# Sample Prompts for the STAT Written English

STAT Written English requires written responses to two themes. Four prompts will be presented for each theme. Candidates must choose **one** prompt from **each** theme.

Part A topics invite a more formal response in the form of an argument. Part B topics invite a less formal response in the form of personal reflection.

Part A	
Prompt 1	Education helps individuals grow and has a civilising and humanising influence on society as a whole.
Prompt 2	Too much of current education is concerned with rote learning that has little relationship to real problems and real life.
Prompt 3	Education is the greatest force for change and offers the greatest opportunity for hope about the future of our society.
Prompt 4	Much of what passes as education is technical knowledge that does little to broaden the mind.
Part B	
Prompt 5	Friendship is something that most people see as very important, but most friendships turn out to be superficial and fragile.
Prompt 6	Romances come and go, but it is friendship that remains.
Prompt 7	It is important that we learn to be confident within ourselves rather than dependent on the good opinion of others.
Prompt 8	You have to work at friendship, because without tolerance and respect, even the best friendships soon disappear.

**STAT Multiple Choice** 

STAT F

# **Sample Questions**

#### Questions 1 – 3

The best way to grasp the human significance of photography is not to think of camera, film and tripod as something external to human nature, but as evolutionary developments — as much a part of human nature as one's thumb. A deficiency existed, of sorts, in the way our sensory and information storing capacities functioned. They had limits, and photography was one way to overcome those limits. The limit in human functioning is simply this: though we can see things very well, we cannot reliably bring up the image for repeated viewing. Instead, visual images are incompletely stored in memory, often in a highly schematic form, and subject to decay and distortion.

Moreover, memory is private: it does not directly take the form of an external object that others can see. And when the person dies, all of the images stored in his or her brain vanish. It is the perishability of our visual experience that led humankind to seek to fix it by placing it on a more permanent record, more available to public scrutiny than the brain. A first solution to this problem came about through the development of skills in painting and drawing. Humankind had the capacity to depict what was seen by representing those forms and colours on an external surface, such as the wall of a cave, or papyrus, silk or canvas. But it required a special talent to do this, which only a few people possessed.

- 1 The limitation in human functioning referred to in the first paragraph is best described as an inability to
  - A view things accurately enough for all purposes.
  - **B** process instantaneously a complete visual image.
  - **C** store a detailed image of something one has seen.
  - **D** recall visual material accurately, particularly over a period of time.
- 2 The writer uses the example of a person's thumb and evolutionary development (lines 2 3) to make the point that the camera
  - A has replaced part of humankind's sensory capacities.
  - **B** is essentially an extension of humankind's sensory capacities.
  - C has utilised sensory capacities in humankind which were previously undeveloped.
  - **D** has been so widely accepted by humankind that it has become a crutch on which we are dependent.
- 3 The additional limitations of memory described in lines 9 12 relate to humankind's
  - A need for self-expression.
  - **B** insistence on the right to privacy.
  - C desire to communicate observations.
  - **D** need to keep detailed records on individuals.

5

10

### Questions 4 – 5

Figure 1 accompanied an article in a magazine explaining the pungent (hot, spicy) effect of Indian mustard powder on nose and palate. The enzymes referred to in the figure are substances which control chemical activity in living things.





- 4 Figure 1 indicates that uncrushed Indian mustard seed
  - A is pungent.
  - **B** contains allyl isothiocyanate.
  - C contains myrosinase and sinigrin.
  - **D** contains no enzymes.
- 5 Of the following, the best explanation for the pungency of Indian mustard powder is that crushing the seed
  - A brings myrosinase, sinigrin and water together to produce the pungent substance allyl isothiocyanate.
  - **B** breaks down allyl glucosinolate into the pungent substance allyl isothiocyanate, with the release of water.
  - C causes the enzyme myrosinase to turn into the pungent substance allyl isothiocyanate.
  - **D** causes the enzyme myrosinase to produce sinigrin, which then turns into the pungent substance allyl isothiocyanate.

#### Questions 6 – 10

Attached to Runalong Fire Station there are seven firefighters (1, 2, 3, 4, 5, 6, 7). It is necessary to have three firefighters at the station each night in case of emergency, and the Firefighters' Union requires that each firefighter works the same number of nights. Schedules I – IV were prepared for consideration.

