### ****READING PASSAGE 1****

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

## ****Bringing cinnamon to Europe****

Cinnamon is a sweet, fragrant spice produced from the inner bark of trees of the genus Cinnamomum, which is native to the Indian sub-continent [(1).](https://drive.google.com/file/d/1szwZhyaOMH8yw82vvqGLDOfUadMAQPor/view?usp=sharing) It was known in biblical times, and is mentioned in several books of the Bible, both as an ingredient that was mixed with oils for anointing people’s bodies, and also as a token indicating friendship among lovers and friends ([3](https://drive.google.com/file/d/1py2iQhqncEhdGXActQx_S9GpxpdRR8UX/view?usp=sharing)). In ancient Rome, mourners attending funerals burnt cinnamon to create a pleasant scent ([4](https://drive.google.com/file/d/10XbW_PDOzNxOzv5QZpivVwnxi2oonsfk/view?usp=sharing)). Most often, however, the spice found its primary use as an additive to food and drink. In the Middle Ages, Europeans who could afford the spice used it to flavor food, particularly meat, and to impress those around them with their ability to purchase an expensive condiment from the ‘exotic’ East. At a banquet, a host would offer guests a plate with various spices piled upon it as a sign of the wealth at his or her disposal ([5](https://drive.google.com/file/d/140AvE86zzrwJ4VX2iBgUvpOTQvElwIjo/view?usp=sharing)). Cinnamon was also reported to have health benefits, and was thought to cure various ailments, such as indigestion ([6](https://drive.google.com/file/d/1ITMnm8zyTvVBt4mCoPkwjwayNU1PY8Uh/view?usp=sharing)).

Toward the end of the Middle Ages, the ~~European~~ middle classes began to desire the lifestyle of the elite, including their consumption of spices. This led to a growth in demand for cinnamon and other spices. At that time, cinnamon was transported by Arab merchants, who closely guarded the secret of the source of the spice from potential rivals ([7](https://drive.google.com/file/d/1f4UncoAygWtOZ_1cEouZf2OhrmypZCBj/view?usp=sharing)). They took it from India, where it was grown, on camels via an overland route to the Mediterranean. Their journey ended when they reached Alexandria. European traders sailed there to purchase their supply of cinnamon, then brought it back to Venice. The spice then travelled from that great trading city to markets all around Europe. Because the overland trade route allowed for only small quantities of the spice to reach Europe, and because Venice had a virtual monopoly of the trade, the Venetians could set the price of cinnamon exorbitantly high ([8](https://drive.google.com/file/d/1PyPA4zSIhL0PwcQO-KQSulY5gcPcN7sr/view?usp=sharing)+[9](https://drive.google.com/file/d/1UCR2h4bSjmJyb2nd32G_V_OngogPbwdd/view?usp=sharing)). These prices, coupled with the increasing demand, spurred the search for new routes to Asia by Europeans eager to take part in the spice trade ([10](https://drive.google.com/file/d/1Cd1gAcGtKO-WVkyeMnyBKGjg5eUZmTR6/view?usp=sharing)).

Seeking the high profits promised by the cinnamon market, Portuguese traders arrived on the island of Ceylon in the Indian Ocean toward the end of the 15th century. Before Europeans arrived on the island, the state had organized the cultivation of cinnamon ([11](https://drive.google.com/file/d/18X0sw-gDl0ayoswZupO4BUm0Zm06yfm8/view?usp=sharing)). People belonging to the ethnic group called the Salagama would peel the bark off young shoots of the cinnamon plant in the rainy season, when the wet bark was more pliable([12](https://drive.google.com/file/d/17InTvCMe25pLx_W4VfsugSgz0NnyB7X_/view?usp=sharing)). During the peeling process, they curled the bark into the ‘stick’ shape still associated with the spice today. The Salagama then gave the finished product to the king as a form of tribute. When the Portuguese arrived, they needed to increase production significantly, and so enslaved many other members of the Ceylonese native population, forcing them to work in cinnamon harvesting ([13](https://drive.google.com/file/d/1-mnYbEnObJPB5vFXSrn623WFqMLJe6tE/view?usp=sharing)). In 1518, the Portuguese built a fort on Ceylon, which enabled them to protect the island, so helping them to develop a monopoly in the cinnamon trade and generate very high profits. In the late 16th century, for example, they enjoyed a tenfold profit when shipping cinnamon over a journey of eight days from Ceylon to India.

When the Dutch arrived off the coast of southern Asia at the very beginning of the 17th century, theY set their sights on displacing the Portuguese as kings of cinnamon. The Dutch allied themselves with Kandy, an inland kingdom on Ceylon. In return for payments of elephants and cinnamon, they protected the native king from the Portuguese ([14](https://drive.google.com/file/d/17tkNuiJ3feNsHKbYaQRJqxoJUKBVEosA/view?usp=sharing)). By 1649, the Dutch broke the 150-year Portuguese monopoly when they overran and occupied their factories. By 1658, they had permanently expelled the Portuguese from the island, thereby gaining control of the lucrative cinnamon trade ([15](https://drive.google.com/file/d/1qOf1L6rfmVB2KUFek1R3Z4pPEx9xS8rD/view?usp=sharing)).

