

# UCAT

## VERBAL REASONING SESSION 1

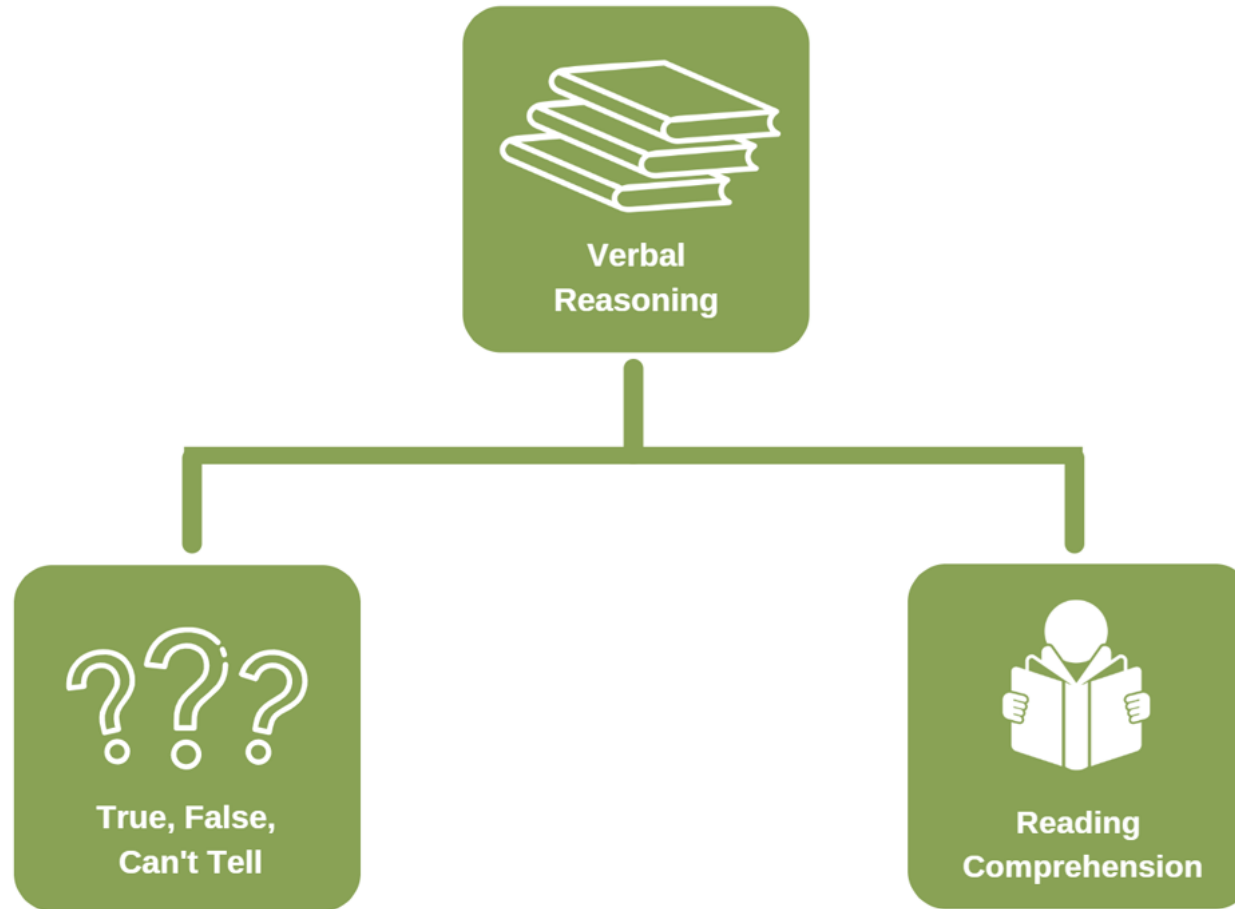


# UCAT VR Format

- ✓ The UCAT Verbal Reasoning subtest is composed of 11 passages of text (ranging from 200 to 400 words), giving a total of 44 questions.
- ✓ You have 21 minutes to complete these UCAT questions, which is under 2 minutes per unit
- ✓ under 30 seconds per question

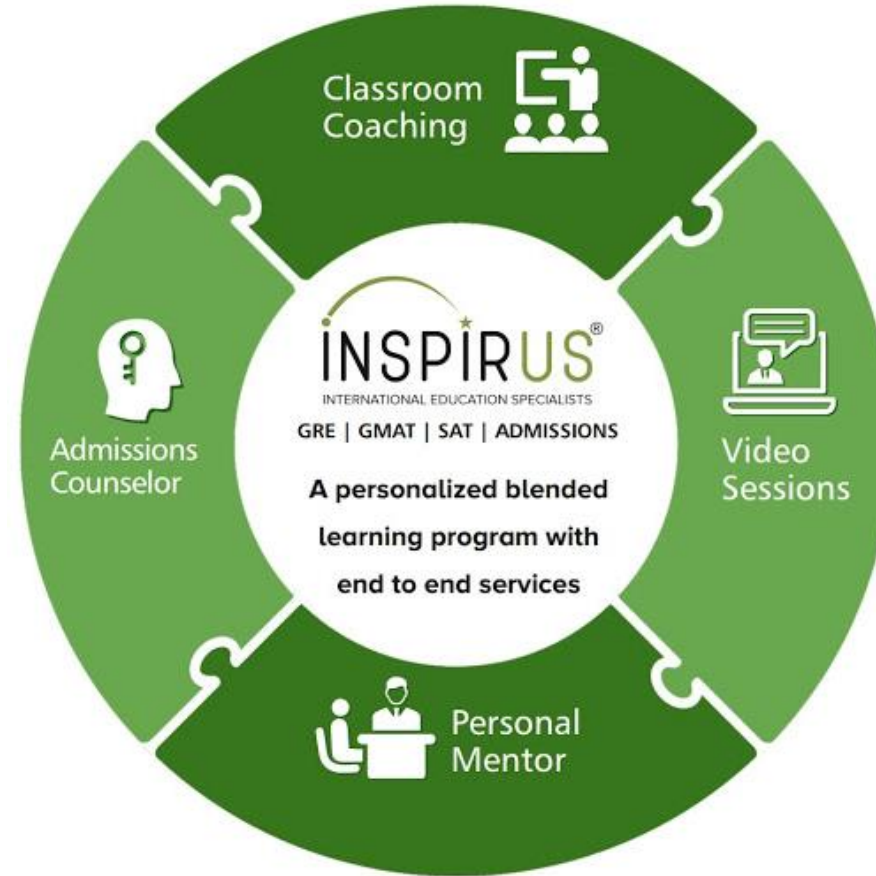


# Two main types of UCAT VR questions



# Verbal Reasoning 1

## Reading Comprehension



# Strategies for UCAT VR questions

Speed reading

Keyword  
searching

Understanding  
logical fallacies

Applying a  
critical thinking  
framework

Not using your own  
knowledge/biases



# Increase your reading speed

- Speed reading is a key skill that is required to succeed in the Verbal Reasoning subtest of UCAT.
- Not only will you be faced with lengthy passages of text, but you will also have less than 30 seconds on average to answer each question.
- You need to be able to skim through the text, identifying the structure of the passage and the key points being communicated. Various speed-reading strategies are useful in UCAT, such as chunking.



