READING

READING PASSAGE 1

*You should spend about 20 minutes on **Questions 1–13**, which are based on Reading Passage 1 below.*

The Development of the Modern Hot Air Balloon

The modern hot air balloon is constructed by suspending a wicker basket underneath a large bag of nylon fabric, known as an envelope. The wicker basket carries the balloon's pilot, any other passengers, and the propane tanks that provide the balloon with a source of fuel. The propane tanks are connected by hose to a pair of burners, which are located between the basket and the envelope. When the burners ignite, their heat passes through the balloon's skirt—a circular sheath of fire-resistant material at the mouth of the envelope—and finally into the envelope itself. Located at the top of the envelope is a parachute vent, a mechanism that allows the pilot to release hot air and increase the balloon's rate of descent when required. This is controlled by a parachute valve cord that extends through the balloon, and into the basket.

The use of hot air balloons can be traced back to the Three Kingdoms era of Chinese history (220-280 AD). Zhuge Liang used these early incarnations, known as Kongming lanterns, as military signals. The first manned flight on record took place in France on October 15th, 1783. In a balloon constructed by Jacques-Etienne Montgolfier, a Frenchman named Pilatre de Rozier was elevated eighty feet off the ground. Modern hot air balloons, with their capacity to ascend or descend and occasionally 'steer' at the pilot's will, were first developed by Ed Yost in the 1950s. The Bristol Belle is generally regarded as the first modern hot air balloon, and had its inaugural flight in 1967. Since then, balloon technology has become extremely sophisticated. Some hot air balloons have reached altitudes of 21,000 metres, travelled over 7,500 kilometres, and reached speeds of up to 400 kilometres per hour.

Hot-air ballooning is generally a safe activity, and serious accidents are rare. In the event that something does go wrong, several items of safety gear are useful to have on board. In case the pilot light and the auxiliary piezo ignition fail, it is a good idea to have a welding torch flint sparker available for the pilot's use. Given the propane combustion used to propel the hot air balloon, a fire extinguisher is an absolute necessity. Flame-resistant gauntlets made out of either leather or nomex are required for the pilot so that a gas valve can be disabled even if an open flame is present. While nomex is a specially-manufactured synthetic form of fire-retardant material, synthetic clothing is generally a hindrance to fire safety, and clothing made of natural fibre is a superior option for pilots. Finally, a handling line—a long rope that can be thrown

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overboard—is a vital precautionary measure that allows people on the ground to steer the balloon away from trouble.

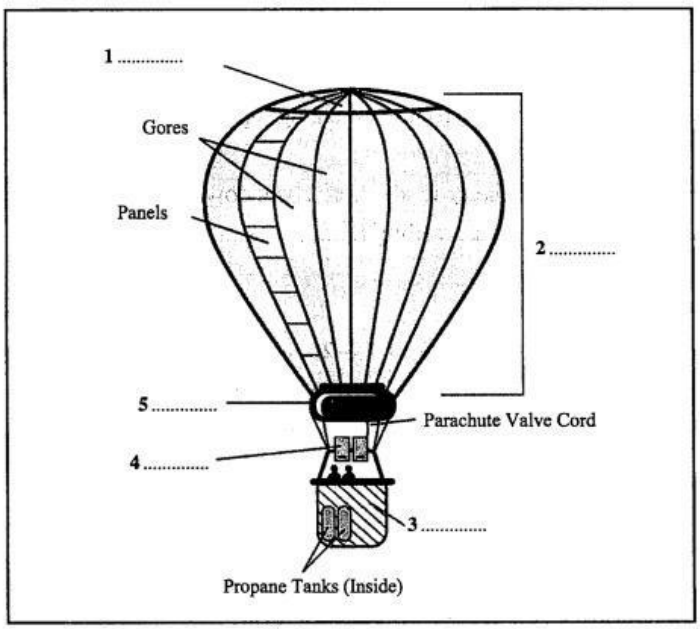
To ensure balloon longevity and safety in operation, it is vital that hot air balloons be maintained and repaired while not in use. Keeping the envelope clean and dehumidified is an important step that prevents mould from forming on the fabric. This is especially important if the balloon has landed in a wet or muddy environment. The burner and fuel system also requires regular maintenance. This can involve the replacement or repair of damaged hoses and any sticking or leaky valves. The wicker basket has skids on its bottom to help it gain traction upon landing; over time these are worn down, and will need to be replaced. International regulations stipulate that balloons must be given a full inspection every one hundred flight hours, or twelve months. This ensures that any problems can be rectified before they become hazardous.