	Ι	II	III	IV
Sunday	{1,2,4}	{1,2,4}	{1,2,4}	{1,2,4}
Monday	{2,3,5}	{2,3,5}	{2,3,5}	{2,3,5}
Tuesday	{3,4,6}	{3,4,6}	{3,4,6}	{3,4,6}
Wednesday	{4,5,7}	{4,5,7}	{1,2,4}	{4,5,7}
Thursday	{1,2,4}	{5,6,1}	{5,6,1}	{5,6,1}
Friday	{2,3,5}	{6,7,2}	{6,7,2}	{7,1,2}
Saturday	{3,4,6}	{7,1,3}	{7,1,3}	{6,1,3}

6 Which one of the schedules meets the requirements of the Firefighters' Union?

A	Ι	С	III
B	II	D	IV

#### Questions 7 – 10 refer to the following additional information:

I – IV are examples of schedules. A schedule is a set of v objects (in this case, firefighters) that have to be arranged into b sets (in this case, one set for each day of the week) all of size k and such that each object occurs the same number of times (r) in the schedule and only once in any set. For the firefighters' schedules, v = 7, b = 7, k = 3, and r = 3.

7 If v = 3, b = 6, k = 1, r = 2, which one of the following completes the schedule {1}, {2}, {3}, {1}, {2}, ...?

Α	{1}	С	{3}
В	{2}	D	neither A, nor B, nor C

8 The schedule  $\{1,2\}, \{2,3\}, \{x,y\}$  is a schedule for which v = 3, b = 3, k = 2, r = 2, if

Α	x = 1, y =	2.			С	x = 2, y = 2.
В	x = 1, y =	3.			D	x=2, y=3.
The	aahadula	(1, 2, 2)	(156)	(7, 2, 0)	(1	47)
The	schedule	$\{1, 2, 3\}$	{4,5,6}	{/,0,9}	{1,	,4,/}

{3,6,9}

{1,6,8}

is a schedule for which v = 9, b = 12, k = 3, r = 4, if

{2,5,8}

{3,4,8}

9

A	x = 1, y = 2, z = 4.	С	x = 2, y = 4, z = 6.
В	x = 1, y = 3, z = 5.	D	x = 3, y = 5, z = 7.

{1,5,9}

{2,4,9}

{2,6,7}

 $\{x, y, z\}$ 

10 Which one of the following equations is true for all schedules?

A
$$bk = rv$$
C
 $kv = (b-3)(r-1)$ 

B
 $br = kv$ 
D
 $b - v = k - r$ 

#### Questions 11-13

#### The following passage is from a social history of a Melbourne inner suburb.

Compulsory education signified a massive intervention by the educated and the affluent in the private lives of the poor, and it is clear that many working-class families initially resisted. In 1882 Yarra Park had 1742 children on its rolls and an average attendance of a mere 872. And while truancy rates fell over the next thirty years, many Edwardian children were spectacular truants, often aided and abetted by parents who resented the schools that sought to deprive them of their children's labour and company.

Many parents saw little value in education that, in their view, wasted time on subjects and skills that were not relevant to paid work. The very poor needed their children in the workforce as early as possible.

But as compulsory attendance became a fact of life, acceptance of the authority of the school grew, because working-class parents came to realise that their children's best hope of escape from poverty lay in education. Nonetheless, some of the Victorian and Edwardian parents who resisted the school's appropriation of their children's time dimly perceived, perhaps, that it was an attack on the autonomy of the family. For all the benefits of the increasing role of the Welfare State and the explosion of the helping professions, there have been some losses among the multitude of gains. Poverty and helplessness have not been abolished, only mitigated. People and families in need have lost some of their autonomy and dignity as politicians, bureaucrats and professionals diagnose and decide for them without asking what they would like. Successful protest through the ballot box only replaces these decision makers with another team who are still politicians, bureaucrats and professionals. And it has been the people of the working class who are least equipped to defend themselves against the modern policing of the family. Their poverty prevents them from making private arrangements to service their needs; their lack of confidence inhibits them from battling the indifference of politicians and bureaucrats; their ignorance intimidates them in the face of doctors, social-workers and, of course, teachers.