# Use key words

- Identifying and searching for keywords
- Start by identifying keywords in the question stem that stand out or are unique.
- Good keywords include dates (for example, 1998) or capitalized words (for example, United Nations).
- Scan the text for these keywords to locate relevant parts of the passage.
- Read just before and after the keyword: this will provide you with the necessary information required to answer the question.



# The Linking Words

1. A linking word is a word that shows a connection between clauses or sentences.
2. Help the reader interpret your ideas
3. Transitional words or phrases help carry your thoughts forward from one sentence to another and one paragraph to another
4. Transitional words link sentences and paragraphs together smoothly so that there are no abrupt jumps or breaks between ideas





# Example of The Linking words

- **To Add:**
  - and, again, and then, besides, equally important, finally, further, furthermore, nor, too, next, lastly, what's more, moreover, in addition, first (second, etc.)
- **To Compare:**
  - whereas, but, yet, on the other hand, however, nevertheless, on the contrary, by comparison, where, compared to, up against, balanced against, vis a vis, but, although, conversely, meanwhile, after all, in contrast, although this may be true
- **To Prove:**
  - because, for, since, for the same reason, obviously, evidently, furthermore, moreover, besides, indeed, in fact, in addition, in any case, that is



# Example of The Linking words

- **To Show Exception:**
  - yet, still, however, nevertheless, in spite of, despite, of course, once in a while, sometimes
- **To Show Time:**
  - immediately, thereafter, soon, after a few hours, finally, then, later, previously, formerly, first (second, etc.), next, and then
- **To Repeat:**
  - in brief, as I have said, as I have noted, as has been noted
- **To Give an Example:**
  - for example, for instance, in this case, in another case, on this occasion, in this situation, take the case of, to demonstrate, to illustrate, as an illustration



# Example of The Linking words

- **To Emphasize:**
  - definitely, extremely, obviously, in fact, indeed, in any case, absolutely, positively, naturally, surprisingly, always, forever, perennially, eternally, never, emphatically, unquestionably, without a doubt, certainly, undeniably, without reservation
- **To Show Sequence:**
  - first, second, third, and so forth, next, then, following this, at this time, now, at this point, after, afterward, subsequently, finally, consequently, previously, before this, simultaneously, concurrently, thus, therefore, hence, next, and then, soon
- **To Summarize or Conclude:**
  - in brief, on the whole, summing up, to conclude, in conclusion, as I have shown, as I have said, hence, therefore, accordingly, thus, as a result, consequently



# Accept that you won't have time to check each option

- Many students are tempted to check each option in Reading Comprehension questions to ensure that the option they are choosing is the 'best' answer. Unfortunately, the Verbal Reasoning subtest of UCAT is highly time pressured, and if you check each option for each question, you will run out of time.
- If you come across an option that seems to match the answer, select it and move on. Trust your judgement and your instincts.



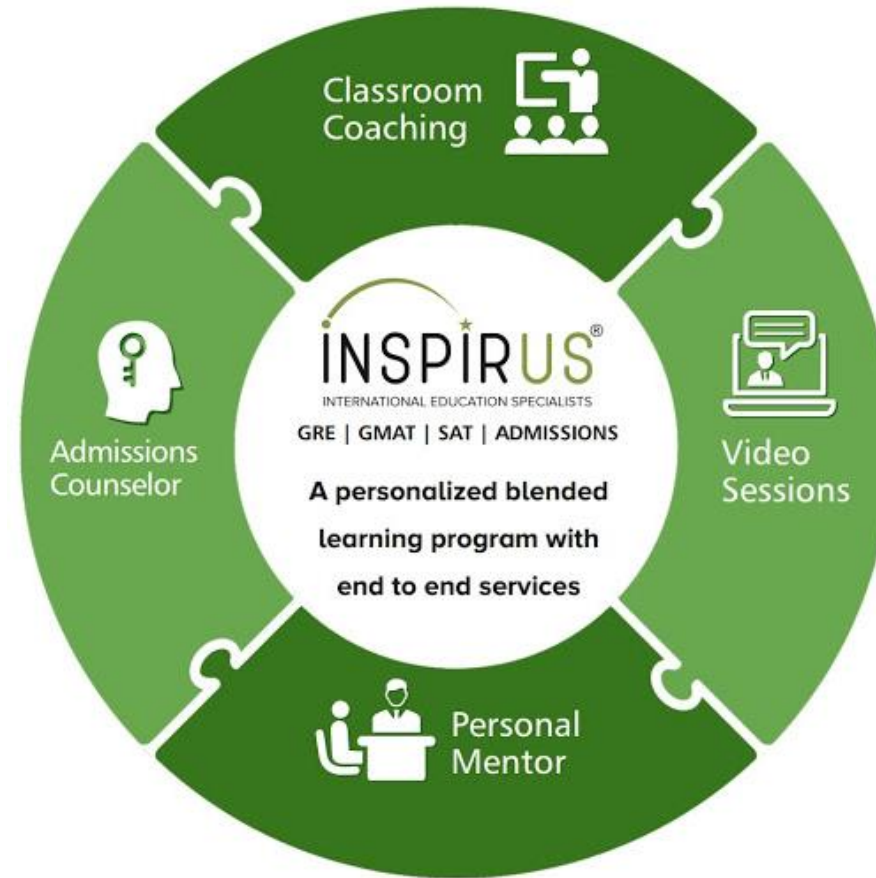
# Don't over-think

- Smart students are prone to over-thinking passages and answer options. However, if you do this in the Verbal Reasoning subtest of UCAT, you will often get the question wrong.
- Take the statements in the passages at face value. Do not over-analyse or second guess what is presented. For the purposes of UCAT, accept that each statement is factually true. Remember that the test designers know that you have limited time to make assessments, so you will not be required to engage in significant analysis or evaluation.