In order to protect their hold on the market, the Dutch, like the Portuguese before them, treated the native inhabitants harshly. Because of the need to boost production and satisfy Europe’s ever-increasing appetite for cinnamon, the Dutch began to alter the harvesting practices of the Ceylonese ([16](https://drive.google.com/file/d/1KlXuubOWw63_j2gwmDFTyaIgENkb06fS/view?usp=sharing)). Over time, the supply of cinnamon trees on the island became nearly exhausted, due to systematic stripping of the bark. Eventually, the Dutch began cultivating their own cinnamon trees to supplement the diminishing number of wild trees available for use ([17)](https://drive.google.com/file/d/1JUdubt3TRCa_oRrkFrPA9RZ4dk_CIbA8/view?usp=sharing).

Then, in 1996, the English arrived on Ceylon, thereby displacing the Dutch from their control of the cinnamon monopoly. By the middle of the 19th century, production of cinnamon reached 1,000 tons a year, after a lower grade quality of the spice became acceptable to European tastes. By that time, cinnamon was being grown in other parts of the Indian Ocean region and in the West Indies, Brazil, and Guyana. Not only was a monopoly of cinnamon becoming impossible, but the spice trade overall was diminishing in economic potential, and was eventually superseded by the rise of trade in coffee, tea, chocolate, and sugar ([18](https://drive.google.com/file/d/1VqPIPl5yYfrWo23kIkQO0hE8iHae4liY/view?usp=sharing)).

#### ****Questions 1-9****

Complete the notes below.  
Choose **ONE WORD ONLY** from the passage for each answer.

Write your answers in boxes ***1-9*** on your answer sheet.

**The Early History of Cinnamon**

|  |  |
| --- | --- |
| **Biblical times:** | added to **1**………………………..  used to show **2**…………………………. Between people |
| **Ancient Rome:** | used for its sweet smell at **3**……………………….. |
| **Middle Ages:** | added to food, especially meat  was an indication of a person’s **4**………………………..  known as a treatment for **5**……………………….. and other health problems  grown in **6**……………………….  merchants used **7**……………………… to bring it to the Mediterranean  arrived in the Mediterranean at **8**……………………………  traders took it to **9**……………………………. and sold it to destinations around Europe. |

#### ****Questions 10-13****

Do the following statements agree with the information given in Reading Passage 1?

In boxes ***10-13*** 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

**10**   The Portuguese had control over the cinnamon trade in Ceylon throughout the 16th century.

**11**  The Dutch took over the cinnamon trade from the Portuguese as soon as they arrived in Ceylon.

**12**   The trees planted by the Dutch produced larger quantities of cinnamon than the wild trees.

**13**   The spice trade maintained its economic importance during the 19th century.

READING PASSAGE 3:

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

**Artificial artist?**

*Can computers really create works of art?*

The Painting Fool is one of a growing number of computer programs which, so their makers claim, possess creative talents. Classical music by an artificial composer has had audiences enraptured, and even tricked them into believing a human was behind the score **(**[**1**](https://drive.google.com/file/d/1uDS-j4DbCG8mImgwqgoRvmUKRLVGPR-J/view?usp=sharing) **+** [**2**](https://drive.google.com/file/d/1-8ksGtG48rZBabi1X6Uv9ONFPYHiwV0q/view?usp=sharing)**).** Artworks painted by a robot have sold for thousands of dollars and been hung in prestigious galleries. And software has been built which creates are that could not have been imagined by the programmer.

Human beings are the only species to perform sophisticated creative acts regularly [(3](https://drive.google.com/file/d/1KErmbOQCwR2qfenrdT3urTHTrgut4Xdx/view?usp=sharing)). If we can break this process down into computer code, where does that leave human creativity? ‘This is a question at the very core of humanity ,’ says Geraint Wiggins, a computational creativity researcher at Goldsmiths, University of London. ‘It scares a lot of people. They are worried that it is taking something special away from what it means to be human .’

To some extent, we are all familiar with computerised art. The question is: where does the work of the artist stop and the creativity of the computer begin? Consider one of the oldest machine artists, Aaron, a robot that has had paintings exhibited in London’s Tate Modern and the San Francisco Museum of Modern Art. Aaron can pick up a paintbrush and paint on canvas on its own. Impressive perhaps, but it is still little more than a tool to realise the programmer’s own creative ideas.

