both ends.
12	**B five hours**	Four in the afternoon in Port Ellery is one in the afternoon in Kesterton. From one until six is five hours. Traps. A: subtracts the clock times without changing time zone. C: moves the time three hours the wrong way. D: the time difference, not the flight.
13	**C the third of May**	Seven meetings later is sixty-three days, exactly nine weeks, so it is a Monday. Sixty-three days after the first of March is the third of May (thirty-one days in March, thirty in April). Traps. A: a Thursday that is not a meeting day. B: seventy days later, not a meeting day. D: counts April as thirty-one days.
14	**A Water made a bigger difference to sprouting than light did.**	Changing the water changes the count by five (P to R, Q to S). Changing the light changes it by only one. Traps. B: the dark pots had fewer sprouts. C: there was a difference of one each time; it was small, not zero. D: soil was not tested.
15	**C Repeat the test with more seeds in each pot.**	Two pots set up the same way gave different results, so chance matters with only ten seeds. More seeds and repeats give a fairer answer. Traps. A: throws away data. B: pot T has the same light as pot Q, so it says nothing new about light. D: mixes two pots and hides the problem.
16	**A a pen and a notebook**	She spent four dollars fifteen. A pen and a notebook cost one thirty-five and two eighty, which is four fifteen. Traps. B: change would be one dollar twenty-five. C: change would be forty-five cents. D: change would be one dollar ninety.
17	**B four**	Leaving out the notebook, the other four items cost four dollars sixty-five. All five cost seven dollars forty-five. Traps. A: keeps the notebook and so runs out of money. C: all five cost too much. D: buys the two most expensive items first.
18	**D five in twelve**	Red (two in three) then gold (one in two) gives two in six; blue (one in three) then gold (one in four) gives one in twelve. Four in twelve and one in twelve make five in twelve. Traps. A: only the red route. B: adds the two bag chances. C: averages the two bags, as if each bag were used half the time.
19	**C four in five**	Out of every twelve games, five are wins on average: four by the red route and one by the blue. So four in five wins come from red. Traps. A: the spinner chance before knowing she won. B: the Red bag chance. D: the chance of winning, not the chance it was red.

Q	ANSWER	WHY, AND THE TRAP IN THE WRONG OPTIONS
20	**A Paint the blue part of the spinner red.**	Every spin would then use the Red bag, which has two gold out of four. Traps. B: makes it seven in fifteen. C: makes it one in three, worse. D: makes it twenty-nine in sixty, close but not exactly one in two.

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