# VR Practice 14

## Sleepover



Everyone knows that sleeping too little is bad; it makes you feel tired and irritable; and it can contribute to obesity, high blood pressure, diabetes and heart disease. But now, those who sleep too much also have cause for concern: research carried out over the last 10 years appears to show that adults who usually sleep less than 6 hours or more than 8 are at risk of dying earlier than those who sleep between 6 and 8 hours.

An analysis of the results of 16 different studies by Professor Cappuccio shows that 12% more of the short sleepers (i.e. those who sleep less than 6 hours per night) had died when they were followed up, compared to the medium sleepers (i.e. those who sleep 6-8 hours per night). However, 30% more of the long sleepers had died compared to the medium sleepers. That increase in mortality risk is roughly equivalent to the risk of drinking several units of alcohol a day, though less than the mortality risk that comes from smoking.

Professor Cappuccio was aware that some of those who sleep too long might be depressed or might be using sleeping pills. He made allowances for this and found that the link was still there. His own theory is that people who sleep over 8 hours may have an underlying health problem that is not yet showing other symptoms.

But not everyone agrees. Professor Youngstedt of Arizona State University carried out a study with 14 young adults, asking them to spend 2 extra hours in bed every night for 3 weeks. The participants complained of soreness and back pain. They also suffered from “increases in depressed mood” and also “increases in inflammation”, specifically higher levels of a protein called IL-6 in the blood, connected with inflammation.

Anyone studying sleep has to contend with a range of difficulties. You have to take with a pinch of salt the number of hours people say they sleep each night. Apparently we have a tendency to overestimate how long we have been asleep. And when it comes to quality of sleep, all experts agree that it is even harder to measure than how long you sleep.

## PRACTICE QUESTIONS

**Q14.1** What conclusion can be drawn from Professor Cappuccio’s research?

- A. People who sleep more than 8 hours would be less likely to die if they made efforts to sleep less than 6 hours.
- B. Depression can stop you from sleeping enough hours.
- C. Taking sleeping pills increases your mortality risk.
- D. Sleeping more than 8 hours may be the first sign of a terminal illness.

**Q14.2** What conclusion can be drawn from Professor Youngstedt’s research?

- A. People who sleep 8 hours tend to be more depressed than those who sleep only 6 hours.
- B. Spending 2 hours more in bed than you normally do may increase your risk of depression.
- C. IL-6 can cause depression.
- D. Sleeping more than 8 hours may be the first sign of a terminal illness.



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### Q14.3 Which assumption is Professor Cappuccio making?

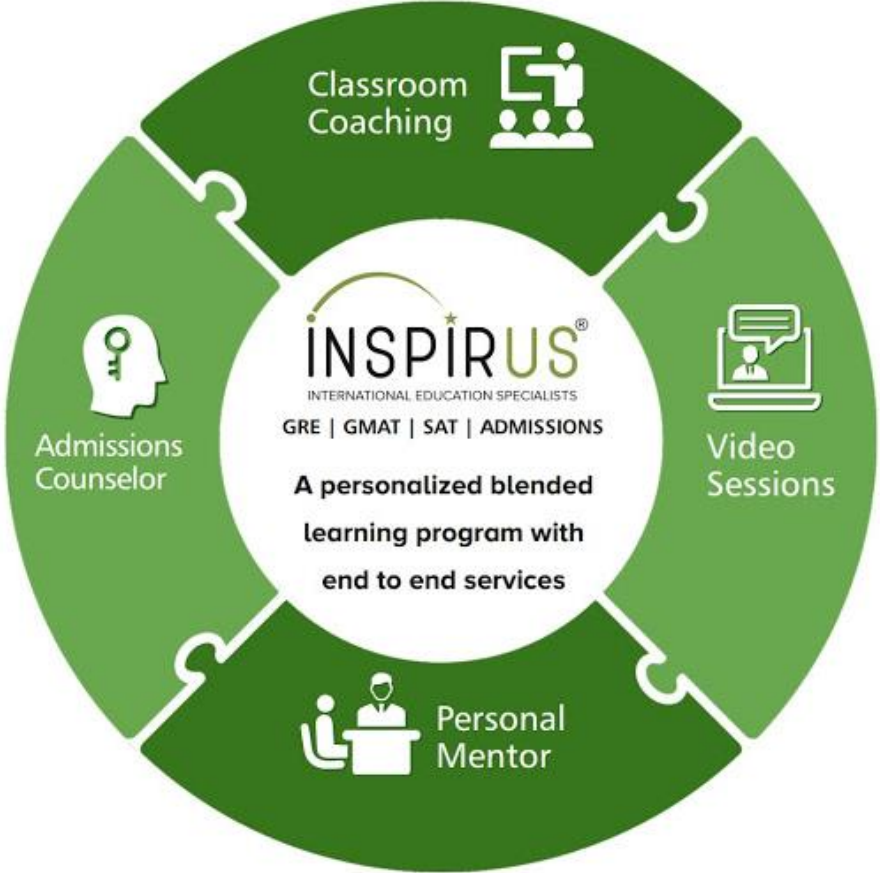
- A. The average person sleeps 7 hours a day.
- B. People with depression have higher mortality than those who are not depressed.
- C. Smoking is less dangerous than drinking.
- D. People with underlying health problems tend to oversleep rather than undersleep.





# VR Practice 18

## Fat Chance



Supermarket shelves are full of oils of various provenances. But do you know which ones are best to cook with? Obvious, isn't it?! Vegetable fats are good and animal fats are bad. Well, you may need to think again. There are three main types of fat: monounsaturated, polyunsaturated and saturated. When fats and oils are exposed to temperatures close to 180 °C, they undergo an oxidation process, which leads to the formation of aldehydes and lipid peroxides. The same happens at room temperature, albeit far more slowly, leading to lipids going rancid. It so happens that consuming aldehydes, even at small doses, is linked to an increase in the risk of heart disease and cancer.

Corn oil and sunflower oil are rich in polyunsaturates and therefore generate substantial levels of aldehydes when heated, at a level 20 times higher than recommended by the World Health Organization (WHO).

Butter, goose fat, olive oil and cold-pressed rapeseed oil produce far fewer aldehydes because they are richer in monounsaturated and saturated fatty acids, which makes them more stable when heated. In fact, saturated fats hardly undergo this oxidation reaction at all. When it comes to cooking, it doesn't matter whether the olive oil is extra virgin or not; the antioxidant levels present in the extra-virgin products are insufficient to protect us against heat-induced oxidation.