Questions 1–5

Complete the diagram below.

*Choose **NO MORE THAN TWO WORDS** from Reading Passage 1 for each answer.*

Write your answers in boxes 1–5 on your answer sheet.



Question 6

*Choose the correct letter, **A**, **B**, **C** or **D**.*

Write your answer in box 6 on your answer sheet.

Who was the first person to ascend in a hot air balloon?

A Zhuge Liang

B Jacques-Etienne Montgolfier

C Pilatre de Rozier

D Ed Yost

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Questions 7–9

*Choose **THREE** letters, **A–G**.*

Write your answers in boxes 7–9 on your answer sheet.

Which **THREE** of the following seven pieces of safety equipment are suggested for use with a hot air balloon?

A Drop line
B Gas valve
C Piezo ignition
D Synthetic clothing
E Fire-proof gloves
F Flint spark lighter
G Propane combustion

Questions 10–13

Complete the sentences below with words taken from Reading Passage 1.

*Use **NO MORE THAN TWO WORDS** for each answer.*

Write your answers in boxes10–13 on your answer sheet.

10 A dry envelope helps to stop the growth of ..... on the material.

11 Frequent ..... is important: fixing or changing faulty parts of the propulsion system when necessary.

12 ..... help the basket grip the ground when it sets down.

13 Balloons must be checked annually according to ..... .

READING PASSAGE 2

*You should spend about 20 minutes on **Questions 14–26** which are based on Reading Passage 2 below.*

Which Voting System is Better?

Voting is often portrayed as a very simple activity—all that is required being a list of names, boxes and a pen with which to tick the preferred option—but it is actually an intricate process that can take many different forms on which everyone from mathematicians to political scholars, interest groups, politicians and voters often have divergent opinions. Two of the most popular of these voting systems are known as First-Past-the-Post (FPP) and Mixed-Member Proportional (MMP), and they have quite different features.

FPP is one of the simplest voting systems. Voters select one person from a list of candidates in their electorate, and the candidate with the highest number of votes is elected to represent them. While this might sound simple and fair, it can have several undesirable effects. Firstly, because of the 'all or nothing' result, FPP produces a large number of wasted votes—votes which do not affect the outcome of the election. This is the case in the majority of electorates, which are safe or relatively safe. Consequently, the party that gains the highest number of seats in Parliament may not actually gain the most votes—in the 2005 UK elections, for example, the Labour party governed alone with

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only 35 percent of the vote. Because of the pressure on voters not to 'waste' their vote, FPP tends to foster tactical voting for a rival but less popular candidate, thus sidelining minority voices and third party candidacies in favour of a race between two, often similar, contestants.

MMP attempts to create a parliament that represents a national consensus, rather than combining the results from dozens of local 'mini-elections'. Voters select their electorate candidate, as in FPP, but they also select a party, which will gain seats in Parliament proportionate to the party vote. This opens the door for representation amongst parties that may have broad support nationally, but not enough support in any single geographical area to win an electorate seat. While Parliament as a whole may be more representative, however, the ability to affect change within parliament can often accrue to a centrist, smaller party that has the ability to essentially choose the government, by selecting between the major parties as coalition partners. This phenomenon is known as the 'tail wagging the dog'. Finally, the party vote tends to bring in Members of Parliament (MPs) in an order that is chosen, not by the electorate, but by the party itself. This is one of MMP's undemocratic moves that favours party establishment and hierarchy over the will of the public.