11 'In 1882 Yarra Park had 1742 children on its rolls and an average attendance of a mere 872.'

The writer produces this statistic to suggest that

- A parents were too ignorant to realise the benefits of schooling for their children.
- **B** formal education was regarded as unimportant by a large proportion of families.
- **C** working-class families mounted a campaign against the intrusion of the educated and the affluent.
- **D** truant children were exceptionally cunning at evading both their parents and the school authorities.
- 12 In the writer's view, the impact of the Welfare State on working-class families has been
  - A beneficial, although it has weakened their independence.
  - **B** subtle, although it has radically changed the class structure.
  - C disastrous, because it has worsened their material situation.
  - **D** negligible, since the benefits have all been in favour of the middle-class.
- 13 The writer suggests that for working-class people the power of the vote
  - A is useless because all politicians are corrupt and self-interested.
  - **B** has given them the opportunity to put social reform on the agenda.
  - **C** does not represent any real opportunity to increase their autonomy.
  - **D** has had a greater impact on their welfare than compulsory education.

10

15

20

25

#### Questions 14 – 19

In some areas of the world, marine birds such as kelp gulls feed on black mussels which have been dislodged from rocks by the action of waves and deposited on the beaches. These birds have learned to break open the shells to get at the fleshy contents by carrying the mussels to heights and dropping them onto hard surfaces, such as rocks or wet beach sand.

Experimental evidence indicates that the minimum drop height required to fracture a black mussel shell depends on its size, and also on the nature of the surface onto which it is dropped. Moreover the speed of a black mussel on impact with the ground can be related to the mussel's drop height and its shell length.

The graphs in Figures 1 to 4 show relationships between the size, impact speed, and drop height of black mussels, and have been based on the results of extensive mussel dropping experiments that attempted to simulate real conditions.

Assume that all black mussels referred to in the following questions are described by these relationships.



Figure 1 Relationship between Impact Speed and Drop Height of Black Mussels of various lengths (indicated in millimetres against each curve)



Figure 2 Relationship between Mass and Shell Length of Black Mussels



Figure 3 Relationship between Shell Area and Shell Length of Black Mussels



Figure 4 Relationship between Minimum Drop Height and Length of Black Mussel Shells which fractured when dropped onto rock or wet beach sand

14 Which one of the following is the smallest drop height required to fracture three black mussels with lengths 75 millimetres, 85 millimetres, and 100 millimetres, when all three are dropped onto wet beach sand?

A	1.90 metres	С	2.67 metres
B	2.35 metres	D	3.00 metres

#### 15 An 80 gram black mussel has a shell area closest to

Α	20 square centimetres.	С	40 square centimetres.
в	24 square centimetres	D	45 square centimetres

**16** Two black mussels are dropped from a height of 2.5 metres onto wet beach sand. Black mussel *X* has a mass of 30 grams and black mussel *Y* has a mass of 60 grams.

According to the available evidence,

- A only black mussel X will fracture.
- **B** only black mussel Y will fracture.
- C both black mussels will fracture.
- **D** neither black mussel will fracture.

- 17 For a group of black mussels, all of which have a shell length of 80 millimetres, the difference between the drop heights required to fracture the mussels when they drop onto rock and wet beach sand is closest to
  - **A** 0.6 metres. **C** 1.9 metres.
  - **B** 1.0 metres. **D** 2.5 metres.
- **18** To fracture a black mussel which has a mass of 30 grams by impact with wet beach sand, the least impact speed required is nearest to
  - A 4.5 metres per second. C 8.4 metres per second.
  - **B** 6.8 metres per second. **D** 10 metres per second.
- **19** Which one of the following statements about the relationships between impact speed, drop height, and shell length of black mussels is supported by the available evidence?
  - A For a given impact speed, the drop height is dependent on the shell length.
  - **B** For a given drop height, the impact speed is independent of the shell length.
  - **C** For a given shell length, the impact speed is independent of the drop height.
  - **D** Neither **A** nor **B** nor **C** is supported by the available evidence.