We have known for a while that saturated fat may, after all, not be so bad. Previously scientists had examined the links between eating saturated fat, such as butter, and heart disease. Despite looking at the results of nearly 80 studies involving more than half a million people, they were unable to find convincing evidence that eating saturated fats leads to greater risk of heart disease. One prominent cardiologist was quoted as saying: "Saturated fat makes you less hungry. There is certainly a strong argument that an over-reliance in public health on saturated fat as the main dietary villain for cardiovascular disease has distracted from the risks posed by other nutrients, such as carbohydrates (e.g. bread, potatoes, pasta), which people started to consume in larger quantities to compensate for a lower intake in saturated fats. A high consumption of carbohydrates is associated with changes linked to diabetes and heart disease."

## PRACTICE QUESTIONS

**Q18.1** Which of these statements can be concluded from the passage?

- A. Aldehydes form at a temperature of 180 °C.
- B. Rancid oil does not contain aldehydes.
- C. Heated saturated fats contain high levels of aldehydes.
- D. Aldehydes tend to be generated from polyunsaturated fats.

**Q18.2** Which one of the following oils would the author most likely conclude is not good for use in a cold salad dressing?

- A. Sunflower oil.
- B. Extra-virgin olive oil.
- C. Rapeseed oil.
- D. None of the above.

**Q18.3** Which of these statements cannot be concluded from the passage?

- A. Butter is healthier when heated up than when cold.
- B. Hot butter is healthier than hot sunflower oil.
- C. Cold butter is healthy to eat in small quantities.
- D. Eating butter makes you less likely to eat other potentially unhealthy foods.



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**Q18.4** Which of these statements is the author most likely to agree with?

- A. Potatoes fried in goose fat cannot cause heart disease.
- B. The public was misled about the dangers of saturated fats.
- C. Pasta with extra-virgin olive oil is healthier than pasta alone
- D. At room temperature, olive oil goes rancid more quickly than sunflower oil.

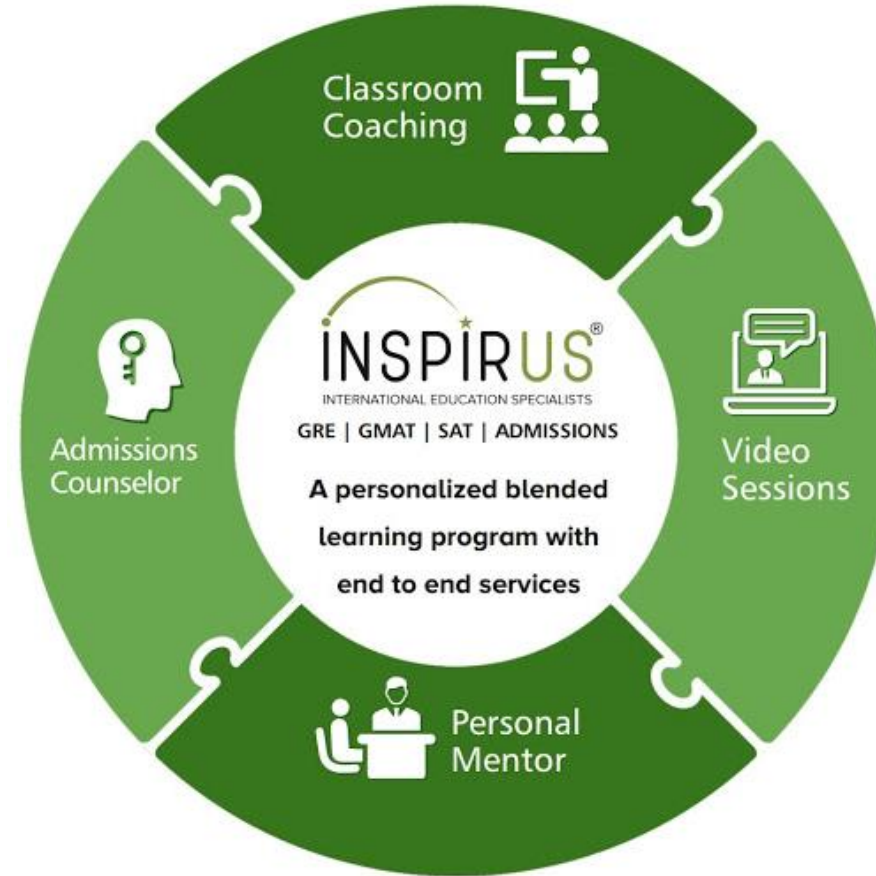
**Q18.5** Which of the following options best ranks the three types of fat in increasing level of oxidation when heated?

- A. Polyunsaturated < Monounsaturated < Saturated.
- B. Saturated < Monounsaturated < Polyunsaturated.
- C. Monounsaturated < Polyunsaturated < Saturated.
- D. Saturated < Polyunsaturated < Monounsaturated.



# VR Practice 19

## Snooping



Some of the most popular messaging services in the world, such as WhatsApp, Skype or Apple's iMessage, could soon be banned by the British government because the encryption methods they use are not accessible by the security services.

Concerns were earlier expressed by both the UK and the US governments, alleging that such services could make it easier for terrorists to communicate without the fear of seeing their communications intercepted. The Prime Minister said: "In our country, do we want to allow a means of communication between people which, even in extremis, with a signed warrant from the Home Secretary personally, we cannot read?" His answer was no.

The Prime Minister hinted that he wanted corporations such as Facebook, Apple or Microsoft to stop using such applications completely or provide a backdoor to their encryption.

But take a look at Apple's privacy policy and you will see what the problem is: "Apple has no way to decrypt iMessage and FaceTime data when it's in transit between devices. So unlike some other companies' messaging services, Apple doesn't scan your communications, and we wouldn't be able to comply with a wiretap even if we wanted to."

Some of the CEOs of the companies targeted have expressed concerns that tampering with encryption would only help criminals and would threaten the security of consumers who rely on it for services such as online banking.

What is also clear is that advanced encryption is an important part of the security offered by such applications and it is hard to see how those American companies could offer a different product in the UK from what they offer everywhere else in the world.

## PRACTICE QUESTIONS

**Q19.1** Assuming all the information contained in the passage is correct, which of the following assertions can be concluded from the text?

- A. Messages can sometimes be too securely encrypted to be read by the person receiving them.
- B. The UK version of iMessage could become less secure than the version of iMessage sold in many other countries.
- C. Only messages originating from the UK or the US have a highly secure level of encryption.
- D. No warrant is required to intercept Skype communications.

