## Q1

An executive of a business is likely to have more confidence in the ability of a close friend, relative or associate, to perform well in their business, because they know them well. So, some degree of nepotism in business (i.e. hiring close friends, relatives or associates) is unavoidable, as executives need to hire individuals whom they are confident will perform well in their business.

1. An executive of a business is likely to know their close friend, relative or associate well.

Therefore:

2. An executive of a business is likely to have more confidence in the ability of a close friend, relative or associate

3. Executives need to hire individuals whom they are confident will perform well in their business.

Therefore:

C. Some degree of nepotism in business like hiring close friends, relatives or associates is unavoidable.

## Q2

*No dead language can be read. Latin is a dead language. Therefore, no one can read Latin.*

(a) The argument is deductively valid.

(b) The argument is valid because it follows a valid logical form: Universal Modus ponens

A: Dead language

B: Languages that cannot be read

C: Latin

All A are B. (Premise: No dead language can be read.)

X are A. (Premise: Latin is a dead language.)

Therefore:

X are B. (C: No one can read Latin.)

In this case, A represents "dead languages," B represents "languages that can be read," and C represents "Latin." The argument follows the form "All A are B" and "All C are A," leading to the conclusion "All C are B," which translates to "No one can read Latin."

*Living things need water. Plants need water. So, plants are living things.*

(a) The argument is deductively invalid.

(b) The argument is invalid because it goes against Universal Modus ponens

All A are B. (Living things need water.)

X is B. (Plants need water.)

Therefore,

X is A. (Plants are living things.)

The premise means that all living things need water, but a plant that needs water cannot be said to be a living thing it is living thing, here is the counter-example based on this form:  
All cats are animals.

All dogs are animals.

Therefore,

All dogs are cats.

*If you drive when you could walk somewhere, then you're releasing unnecessary greenhouse gases. If you release greenhouse gases unnecessarily, then global temperatures will rise. So,* *you shouldn't drive when you could walk somewhere.*

(a) The argument is deductively valid.

(b) The argument is valid because it follows a valid logical form: Hypothetical syllogism

A: You drive when you could walk somewhere.

B: You're releasing unnecessary greenhouse gases.

C: Global temperatures will rise.

If A then B. (Premise: If you drive when you could walk somewhere, then you're releasing unnecessary greenhouse gases.)

If B then C. (Premise: If you release greenhouse gases unnecessarily, then global temperatures will rise.)

Therefore:

If A then C. (C: you shouldn't drive when you could walk somewhere. / If you drive when you could walk somewhere then global temperatures will rise)

Potential:

*The government should stop providing money to private schools. If public institutions are underfunded, the government should stop funding private versions of those institutions. And it’s a fact that public schools are underfunded.*

*I don't keep my daughter home from school unless she is sick. My daughter was sick today, so, I kept her home from school.*

## Q3

Put the following argument into standard form and identify at least one unstated premise (assumption) that is required by the argument.

*Contrary to what many people initially believed, if you’re vaccinated against COVID-19, there is still a significant chance that you will catch the disease. So, the government should not attempt to use vaccinations to control the COVID-19 pandemic.*

Standard Form:  
  
P1. If you’re vaccinated against COVID-19, there is still a significant chance that you will catch the disease.

Therefore,

C. The government should not attempt to use vaccinations to control the COVID-19 pandemic.

Assumption: Governments should not use a method to control a pandemic that still has a high chance of catching the disease.

Potential:

*There were only two sheep in the paddock yesterday. No sheep have crossed the fence designating the borders of the paddock since then. Therefore, there are two sheep in the paddock today.*

## Q4.

Read the passage below. Comment on whether you accept the claim for which the source, Robert Lanza, is cited as an authority. Specifically,

(a) identify the main claim(s) which the source is being used to support

(b) state whether you would accept the claim(s) on the source's word and explain your answer

*Is there an afterlife? After the body dies, does life go on? Is there any proof to the afterlife? My honest answer to that question is yes. As a free thinker and someone who looks for that piece that fits in the mysteries of life, I have always wondered how the concept of the afterlife has fit into science. For many years, I have been so intrigued with quantum physics.*

*But don't take my word for it! Robert Lanza, MD, claims that quantum physics proves there IS an afterlife. In his book Biocentrism: How Life and Consciousness are the Keys for Understanding the True Nature of The Universe, Lanza proposes a new perspective that our current theories of the physical world do not work and can never be made to work until we account for life and consciousness. One of his main theories is that Life creates the universe and not the other way around. [In] his theory of Biocentrism, Lanza claims that death is an illusion created by our consciousness, and space and time are tools of our mind. With these theories, we have revolutionized our concept of the afterlife and answer the question hat life does go on after physical death and fades into the afterlife, where the journey continues.*

