

# Eton College King's Scholarship Examination 2010

**GENERAL I**

**(One and a half hours)**

*Answer **all** the questions included in this paper. Each of the four questions is worth 25 marks.*

***You need not answer the questions in the order set, but you must start each one on a separate piece of paper. In the case of Question 2, you must use the answer sheet provided. If you have not finished a question after 20 minutes, you are advised to leave it and go on to another. Return to any unfinished question if you have time left at the end of the paper.***

***Remember to write your candidate number on every sheet.***

*You are permitted 15 minutes' reading time before starting this paper. It is recommended that you use this time to familiarise yourself with the outline of the questions rather than trying to work out any of the answers in detail. **You may not write anything during this period.***

**[Question 1 begins overleaf]**

# Question 1

## Plato's *Phaedrus* and the Written Word

Socrates has been talking to his young friend Phaedrus about various aspects of effective speech making and how to use words to best effect. They have also turned their attention to the usefulness of writing and the written word in general. Socrates uses an unfamiliar myth to develop his approach.

**Read the following extracts and answer the questions which are at the end of PART A and PART B**

### PART A

Socrates:

*Once upon a time in Egypt there was a famous old god whose name was Theuth. He was the inventor of many arts, such as arithmetic and reasoning and geometry and astronomy as well as draughts and dice, but his greatest discovery was the use of letters for writing. Now, in those days, Thamus (also a god), was king of the whole country of Egypt; Theuth came to Thamus and showed him his inventions, desiring that all the Egyptians might be allowed to have benefit of them.*

*When they came to letters, Theuth said: 'O king, here is a study which will make the Egyptians wiser and give them better memories; it is a potion both for the memory and for the wit.'*

*Thamus replied: 'O most ingenious Theuth, the parent or inventor of an art is not always the best judge of the usefulness or otherwise of his own inventions to those who are going to use them. In fact, in this instance, you who are the father of letters, from paternal love of your children [that is letters and the art of writing], have been led to attribute to them a quality which they cannot have. For this discovery of yours will create forgetfulness in the learners' souls, because they will not use their memories; they will trust to the external written characters and not remember of themselves. And so, the potion which you have discovered is an aid not to memory, but to reminiscence. As for wisdom, it is the reputation, not the reality, that you have to offer to those who learn from you. They will have heard many things and yet received no teaching; they will appear to be omniscient and will generally know nothing; they will be tiresome company, having acquired not wisdom, but the show of wisdom.'*

- (a) (i) Why does Thamus say that an inventor of an art is not always the best judge of its usefulness?  
(ii) Who or what in your opinion is the best judge of a new art or invention? Explain your answer. [2 + 3]
- (b) To what extent do you agree with Thamus's criticisms of writing? [5]
- (c) How might Thamus's criticisms of the written word be adapted by a modern commentator to express concerns about the invention of computer technology? [5]

## PART B

Phaedrus:

*Yes, Socrates, you can easily invent tales of Egypt, or of any other country.*

Socrates:

*There was a tradition in the temple of Dodona that oaks first gave prophetic utterances. The men of old, far simpler than you sophisticated young men, deemed that if they heard the truth even from oak or rock, it was enough. Whereas you seem to consider not whether a thing is or is not true, but who the speaker is and from what country the tale comes.*

Phaedrus:

*I acknowledge the justice of your rebuke; and I think that Thamus is right in his view about letters.*

- (d) Explain the points being made by Phaedrus and Socrates in this extract. [5]
- (e) Do you think Phaedrus is right to yield to Socrates' rebuke so quickly? Justify your answer. [5]

# Question 2

## Substitution Cipher

A secret message might be written using a substitution cipher. This method of encryption involves substituting a letter of the alphabet with a different letter. The receiver of the message must also know the substitutions in order to decipher the message. Rather than re-arranging the complete order of the alphabet to give the cipher alphabet, often a *keyword* or *keyphrase* is used.

For example, if the *keyphrase* was BROWN FOX, you begin by removing any spaces and repeated letters (BROWNFX) and then place it in the cipher alphabet, filling in the remaining spaces with the rest of the letters of the alphabet in correct sequence:

Plain alphabet	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Cipher alphabet	B	R	O	W	N	F	X	A	C	D	E	G	H	I	J	K	L	M	P	Q	S	T	U	V	Y	Z

In this case not all of the letters have been coded (F, Y and Z still match). To make the cipher alphabet more secure, the *keyphrase* could be placed further into the alphabet and then the remaining letters filled in as before:

Plain alphabet	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Cipher alphabet	K	L	M	P	Q	S	T	U	V	Y	Z	B	R	O	W	N	F	X	A	C	D	E	G	H	I	J

A secret message has been intercepted and is shown on **INSERT A**.