**Q19.2** Which of the following can be concluded from the passage?

- A. Should Apple decide to continue providing iMessage, it may have no choice but to break the law.
- B. If Apple scanned communications, it could decipher encrypted communications in transit.
- C. Communications made via Skype are monitored.
- D. A warrant signed by the Home Secretary is essential to intercept communications.



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**Q19.3** According to the passage, the biggest risk is that:

- A. Customers may receive undecipherable messages.
- B. Terrorists may intercept customers' personal messages.
- C. Terrorists may communicate without being caught.
- D. The state is unable to monitor terrorists' bank accounts.

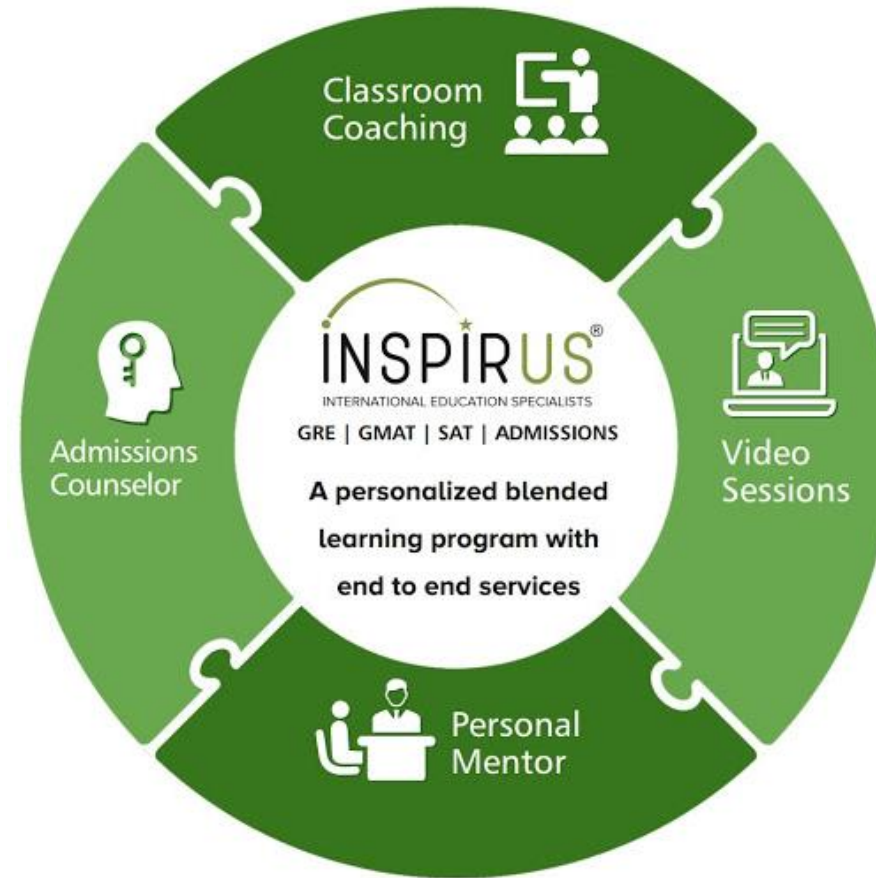
**Q19.4** Which of the following is the author most likely to conclude from the passage?

- A. A ban on messaging services would be unenforceable.
- B. Skype and iMessage use the same type of encryption.
- C. The government's preferred option is to obtain a backdoor into the encryption.
- D. If the UK government imposed that it should be granted backdoor access, the software companies may no longer wish to make their systems available in the UK.



# VR Practice 20

## Breaking The Sound Barrier



Travelling at 4.5 times the speed of sound on a commercial airliner is something that we may all live to experience. Two companies of the Airbus group, Astrium and EADS, have registered a patent with the US Patent Office for a project called “Ultra-rapid air vehicle and method of aerial locomotion”. The future plane, if it sees the light of day, would be much faster than Concorde (which flew the distance between London and New York in 3 hours and was retired in 2003). It would link London to New York in 1 hour (as opposed to seven to eight currently) and Paris to Los Angeles in three hours. This project was unveiled in a YouTube video by Deepak Gupta, founder of the India-based intellectual property drafting service Patent Yogi and a man with a passion for aeroplanes who, according to the newspaper *Les Echos*, “spends all his time on YouTube trying to find licences and patents which have been deposited”.

Equipped with a single triangular wing, the plane would carry 20 passengers for distances of about 5,500 miles (Concorde could carry up to 120 passengers). A rocket engine would propel the plane on a near-vertical ascent to an altitude of 20 miles. Two statojets would then catapult the plane at supersonic speed on a horizontal trajectory. The aircraft would then cruise on the edge of space, high above conventional aircrafts, before slowing down and entering normal air traffic close to its destination.

The patent filed recognises the issue of supersonic aircrafts making sonic booms as they break the sound barrier. This boom is seen as one of the main reasons Concorde was not a commercial success, with noise complaints leading to it being banned from operating at high speed over land by many countries, negating the main attraction of travelling on the jet. Details are limited on how the supersonic bang would be reduced, but the height at which the new aircraft would fly and the “narrow” angle of the supersonic shock wave coming off its nose would help reduce it because it has a longer distance to dissipate before it reaches the ground.

If you're eager to give it a try, don't get too excited yet. Airbus files for hundreds of patents a year, many of them weird. Last summer, it filed a patent for bicycle-style seats on planes that would make it possible to cram more passengers in the same amount of space. And last autumn, it patented an aircraft cabin shaped like a giant flying saucer.

## PRACTICE QUESTIONS

**Q20.1** Which of the following statements can be deduced about Deepak Gupta from the passage?

- A. He is a patents and trademarks lawyer/attorney.
- B. He is a plane spotter.
- C. Airbus is one of his clients.
- D. None of the above.

**Q20.2** Which of the following statements can be deduced from the text?

- A. The new plane is not at risk of crashing with normal planes.
- B. Normal aircrafts fly at an altitude below 20 miles.
- C. The new plane is unlikely to ever be built.
- D. The new plane could also fly like a normal plane if needed.





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**Q20.3** If we assume that any plane reaching its destination takes one hour to refuel and be prepared before its next flight, which of the following statements holds true for a London-to-New-York route?

- A. Concorde could carry more passengers in 24 hours than the new plane.
- B. Concorde could carry fewer passengers in 24 hours than the new plane.
- C. Both planes could carry the same number of passengers in 24 hours.
- D. It is not possible to calculate which plane could carry more passengers in 24 hours.