*Excerpt adapted from "Faded: The Circle of Life to the Soul" by Trish Avery*

*Background information on Robert Lanza:*

*Robert Lanza M.D. is currently Head of Astellas Global Regenerative Medicine, and is Chief Scientific Officer of the Astellas Institute for Regenerative Medicine and Adjunct Professor at Wake Forest School of Medicine. His research focuses on stem cells and regenerative medicine and their potential to provide therapies for some of the world's most deadly and debilitating conditions. He has been touted as one of the most respected scientists in the world-a US News & World Report cover story called him a "genius" and a "renegade thinker," even likening him to Einstein.*

a)

The main claims are:

Lanza proposes quantum physics proves the existence of an afterlife. He claims that our current theories of the physical world are incomplete and cannot explain life and consciousness.

Lanza proposes the theory of Biocentrism, where life creates the universe, death is an illusion created by consciousness, and space and time are tools of the mind.

Lanza proposes life will continue after physical death.

b)

Based on the provided information, I would not accept the claim that quantum physics proves the existence of an afterlife:

1. Position to Know: Robert Lanza's expertise in the field of regenerative medicine and stem cells, not in physics or quantum mechanics. While he may be knowledgeable in his area of research, his remarks about quantum physics and its relation to the afterlife may not carry the same weight as those of experts who specialised in those fields. Therefore, his statements in this context may not be relevant or authoritative.

2. Reliability: Robert Lanza holds positions as the Head of Astellas Global Regenerative Medicine and Chief Scientific Officer of the Astellas Institute for Regenerative Medicine, he may have vested interests in promoting his ideas and theories. There is a possibility that his claims about quantum physics and the afterlife could be influenced by his role within the organisation and his wants to attract attention and support for his research.

3. Corroborating Evidence: The claim that quantum physics proves the existence of an afterlife contradicts the consensus among physicists and scientists in relevant fields. Quantum physics primarily deals with the behaviour of particles and the fundamental laws that govern the microscopic world. It is not a field that is aimed at studying the existence or nature of an afterlife. The claim made by Lanza goes against the current scientific understanding and lacks supporting evidence from the scientific. Without substantial corroborating, it is difficult to consider Lanza's claim as convincing.

In conclusion, considering Robert Lanza's background, the potential biases that may influence his statements, and the lack of corroborating evidence from the scientific, I would not accept the claim presented by him.

Q5

Read the passage below. Identify the sample, population and target property used in the study and comment on whether the evidence presented provides a compelling reason to accept the conclusion drawn by the researchers.

*Student Flights, an Australian travel agent, wanted to know how much Australians were willing to spend on holidays. In January, they created a list of 100,000 customers who had booked a flight with them in the past two years. They then sent a survey to everyone on the list asking them to estimate for each of their holidays in that period how much they spent on food, accommodations, and flights. 5,000 people responded. From this data, Student Flights concluded that Australians are willing to spend approximately $2,000 AUD on an average holiday.*

Sample:

5000 people who responded to the survey

Population:

All Australians

Target Property:

Amount of money Australians are willing to spend on holidays

Does the data support the conclusion?

Data presented in the passage may not be sufficient to provide a good reason to accept the conclusion. The researchers collected self-reported data from the survey respondents regarding their holiday expenses. Self-reported data can be influenced by various factors, such as recall bias or a tendency to provide socially desirable answers. These factors may affect the accuracy and reliability of the reported expenditures. Meanwhile, the study focuses solely on customers of Student Flights, which may not provide a comprehensive view of the spending habits of all Australians. People who book flights with this specific travel agent may not be representative of the wider population in terms of income, age, or other demographic factors. Therefore, the findings may not be generalisable to the entire population.

Q6

Assuming the premises in the following argument are true, do they support the **causal** conclusion? Explain your answer.