New Zealand's transition from FPP to MMP demonstrates the benefits and drawbacks of each system. In the 1970s, many New Zealanders grew disillusioned with the two-party system. FPP did not provide voters with another viable option; however, the leading third party received a considerable 16 percent of the vote in 1978 but gained only one of the 92 seats in parliament—three years later their vote share was up to 21 percent, but they gained only two seats. A Royal Commission subsequently recommended a shift to MMP, and in 1993 a state-wide referendum was held that passed in favour of the reform.

The 1996 elections wore away much public enthusiasm for MMP, however. The result was indecisive, and with neither major party able to govern alone, the power to form a coalition rested upon a third party, New Zealand First. Instead of forming a coalition with Labour—a party that many voters considered to be its natural ally—the New Zealand First party sided with the National party. This was followed by a subsequent rise in party-hopping—Members of Parliament (MPs) leaving the parties from which they were elected. Eventually, the coalition disbanded with Prime Minister Jenny Shipley sacking New Zealand First leader, Winston Peters, from Cabinet.

Nevertheless, after these initial teething problems, New Zealand voters and politicians have grown accustomed to MMP and learnt to focus on its possibilities rather than its hindrances. One of the most notable benefits is that Parliament has become far more representative of the diversity in modern New Zealand society. MMP introduced a number of MPs who had previously been marginalised from mainstream politics: women, people from diverse ethnic backgrounds, and community activists. Relationships between major and minor parties have also grown more stable, and in many ways minor parties now function as auditors keeping a check on the major parties. MMP is not without its flaws, but the transition has generally been a positive experience.

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Questions 14–19

Do the following statements agree with the information given in Reading Passage 2?
In boxes 14–19 on your answer sheet, write

TRUE	*if the statement agrees with the information*
FALSE	*if the statement contradicts the information*
NOT GIVEN	*if there is no information on this*

14 Under FPP the voter always selects the candidate that the voter likes best.
15 Many votes have no role in determining the electoral result in the FPP system.
16 FPP uses geographically-determined electorates as a basis for electing MPs.
17 MMP may give minor parties disproportionate influence.
18 A change in the electoral system was rejected by New Zealand voters in the early 1990s.
19 In both FPP and MMP systems government may not be formed based on a majority voter mandate.

Questions 20–26

Complete the summary below with words taken from Reading Passage 2.
*Use **NO MORE THAN TWO WORDS** for each answer.*
Write your answers in boxes 20–26 on your answer sheet.

Public dissatisfaction with elections came about as a result of the **20** ..... in New Zealand, and many people voted for a **21** ..... instead. However, the parliamentary representation was disproportionate to the number of votes received and, after investigation, this situation eventually led to a national **22** ..... which asked the people to express their preference for a particular electoral system.
The first experience was messy, however: **23** ..... ensued after the New Zealand First party decided to go into **24** ..... with National instead of the Labour party.
New Zealanders have since become used to MMP, and its advantages are now clearer. People once **25** .... from affairs of state have gained access to Parliament, and major and minor parties now get along better—the latter taking on the role of **26** ..... .

READING PASSAGE 3

*You should spend about 20 minutes on **Questions 27–40** which are based on Reading Passage 3 below.*



Neurologists tend to divide the experience of love into three distinct categories: attraction, lust and attachment. The combination of all three can make for an intoxicating and lasting bond, but they are not always experienced together. Frequently, for example, we lust after those with whom we have no desire of having a long-term relationship; at other times, we feel 'attached' to people in the sense of being drawn to them emotionally or spiritually, but not drawn to them physically. It is accurate to describe these as 'stages' of love—lust tends to come first, then attraction, which lasts for months or years, and finally attachment, which can keep people together for decades. These are separate chemical substrates, so they can overlap; however, evidence

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suggests that attraction has a limited lifespan.

Lust is typically experienced soon after puberty. This is when estrogen and testosterone—the underlying chemical substrates for lust in women and men respectively—activate themselves in our bodies for the first time. The primary purpose of lust is believed to be procreation, and the experience is one of feeling physically drawn, or even 'pulled' towards another person. Pheromones, physical attractiveness and our socialised predispositions for what we seek in a mate are the factors that activate the sensation of lust. Despite the strength it can have over our psyche, lust on its own is a very fleeting experience. It can firmly steer people together for their initial encounters, but it has no power to keep them there.