- 20 Which two of statements (i) (iv) below are most similar to each other in the attitude to equality presented?
  - (i) Although men possess unequal powers, they nonetheless deserve equal rights.
  - (ii) Men are made by nature unequal. It is vain, therefore, to treat them as if they were equal.
  - (iii) Kneeling ne'er spoil'd silk stocking; quit thy state; All equal are within the church's gate.
  - (iv) The wealth of a nation consists more than anything else in the number of superior men it harbours.
  - A statements (i) and (iii) C statements (i) and (iv)
  - **B** statements (ii) and (iii) **D** statements (iii) and (iv)

## UNIT 7



21 The image above can be read as suggesting that we

- A cannot escape conformity.
- **B** can effectively disguise ourselves.
- **C** appear to be anonymous but are unique.
- **D** appear to be unique but are anonymous.

Questions 22 – 27

#### PASSAGE I

The function of the brain and nervous system and sense organs is in the main eliminative and not productive. Each person is at each moment capable of remembering all that has ever happened to him or herself and of perceiving everything that is happening everywhere in the universe. The function of the brain and nervous system is to protect us from being overwhelmed and confused by this mass of largely useless and irrelevant knowledge, by shutting out most of what we should otherwise perceive or remember at any moment, and leaving only that very small and special selection which is likely to be practically useful.

According to this theory, each one of us is potentially Mind at Large. But in so far as we are animals, our business is at all costs to survive. To make biological survival possible, Mind at Large has to be funnelled through the reducing valve of the brain and nervous system. What comes out at the other end is a measly trickle of the kind of consciousness which will help us to stay alive on the surface of this particular planet.

To formulate and express the contents of this reduced awareness, humankind has invented and endlessly elaborated those symbol-systems and implicit philosophies which we call languages. Every individual is at once the beneficiary and the victim of the linguistic tradition into which he or she has been born — the beneficiary inasmuch as language gives access to the accumulated records of other people's experience, the victim in so far as it confirms him or her in the belief that reduced awareness is the only awareness and as it bedevils the sense of reality, so that he or she is all too apt to take the concepts for data, or words for actual things. That which, in the language of religion, is called 'this world' is the universe of reduced awareness, expressed and, as it were, petrified by language. The various 'other worlds' with which human beings erratically make contact are so many elements in the totality of the awareness belonging to Mind at Large.

Most people, most of the time, know only what comes through the reducing valve and is consecrated as genuinely real by the local language. Certain persons, however, seem to be born with a kind of by-pass that circumvents the reducing valve. In others temporary by-passes may be acquired either spontaneously, or as the result of deliberate 'spiritual exercises', or through hypnosis, or by means of drugs. Through these permanent or temporary by-passes there flows, not indeed the perception 'of everything that is happening everywhere in the universe' (for the by-pass does not abolish the reducing valve, which still excludes the total content of Mind at Large), but something more than, and above all something different from, the carefully selected utilitarian material which our narrowed, individual minds regard as a complete, or at least sufficient, picture of reality. 10

5

20

25

15

22 Which one of the following diagrammatic presentations of the structure of perception most closely represents that described in Passage I?



- 23 In the context of Passage I, Mind at Large means
  - A memories which are unnecessary for modern living.
  - **B** a detailed type of awareness which enriches everyone's life.
  - C a mass of chaotic impulses which human beings no longer need for survival.
  - **D** all-embracing memory and perception which are theoretically accessible to everyone.
- 24 How does Passage I indicate the nature of Mind at Large?
  - A explicitly, by describing what appears to certain people, once their access to Mind at Large is unblocked
  - **B** by example, arguing from actual experiences which have been recorded by people through the ages
  - C analytically, by describing the physical structure of Mind at Large
  - **D** indirectly, by a general comparison with our limited awareness

## PASSAGE II

It is a mistake to think of human memory as a unitary thing. Many different kinds of processes are involved. Moreover, there are at least three distinctly different memory systems, a sensory information storage, a short-term memory, and a long-term memory.

The sensory information storage maintains a rather accurate and complete picture of the world as it is received by the sensory system.

The short-term memory system holds a different sort of material from the sensory information store. Short-term memory seems to retain an immediate interpretation of events. If a sentence has been spoken, you do not so much hear the sounds that make up the sentence as you remember the words.