*Recent research suggests that air pollution may be a contributing cause of ADHD. Researchers compared rates of ADHD diagnosis and pollution in councils around Australia. They had each council building fitted with an airborne particulate detector and recorded the average particulates in the air each day during the year. They also got all health practitioners who were qualified to diagnose ADHD to send counts of these diagnoses to the council at the end of the year. Results showed that that the more pollution in a council's average day, the more diagnoses of ADHD there were per year in that council. The researchers imply that the relationship may be due to reduced oxygen available for uptake by the brain.*

The study does not support a causal link between air pollution and ADHD. Even the result shows the correlation but it does not mean that one variable causes the other. There could be other factors at play that contribute to both pollution levels and ADHD diagnoses, such as socioeconomic factors, access to healthcare, or other environmental factors that could be confounding variables that contribute to both pollution levels and ADHD diagnoses. Since lack of control variables, it is challenging to attribute the relationship solely to air pollution. Meanwhile, the passage does not provide direct evidence or explanation of the mechanism through which air pollution could cause ADHD. Without a clear understanding of the biological or physiological processes involved, it is difficult to establish a causal link between air pollution and ADHD based solely on this implication.

Potential:

*Researchers claim to have shown that SuperBrain yoga increases intelligence. The researchers randomly selected Monash students by emailing people whose student number was selected by a random number generator. The researchers then took the final group of students that consented to participate and split them into two groups. Both groups did an IQ test at the beginning of the experiment. For the next week, the first group did SuperBrain yoga once a day. The second group was a control group, and did Vinyasa yoga once a day. Both groups recorded their sessions in an app. After the week of yoga, both groups repeated the IQ test, and their scores went up. The researchers suggest that SuperBrain yoga works by synchronising the two hemispheres of the brain in an alpha rhythm, thus preparing it for more complex cognitive tasks.*

## Q7

Evaluate the following extended argument. Identify the main problem(s) with the argument, explain why they are problems, and clearly state whether you think the argument provides a compelling reason to accept the conclusion. You may find it useful to put the argument into standard form and to draw an argument map but you should only submit your written evaluation. You may use the following template as a guide to structuring your response.

Paragraph 1:

First sentence: Say what the conclusion of the argument is and whether the argument provides a good reason for accepting it.

Second sentence: Say how many major problems/issues you’re going to discuss.

Body Paragraph(s): [repeat for each issue you discuss]

First sentence: Say what the problem is.

Next sentence(s): Explain why it is a problem for the argument.

Final sentence(s): Say what would need to be established for the argument to be successful. / Explain how, with minor adjustments this problem can be overcome.

*We are told that the global average temperature is supposed to increase by between 1.4 and 5.8 degrees by the year 2100. Australia produces about 2 per cent of the world’s total greenhouse gas emissions. Therefore, Australia’s contribution to global warming this century would amount to between 0.03 and 0.1 degrees. An ordinary thermometer used in meteorological observations can be read to 0.1 degrees, so Australia’s contribution over the century would barely register on a thermometer. So, we should not delude ourselves that enacting greener policies here in Australia will be of any practical use in reducing global warming.*

*Adapted from a letter to The Age newspaper, 2006.*

The argument concludes that enacting greener policies in Australia will not be of any practical use in reducing global warming. However, there are several major problems with this argument which cannot provide a good reason to accept it.

The first problem is that it relies on a simple understanding of the issue, it overlooks the cumulative effect of greenhouse gas emissions over time. While Australia's contribution may small compare to the global average temperature increase, it fails to acknowledge the collective impact of emissions from various countries. Global warming is a global issue that requires collective action from all nations, including Australia. The argument undermines the significance of Australia's role in addressing climate change which undermines the argument's validity.

Secondly, the argument overlooks the long-term effects of greenhouse gas emissions and the broader scope of climate change. The increase in global average temperature by 2100 is not a one-time event that occurs and then immediately stabilises. Instead, the greenhouse gases emitted today will continue to trap heat in the atmosphere for decades, leading to further warming beyond the year 2100. While Australia's emissions over the century may insignificant, when combined with emissions from other countries, contributes to the overall trend of global warming. Dismissing Australia's role based solely on a single thermometer reading simplifies the issue and fails to account for the long-term consequences. Moreover, global warming consequences include rising sea levels, extreme weather events, and ecosystem disruptions. By focusing on temperature measurement, the argument simplifies the complexities of climate change and overlooks its broader impacts on the planet and human societies.

Moreover, the argument fails to consider the broader implications of greener policies in Australia and it straight to the negative attitude. Implementing sustainable practices and transitioning to renewable energy sources can have numerous benefits beyond just mitigating global warming. These include improvements in air quality, energy security, job creation, and technology innovation. By ignoring these potential positive outcomes, the argument overlooks the advantages of greener policies.

In conclusion, the argument fails to provide a compelling reason to accept its conclusion due to its simplistic understanding of the issue, its failure to consider the long-term effects of emissions, and its disregard for Australia's potential to influence global action.