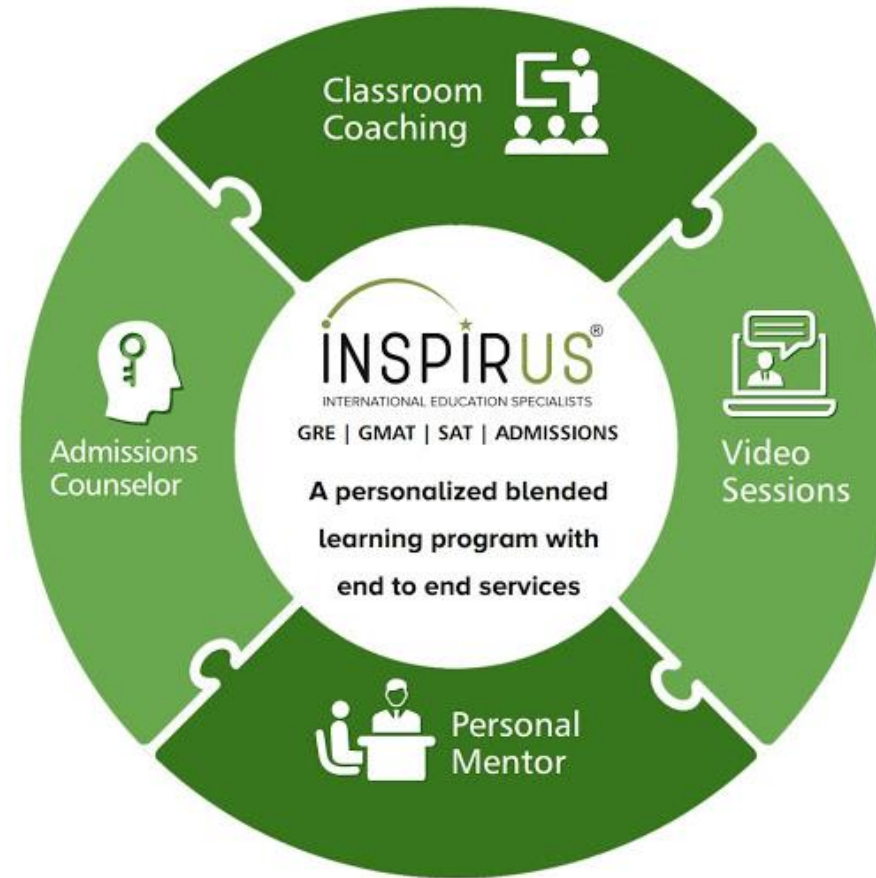
**Q20.4** Which of the following is the author most likely to conclude from the passage?

- A. Concorde could only fly to countries bordering an ocean.
- B. The London-to-New-York Concorde line was not profitable.
- C. The new plane could potentially fly to any destination without risking a ban for excess noise.
- D. Airbus will eventually increase the new plane's capacity by introducing bicycle-style seats.



# VR Practice 21

## Radioactive Waste



Scientists are thinking hard about what the world will look like in 100,000 years' time and how to best to protect our radioactive waste. Many think it should be buried in the ground.

Waste will obviously not just be dumped underground in its raw state. It will be coated with glass, and various other materials, placed in steel and copper canisters, and inserted in concrete tunnels. Clay is effective for geological disposal because it does not allow water or anything leaking from a canister to flow through it. Clay also flexes, helping to dampen shockwaves from earthquakes and protecting the canisters from damage. Rocks such as granite are brittle and crack when they are stressed; and although water cannot travel through granite, it can flow along its cracks. In these rocks, a facility would be located where there were very few cracks and waste canisters would be entirely surrounded by a thick layer of clay called bentonite, which swells when in contact with water. This seals any gaps between the waste and the rock and also cushions the canisters from earthquakes. Incidentally, bentonite is also used to purify wine, cider, beer and vinegar by removing excess protein and to make cat litter. It has laxative properties, acts as a shield against poison ivy, is used as a desiccant (due to its absorption properties) for products at risk from moisture degradation and is being studied for use in battlefield wound dressings.

All that is all very well, but how can we make sure that those who live here in 100,000 years' time understand what we did? Whether we write things on paper (which is highly degradable) or on computers (which version of Microsoft Windows will we be on by then!?), keeping information accessible and available for that long is a hard task. Some proposed to mark each sealed disposal site with monoliths inscribed in the six official UN languages, e.g. English, but will people be able to decipher them then? If we can't understand the significance of 5,000-year-old pyramids, how will someone who discovers a radioactive concrete sarcophagus in 50,000 years' time make sense of it and know how to handle its danger? The Scandinavians have tried to come up with landscapes which "make you feel this is a bad and inhospitable place", a bit like in the Edvard Munch painting *The Scream*. But whatever solution is right, it will only need to be implemented when the sites are sealed, in just over a century.

## PRACTICE QUESTIONS

**Q21.1** Out of those four materials, which one will be furthest away from the radioactive waste?

- A. Glass.
- B. Clay.
- C. Granite.
- D. Copper.

**Q21.2** Which of the following is the author most likely to agree with?

- A. Munch's *The Scream* depicts a nuclear apocalypse.
- B. No element remains radioactive for over 100,000 years.
- C. Kitchen sinks can be made out of granite.
- D. The canisters are designed to last over 100,000 years.

**Q21.3** Which of these options is the least likely use for bentonite?

- A. Sealing the floor of landfills to prevent underground water contamination.
- B. Keeping boxes containing moisture-sensitive objects dry.
- C. Anti-diarrhoea treatment.
- D. Increasing water retention in soils to increase agricultural yields.



Scientists are thinking hard about what the world will look like in 100,000 years' time and how to best to protect our radioactive waste. Many think it should be buried in the ground.

Waste will obviously not just be dumped underground in its raw state. It will be coated with glass, and various other materials, placed in steel and copper canisters, and inserted in concrete tunnels. Clay is effective for geological disposal because it does not allow water or anything leaking from a canister to flow through it. Clay also flexes, helping to dampen shockwaves from earthquakes and protecting the canisters from damage. Rocks such as granite are brittle and crack when they are stressed; and although water cannot travel through granite, it can flow along its cracks. In these rocks, a facility would be located where there were very few cracks and waste canisters would be entirely surrounded by a thick layer of clay called bentonite, which swells when in contact with water. This seals any gaps between the waste and the rock and also cushions the canisters from earthquakes. Incidentally, bentonite is also used to purify wine, cider, beer and vinegar by removing excess protein and to make cat litter. It has laxative properties, acts as a shield against poison ivy, is used as a desiccant (due to its absorption properties) for products at risk from moisture degradation and is being studied for use in battlefield wound dressings.