If the relationship is to last, something called *attraction* must take place. Attraction is the intoxicating sensation experienced in the initial period of knowing someone. The 'symptoms' include dizziness, flushed skin, and a loss of appetite and sleep. These are a result of a chemical cocktail of dopamine and norepinephrine that PEA—a transmitter chemical—unleashes into the bloodstream when attraction takes place. Dopamine is responsible for the blissful feelings of self-confidence, joy and motivation that new love brings about; norepinephrine, similar to adrenaline, brings about palpitations and anxiety. Attraction has more staying power than lust; while its intensity fades after a few weeks, the effect of the PEA transmission can continue for some time between eighteen months and four years. After that, our bodies build up a natural tolerance.

At this stage, a transition to a phase called *attachment* can occur. The 'rush' of attraction is replaced by endorphins like oxytocin and vasopressin that feel like a gentle, warm sort of pleasantness—a safe feeling that calms the mind, numbs pain and soothes anxiety. This is a much more pleasant feeling in which to spend an extended period of time—potentially, forty, fifty or more years, depending on when you meet your partner. It allows you to live your life with someone, without their being the central obsession of your life. Unfortunately, there is no guarantee that PEA transmission will evolve into the endorphin stage—in many instances, it will be replaced by a feeling of emptiness and dissatisfaction. It is not a coincidence that peak divorce rates occur at between four and seven years, as PEA transmission wears away and attachment does not materialise in many people's brains.

Even neurologists agree that chemistry isn't everything. There are numerous other factors such as culture and personality, for which science may never have an explanation. While dopamine is bliss, however, ignorance is not—neurology has much to contribute to satisfaction in our personal lives. It may not be a good idea to commit to marriage or spending the rest of your life with someone if you still feel the blissful rush of PEA transmission, for example. Once your brain has succumbed to the warming opiates of oxytocin and vasopressin, this will be a safer commitment. Attachment brings other needs to the foreground, however; while people enjoy the security that attachment brings about, they do not lose their desires for either lust or attraction. Losing the ability to give your partner the rush of PEA transmission, while knowing that he may feel this for other people, can bring about jealousy and anxiety in people. Acknowledging and discussing these insecurities can alleviate them as it is likely that, to some extent, both partners will be feeling them.

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Questions 27–33

Complete the notes below.

*Choose **NO MORE THAN TWO WORDS AND/OR A NUMBER** from the passage for each answer.*

Write your answers in boxes 27–33 on your answer sheet.

Lust	Attraction	Attachment
Designed to encourage **27**	Two chemicals are released through a third one called PEA	Chemicals in the brain work to reduce physical & mental suffering, and calm **31** .....
Generated by natural scent, looks, and **28**	**29** ..... is a feel-good chemical; norepinephrine brings about elevated heart-rate and nervousness	Separate chemical processes mean PEA transmission does not always progress to **32** .....
Has weak staying power	Can last for up to **30**	There is a relationship between **33** ..... and the failure of attachment to occur

Questions 34–39

Do the following statements agree with the views of the writer in Reading Passage 3?

In boxes 34–39 on your answer sheet, write

YES	*if the statement agrees with the views of the writer*
NO	*if the statement contradicts the views of the writer*
NOT GIVEN	*if it is impossible to say what the writer thinks about this*

34 We cannot explain all romantic decisions on the basis of chemical processes.

35 Knowing about brain chemistry can actually harm our happiness.

36 Long-term relationship commitments should be made after attraction has faded.

37 Relationship insecurities fade away once the attachment phase begins.

38 Growing resistance to PEA transmission is experienced as mental anguish.

39 Talking about the effects of PEA resistance on a relationship can make anxiety worse.

Question 40

*Choose the correct letter, **A**, **B**, **C** or **D**.*

Write your answer in box 40 on your answer sheet.

Which is the most suitable title for Passage 3?

A The chemical progression of love

B Is it lust or is it love?

C How love fades over time

D Why nuptials and neurology don't mix

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