The cipher alphabet of this secret message is unknown. One way you might decipher it is by applying frequency analysis. This involves looking at how frequently a letter occurs in the secret message and comparing it to how frequently a letter occurs in plain text. They are unlikely to match exactly, but this will help give an indication of which letter it might be.

Consider these two tables:

**Table 1:**  
Percentage frequencies of letters  
taken from newspapers and novels

Letter	%	Letter	%
A	8.2	N	6.7
B	1.5	O	7.5
C	2.8	P	1.9
D	4.3	Q	0.1
E	12.7	R	6.0
F	2.2	S	6.3
G	2.0	T	9.1
H	6.1	U	2.8
I	7.0	V	1.0
J	0.2	W	2.4
K	0.8	X	0.2
L	4.0	Y	2.0
M	2.4	Z	0.1

**Table 2:**  
Frequency analysis of letters  
in the secret message

Letter	Occurrence	%	Letter	Occurrence	%
A	11	2.0	N	43	7.6
B	2	0.4	O	18	3.2
C	1	0.2	P	43	7.6
D	28	5.0	Q	44	7.8
E	10	1.8	R	70	12.4
F	15	2.7	S	16	2.8
G	11	2.0	T	31	5.5
H	41	7.3	U	6	1.1
I	45	8.0	V	12	2.1
J	9	1.6	W	2	0.4
K	2	0.4	X	9	1.6
L	19	3.4	Y	1	0.2
M	33	5.9	Z	41	7.3
Total number of letters: 563					

Answer the following questions on the **answer sheet** provided on **INSERT B**:

- (a) Using the information from Table 1 and Table 2, determine the **cipher alphabet** used to encrypt the secret message included in **INSERT A**. You will not need to decode the whole message.

You will find the following guidelines helpful:

- Common repeated letters in English are *ss*, *ee*, *tt*, *ff*, *ll*, *mm* and *oo*
- Think of common 1, 2 and 3-letter words in English and start with these in the cipher text

[23]

[Marks will be awarded according to the number of letters deciphered]

- (b) What is the *keyphrase* used in this substitution cipher?

[2]

# Question 3

## The State of Nature

What is the best way to achieve peace and justice among people? Many thinkers have tried to answer this question by imagining a place with no rules, where everybody is free to do as he or she wishes. This can be called the *state of nature*. Once you have decided how people behave without rules, you can work out which rules, if any, are needed.

Here are two passages imagining life in the state of nature. Read them and answer the questions which follow.

### Passage A

*Nature hath made men so equal in body and mind that men have no pleasure (but on the contrary a great deal of grief) in keeping company where there is no power able to overawe them all. We find three principal causes of quarrel: the first, for gain; the second, for safety; and the third, for reputation. During the time men live without a common power, every man is enemy to every man. Men live without other security than what their own strength and their own invention shall furnish them. In such condition there is no place for labour or cultivation of the land, because the fruit thereof is uncertain; no navigation; no knowledge of the face of the earth; no arts; no letters; no society; and which is worst of all, continual fear, and danger of violent death; and the life of man, solitary, poor, nasty, brutish, and short.*

### Passage B

*The state of nature has a law of nature to govern it, which obliges everyone: and reason, which is that law, teaches all mankind, who will but consult it, that being all equal and independent, no one ought to harm another in his life, health, liberty, or possessions: for men being all the workmanship of one all-powerful, and infinitely wise maker; all the servants of one sovereign master, sent into the world by his order, and about his business; they are his property, whose workmanship they are, living and dying at his, not one another's pleasure: and being furnished with like faculties, sharing all in one community of nature, there cannot be supposed any such subordination among us, that may authorize us to destroy one another, as if we were made for one another's uses, as the inferior ranks of creatures are for ours.*

- (a) Explain, in your own words, what is meant by the term *power* in **Passage A**. [3]
- (b) Explain, in your own words, what is meant by *law of nature* in **Passage B**. [3]
- (c) Both passages mention that people are equal in the state of nature. Compare and contrast what each passage says about the results of this equality. [7]
- (d) Imagine that a new island has been discovered. It has been named Lamakan. The land is said to be fertile, with many natural resources. Nobody owns it; no government runs it. Lots of people start moving to Lamakan to begin a new life. Everyone has a need for survival and a desire for comfort. Given these facts and taking into account **Passages A** and **B**, discuss the problems that might arise as the Lamakani community grows, together with possible solutions. [12]