All that is all very well, but how can we make sure that those who live here in 100,000 years' time understand what we did? Whether we write things on paper (which is highly degradable) or on computers (which version of Microsoft Windows will we be on by then!?), keeping information accessible and available for that long is a hard task. Some proposed to mark each sealed disposal site with monoliths inscribed in the six official UN languages, e.g. English, but will people be able to decipher them then? If we can't understand the significance of 5,000-year-old pyramids, how will someone who discovers a radioactive concrete sarcophagus in 50,000 years' time make sense of it and know how to handle its danger? The Scandinavians have tried to come up with landscapes which "make you feel this is a bad and inhospitable place", a bit like in the Edvard Munch painting *The Scream*. But whatever solution is right, it will only need to be implemented when the sites are sealed, in just over a century.

**Q21.4** Which of the following is the author most likely to agree is not an intended purpose for bentonite in the context of nuclear waste disposal?

- A. Protect the canisters during earthquakes.
- B. Protect the canisters from damage by external substances.
- C. Stop the granite from cracking during earthquakes.
- D. Contain any material leaking from the canisters.

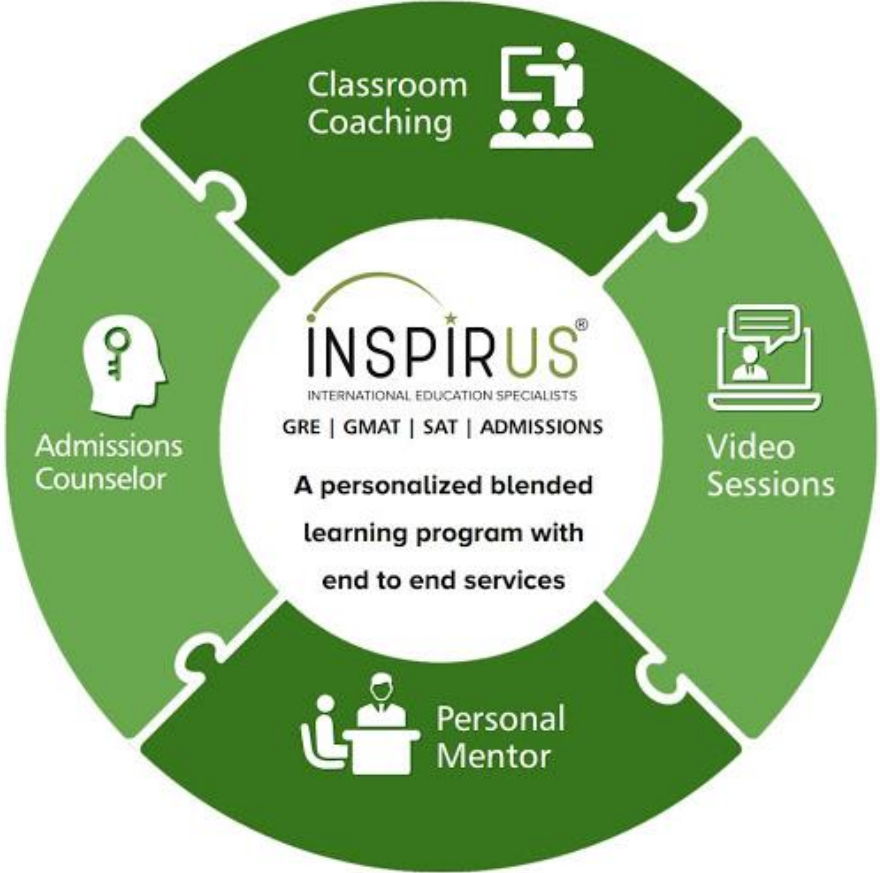
**Q21.5** Which of the following is the author most likely to disagree with in relation to warning future generations?

- A. Books and computers are not a viable solution.
- B. In 100,000 years, no one will speak English.
- C. In 100,000 years, humanity will have self-destructed.
- D. We still have much to learn about the pyramids.



# VR Practice 23

## Microwaves



Microwaves are the best known and the most useful waves. Amongst their use, you will of course find the microwave oven, but also Wi-Fi, mobile phones and GPS. Their wavelength ranges from 1 millimetre (300 GHz frequency) to 1 metre (0.3 GHz), frequency and wavelength being inversely proportionate. Beyond that, as frequency decreases, you will find FM radio waves and then long waves.

Microwave ovens and Wi-Fi work at the same frequency of 2.4 GHz (12.5 cm wavelength); the difference lies in the nature of the wave produced. The oven behaves like a cavity that creates a stationary wave, exciting the water molecules present in the food and causing a rise in temperature. Wi-Fi, however, only sends impulses containing bundles of information. Mobile phones work on the same principle but with frequencies of 0.8 GHz, 1.8 GHz and 2.6 GHz.

There is an urban legend that a microwave oven can help calculate the speed of light. This is not entirely stupid. We know that the velocity of a wave is calculated as the product of its frequency and its wavelength. Place on a plate some chocolate, marshmallows or grated cheese and switch the microwave oven on. Quickly some melted zones and non-melted zones will appear as a result of the non-homogeneous heating taking place inside (and that is why the plate inside the microwave usually turns, thus resolving the issue). The microwaves inside the oven are like guitar strings. They vibrate but they are forced to be stationary at their two fixation points (i.e. the walls). Between the two, one observes areas of large amplitude (i.e. where the intensity is maximal) and areas where the strings seem stationary (i.e. where the intensity is nil). In the areas of high amplitude, chocolate and cheese melt. The distance between two melting zones is a good indicator of half of the wavelength. Multiplying the wavelength by the frequency should therefore give us the speed of light. Easy!

Not quite, warns Professor J.M. Courty. Though he agrees that the principle is correct, he states that waves found in an oven are more complex than a guitar string because of the irregularities in the oven walls, the presence of a fan, electrical resistance and other factors. The hot spots are not evenly spread, making it impossible to calculate the wavelength.

**Q23.1** Which of these statements can be concluded from the text?

- A. Microwaves are safe for humans.
- B. You can cook food with a Wi-Fi device.
- C. Microwaves travel at the speed of light.
- D. Microwaves can escape from a microwave oven.

**Q23.2** Which of these statements can be concluded from the text?

- A. FM waves have a shorter wavelength than mobile phone signals.
- B. Mobile phones emit continuous waves.
- C. FM waves have a higher frequency than long waves.
- D. Microwave ovens emit waves with a shorter wavelength than mobile phones.