Long-term memory is the most important of the memory systems, and it is also the most complex. The capacity of the sensory information store and short-term memory systems are very limited, but there appears to be no practical limit on the capacity of long-term memory.

Obviously there has to be some limit: the brain is a finite device. But there are approximately ten billion neurons in the brain, each capable of storing a reasonable amount of information. There are also giant molecules which can individually store vast amounts of information. For all practical purposes, then, we can consider that the memory capacity of the human brain is unlimited.

Everything that is retained for more than a few minutes at a time obviously must reside in the long-term memory system. All learned experiences, including the rules of language, must be a part of long-term memory.

The real difficulties associated with long-term memory stem mainly from one source: retrieval. The amount of information contained in the memory is so large that it should be a major problem to find anything. Yet things can be found rapidly; even in the language area of reading, the meanings of the symbols on the printed page must be interpreted through direct and immediate access to long-term memory.

5

10

15

- 25 According to Passage II, the most difficult task with which memory is confronted is to
  - A recall material from the long-term memory.
  - **B** extend the capacity of the long-term memory.
  - C differentiate between true and false material stored in the long-term memory.
  - **D** ensure that material from the short-term memory is safely stored in the long-term memory.
- 26 According to the description of memory systems in Passage II, if you can remember what you ate for dinner last Sunday, this memory is stored
  - A as sensory information.
  - **B** in your long-term memory.
  - **C** in your short-term memory.
  - **D** in a part of the memory which is not covered by any of the above categories.

### Question 27 requires the comparison of Passages I and II.

27 Compare the different accounts of memory given in Passages I and II.

Passage I

- A suggests that our ability to remember is independent of our environment; Passage II suggests that the capacity of memory is determined by the nature of the event which is to be remembered.
- **B** considers all memory as accessible in theory, but in practice subject to limitations; Passage II acknowledges theoretical limitations on memory, but sees no practical restraints.
- C considers the capacity to remember as subject to individual variations in intelligence and creativity; Passage II asserts that all people have an equal capacity to remember.
- **D** considers that the main problem with memory is to distinguish relevant from irrelevant information; Passage II sees storage of information as the only difficulty.

## Questions 28 – 30

The trees in Entland are small but very orderly. The main trunk splits into two major segments, each of which has three major branches on it. Each major branch has four minor branches. Each minor branch has three twigs, and each twig produces two leaves.

28 How many leaves does an Entland tree have?

A	64	С	108
В	72	D	144

29 If one major branch was broken off, the total number of leaves would be reduced by

A	6.	С	24.
B	16.	D	36.

**30** If, instead of the calamity referred to in the previous question, the number of minor branches on each major branch was reduced to three, the total number of leaves would be reduced by

Α	6.	С	24.

**B** 16. **D** 36.

## Questions 31 – 33

In the grid below, different letters represent different whole numbers less than 20. The numbers to the right and below the grid are row and column totals.

For example, Q + L + Z + Z = 46.

Q	L	Z	Z	46
K	K	K	K	28
К	K	Q	Q	32
K	Z	L	Q	40
30	38	Х	Y	

### 31 The value of Q is

A	7.	С	11.
B	9.	D	13.

### **32** The value of X is

Α	40.	С	44.
B	42.	D	46.

#### **33** The value of Y is

Α	36.	С	40.
B	38.	D	46.

#### Questions 34 - 38

It is ironical that a person who contributed so much to the cult of high technology should also have been instrumental in proposing the conservation of natural resources. However, Buckminster Fuller has managed both and, in doing so, invented one of the most potent images of modern 'alternative' utopia, the geodesic dome.

Fuller designed several ideal cities of the megastructure class, but he also developed the concept of 'Spaceship Earth' in which the world is seen as a limited entity, with limited energy income from the sun and limited 'reserves' in the energy bank. Thus he stresses that resources should be used with greater and greater efficiency, as in the case of 'a one-tenth ton Telstar satellite outperforming 75,000 tons of transatlantic cable'. Utopia would be possible only if technology provided more and more goods from fewer and fewer resources:

It was impossible when people thought that there was only enough for a minority to live in comfort. But utopia is now, for all or for none. Because invisible technology can do much more with less, utopia is, inherently, possible for the first time. Bodily needs must precede metaphysical contentment.