# Question 4

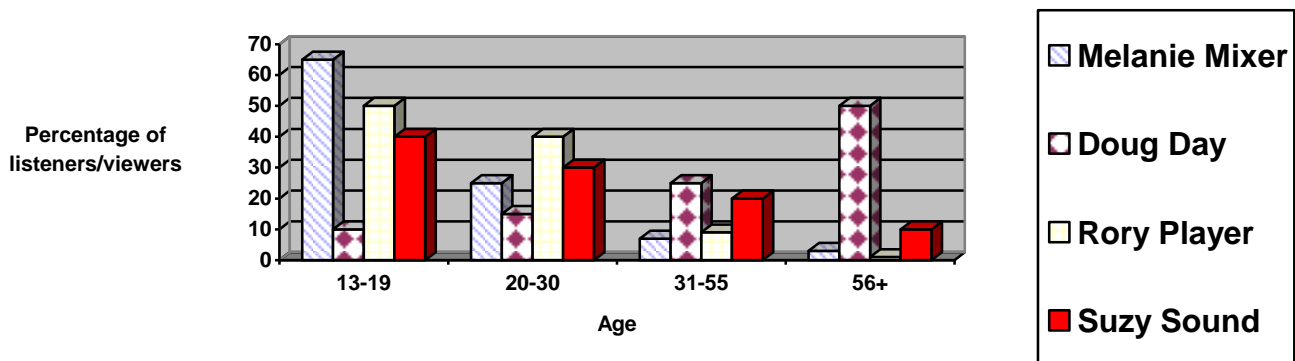
## Disc Jockey Jury

Radio Newtown has been for many years the most successful radio station in the country. Its style is modern and contemporary but its playlist is varied, so its success can be put down to its broad appeal. In recent months it has struggled. Several high-profile departures have resulted in a lack of stability and direction to the station. Many of the longest-serving presenters have stayed on, but numbers of listeners have fallen for some shows. The biggest loss to the station was the resignation of Toby Joy, who was forced to leave the station after it had been discovered that he had fabricated a number of phone-ins to fill time on his afternoon slot. Joy had the largest following of all presenters on national radio. His afternoon show was based around games, phone-ins and guest celebrities, along with a play-list based on rock music and dance tracks. Within months of his departure he had signed for Power Radio, which is the main rival to Radio Newtown.

Radio Newtown is looking for a replacement for Toby Joy. One part of his successful show has remained in place: his producer Steven Singer will produce the new show. Singer has joined forces with the general manager of Radio Newtown, Paul Proud, to appoint Joy's successor. They do not know whom to choose from the list of candidates below:

<b>Melanie Mixer:</b> <ul style="list-style-type: none"> <li>• Young, rising star in radio industry</li> <li>• Learnt her trade as a DJ in night clubs</li> <li>• Hugely ambitious</li> <li>• Works late night slot on Radio Newtown</li> </ul>	<b>Doug Day:</b> <ul style="list-style-type: none"> <li>• Most experienced DJ on national radio</li> <li>• Playlist generally includes lighter tracks, 1950s/1960s music</li> <li>• Looking for last job before retirement</li> </ul>
<b>Rory Player:</b> <ul style="list-style-type: none"> <li>• Irreverent style has made him hugely popular with his supporters</li> <li>• Has been sacked from his recent job for swearing on national radio</li> <li>• Still appears in many comedy programmes on TV</li> <li>• Wants to reach out to a larger fan base, and gain more stability in life and work</li> </ul>	<b>Suzy Sound:</b> <ul style="list-style-type: none"> <li>• New to radio</li> <li>• Has presented reality TV programmes for the last decade</li> <li>• Switching to radio because she loves music and is married to a band member of the iconic pop group <i>Bracelets</i></li> <li>• Loves all styles of music</li> </ul>

This chart shows percentages of listeners/viewers to programmes presented by each candidate based on age:





Having considered all the information above, answer the following questions in relation to how to replace Toby Joy. Give full reasons in every answer.

- (a) How might Steven Singer and Paul Proud differ in their preference? **[5]**
- (b) Who do you think would be the best choice to raise the numbers of listeners to the show? **[5]**
- (c) Who do you think will be the best choice for the long term? **[5]**
- (d) Who is the least likely candidate to be appointed to the show? **[5]**
- (e) Which presenter fits best into the programme format and style of Radio Newtown? **[5]**

**END OF PAPER**