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**Q23.3** Which of the following statements would the author be less likely to agree with?

- A. If a microwave oven's melting zones were equally spread, they would be 6.25 cm apart.
- B. Microwave ovens are suitable for melting cheese.
- C. Microwave ovens with non-rotating plates are less effective.
- D. The distance between melting zones is the same across all microwave ovens.

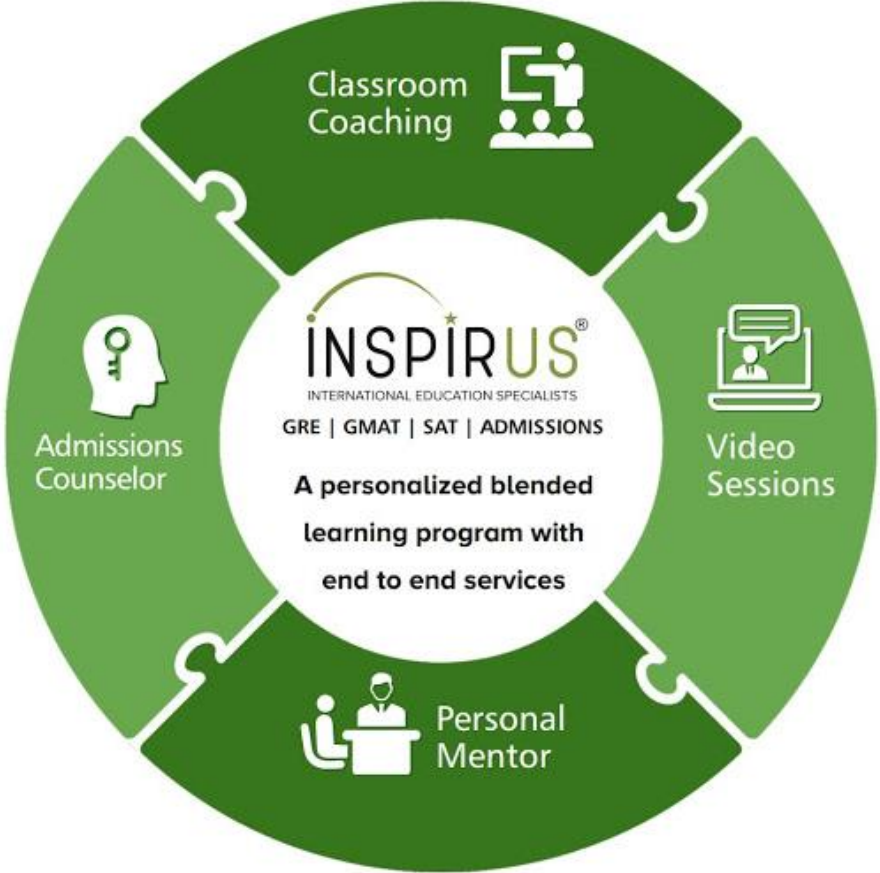
**Q23.4** Which of the following statements would the author most likely disagree with?

- A. All microwave ovens use waves at the same frequency.
- B. To calculate the speed of light using a microwave oven, one would need to use an oven without a rotating plate.
- C. Microwave ovens with rotating plates use rotating waves and not waves with two fixation points.
- D. Stirring food in the middle of the microwaving process would make the food heat up more homogeneously.



# VR Practice 25

## Forest Fire





The scientists could barely believe their eyes. More than 20,000 hectares of forest were charred but, in the middle of the devastation, a group of cypresses was still standing tall and green. When a fire swept through an experimental plot in Andilla, in the Spanish province of Valencia in 2012, it gave researchers a perfect opportunity. The plot was part of a European-Union-financed project set up to test the resistance of over 50 varieties of Mediterranean cypress to a pathogenic fungus. After the 2012 fire, it also provided anecdotal evidence of the peculiar resilience of the species in the face of fire. Indeed, all the common oaks, holm oaks, pines and juniper had completely burnt but only 1.3% of the cypresses had ignited. The Valencia fire led to a three-year study to find the reasons behind the resilience of the species and discover if it could provide buffer zones to hinder or prevent the rapid spread of wildfires.

In the past, this species was not studied in-depth or only a few parameters were measured. Furthermore, using different techniques, the results of flammability tests in vegetation can be different or even contradictory. A crucial difference of the new tests is that they were performed not only on dead dry samples but also on live fine twigs with leaves taken from different crown heights, which revealed one of the key traits of the species: its high water content. Tests revealed that the Mediterranean cypress, because of the particular structure of its leaves, is able to maintain a high water content even in situations of extreme heat and drought, and this is a very favourable starting point concerning fire risk. The litter on the forest floor, made up of small fragments of leaves, also forms an intricate and compact layer and is slow to decompose. The thick and dense litter layer acts as a 'sponge' and retains water, and the space for air circulation is reduced.

According to scientists, the species has a great plasticity in terms of soil, climate and altitude. It can grow in all soils, even degraded ones, apart from those that are water-logged, and it thrives from sea level to altitudes of more than 2,000 metres. The species has been introduced in Latin America and could grow without problems in the temperate climate of California, Chile or Argentina.

## **PRACTICE QUESTIONS**

**Q25.1** Which of the following would best protect a house from fires?

- A. Building its walls with Mediterranean cypress wood.
- B. Encircling the house with rows of Mediterranean cypress.
- C. Encircling the house with a mix of cypresses and oaks.
- D. Planting juniper bushes all around the house.

**Q25.2** Which of the following is least likely to contribute to fires?

- A. Large dead leaves on the forest floor.
- B. Fast-decomposing leaves.
- C. Compact forest floors.
- D. High winds.

**Q25.3** Which of the following statements about the fire resistance of Mediterranean cypresses cannot be deduced from the text?

- A. It requires live cypresses.
- B. It was discovered by chance.
- C. It is only effective if the cypresses are planted in groups.
- D. It was proven through a European-Union-funded study.



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**Q25.4** Which of the following is not a suitable planting ground for Mediterranean cypresses?

- A. In drought-prone areas.
- B. In marshes.
- C. At high altitude.
- D. Near common oaks.

**Q25.5** Which of the following statements can be deduced from the text?

- A. The presence of fungus on cypresses slows fire.
- B. Previous tests had only been performed with dead material.
- C. Oak leaves decompose fast.
- D. Before 2012, the flammability resistance of cypresses was well known but never studied.





*Thank you*