During the 1960s, Fuller inaugurated the World Design Science Decade to stimulate the achievement of this utopia, for he believed that the state of society was such that a utopia was necessary to ensure its survival:

Let us . . . commit ourselves earnestly to the Design Science Decade approach to achieving utopia. This moment of realisation that it soon must be utopia or oblivion coincides exactly with the discovery by man that, for the first time in history, utopia is, at least, physically possible of human attainment.

Most people believed that science and technology were far more important to utopia than mere social or political matters. Buckminster Fuller is emphatic in adding design to the list. 'There is only one revolution tolerable to all men, all societies and all systems,' he wrote, 'Revolution by Design and Invention.' However, it should not be surprising to find the designer occupying a role as utopian, for design is the necessary link between scientific theory and a useable product. Moreover, a designer's work inevitably involves speculations and assumptions about the future, however much it may be clothed in professional jargon. Indeed, if progress is the realisation of utopias, it is, to a considerable extent, designers who turn the technical utopias into working projects and programmes.

The utopian assumptions of these projects need close scrutiny and it should not be assumed that they are for the good of all. For knowledge, scientific or otherwise, may be a wonderful thing, but its use in utopia is rarely disinterested or beneficial to all, as is well illustrated by the control and manipulation of knowledge in Plato's republic. Just as in Plato's time, competing concepts of utopia co-exist — the utopia of the stable state with the utopia of freedom and cooperation. To date, science and design have almost exclusively served the former, but, if it is, as Fuller claims, a matter of utopia or oblivion, then it might be appropriate for science to change sides.

15

10

5

25

20

35

- **34** Fuller's concept of 'Spaceship Earth' is best described as seeing the Earth as
  - A having a very limited expectation of continued existence.
  - **B** needing structures erected on its surface to protect its inhabitants.
  - **C** an object with limited supply and support resources for its inhabitants.
  - **D** a utopia, developed with all the skills of artists, scientists and technologists.

**35** Fuller's statement that 'technology can do much more with less' (line 13) is best illustrated by mention of the

- A concept of an 'energy bank'.
- **B** concept of 'Spaceship Earth'.
- **C** example of the Telstar satellite.
- **D** inauguration of the World Design Science Decade.
- 36 The crucial contribution of design and designers to world development lies in the
  - A transmission of theory into practice.
  - **B** addition of a new sort of philosophy.
  - **C** replacement of evolution by revolution.
  - **D** concentration on the future rather than the past.
- 37 Lines 34 35 of the passage refer to 'competing concepts of utopia'. The distinction between the two competing concepts mentioned is best described as
  - A political as against social.
  - **B** speculative as against definite.
  - C superficial as against meaningful.
  - **D** achievable as against unachievable.
- 38 The last sentence of the passage suggests that 'it might be appropriate for science to change sides'.

Which of the following statements would Fuller be most likely to support, given the evidence of his views in the passage?

- A Scientists cannot be relied upon to be disinterested and impartial.
- **B** Designers have already seen the need for freedom and cooperation.
- C Conservationists deserve the support of scientists and technologists.
- **D** Mankind will not survive unless scientists support freedom and cooperation.

# ANSWERS

Unit 1:	Photography	Unit 7:	Thumbprint Drawing
1 D		21 C	
2 B			
3 C			
Unit 2:	Mustard	Unit 8:	Mind at Large
4 C	191 USTALU	22 A	
4 C 5 A		23 D	
5 A		24 D	
Unit 3:	Runalong Fire Station	25 A	
6 B		26 B	
7 C		27 B	
8 B		Unit 9:	Entland Trees
9 D		28 D	Entianu Trees
10 A		28 D 29 C	
Unit 4:	Compulsory Education	29 C 30 D	
11 B	Compulsory Education	50 D	
11 D 12 A		Unit 10:	Grid
12 A 13 C		31 B	
15 C		32 A	
Unit 5:	Black Mussels	33 B	
14 C		Unit 11:	Utopia
15 C		34 C	otopia
16 B		35 C	
17 A		36 A	
18 B		30 A 37 A	
19 A		37 A 38 D	
Unit 6:	Statement	50 D	
20 A	Statement		

20 A