Simon Colton, the designer of the Painting Fool, is keen to make sure his creation doesn’t attract the same criticism. Unlike earlier ‘artists’ such as Aaron, the Painting Fool only needs minimal direction and can come up with its own concepts by going online for material ([6](https://drive.google.com/file/d/1--qY5PcToVgWyhT-_LVZFUTeo6VyUgBU/view?usp=sharing)). The software runs its own web searches and trawls through social media sites. It is now beginning to display a kind of imagination too, creating pictures from scratch. One of its original works is a series of fuzzy landscapes, depicting trees and sky. While some might say they have a mechanical look, Colton argues that such reactions arise from people’s double standards towards software-produced and human-produced art ([7](https://drive.google.com/file/d/1XS4NWIHQ58LQWJ4b90ZOOmxSQj29Jm2j/view?usp=sharing)+[8](https://drive.google.com/file/d/1N0w3xkI5tztNqRUvqQD3EE2Bpaf_1tkH/view?usp=sharing)). After all, he says, consider that the Painting Fool painted the landscapes without referring to a photo. ‘If a child painted a new scene from its head, you’d say it has a certain level of imagination,’ he points out. ‘The same should be true of a machine.’ Software bugs can also lead to unexpected results. Some of the Painting Fool’s paintings of a chair came out in black and white, thanks to a technical glitch. This gives the work an eerie, ghostlike quality. Human artists like the renowned Ellsworth Kelly are lauded for limiting their colour palette – so why should computers be any different?

Researchers like Colton don’t believe it is right to measure machine creativity directly to that of humans who ‘have had millennia to develop our skills’. Others, though, are fascinated by the prospect that a computer might create something as original and subtle as our best artists ([9)](https://drive.google.com/file/d/1fXHRQv3vp11Yyu3Gsug3uHPdegX4oUaa/view?usp=sharing). So far, only one has come close. Composer David Cope invented a program called Experiments in Musical Intelligence, or EMI. Not only did EMI create compositions in Cope’s style, but also that of the most revered classical composers, including Bach, Chopin and Mozart. Audiences were moved to tears, and EMI even fooled classical music experts into thinking they were hearing genuine Bach ([10](https://drive.google.com/file/d/1eNDG8f7qutNkM-R_COSGgs_dlxWRJbAZ/view?usp=sharing)). Not everyone was impressed however. Some, such as Wiggins, have blasted Cope’s work as pseudoscience, and condemned him for his deliberately vague explanation of how the software worked ([11](https://drive.google.com/file/d/1zzavfMmcPcmBJmIZY2QiLNCwuJrVBLhU/view?usp=sharing) + [12](https://drive.google.com/file/d/1osAcaYBn2pdmTiKEVHd8m87YV8vkY5YD/view?usp=sharing) + [13](https://drive.google.com/file/d/1FgaMJO5mbK9pfTcijRAUcUJ0y3jBW-Kf/view?usp=sharing)). Meanwhile, Douglas Hofstadter of Indiana University said EMI created replicas which still rely completely on the original artist’s creative impulses. When audiences found out the truth they were often outraged with Cope, and one music lover even tried to punch him. Amid such controversy, Cope destroyed EMI’s vital databases.

But why did so many people love the music, yet recoil when they discovered how it was composed ([14](https://drive.google.com/file/d/1p1rr-jwmnRfnZbWxylb7EJlcAAyDIJ66/view?usp=sharing) + [15](https://drive.google.com/file/d/1gu611pUVTfi1tNESUv4g-BnsUXMiNf7p/view?usp=sharing))? A study by computer scientist David Moffat of Glasgow Caledonian University provides a clue. He asked both expert musicians and non-experts to assess six compositions. The participants weren’t told beforehand whether the tunes were composed by humans or computers, but were asked to guess, and then rate how much they liked each one ([16](https://drive.google.com/file/d/1UtE47s6mxAZ3BkJo8meOEL49naqxSFsQ/view?usp=sharing)). People who thought the composer was a computer tended to dislike the piece more than those who believed it was human. This was true even among the experts, who might have been expected to be more objective in their analyses.

Where does this prejudice come from? Paul Bloom of Yale University has a suggestion: he reckons part of the pleasure we get from art stems from the creative process behind the work. This can give it an ‘irresistible essence’, says Bloom. Meanwhile, experiments by Justin Kruger of New York University have shown that people’s enjoyment of an artwork increases if they think more time and effort was needed to create it. Similarly, Colton thinks that when people experience art, they wonder what the artist might have been thinking or what the artist is trying to tell them. It seems obvious, therefore, that with computers producing art, this speculation is cut short – there’s nothing to explore. But as technology becomes increasingly complex, finding those greater depths in computer art could become possible. This is precisely why Colton asks the Painting Fool to tap into online social networks for its inspiration: hopefully this way it will choose themes that will already be meaningful to us.

**Questions 27-31**

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

*Write the correct letter in boxes****27-31****on your answer sheet.*

**27**   What is the writer suggesting about computer-produced works in the first paragraph?

**A**   People’s acceptance of them can vary considerably.

**B**   A great deal of progress has already been attained in this field.

**C**   They have had more success in some artistic genres than in others.

**D**   the advances are not as significant as the public believes them to be.

**28**   According to Geraint Wiggins, why are many people worried by computer art?

**A**   It is aesthetically inferior to human art.

**B**   It may ultimately supersede human art.

**C**   It undermines a fundamental human quality.

**D**   It will lead to a deterioration in human ability.

**29**   What is a key difference between Aaron and the Painting Fool?

**A**   its programmer’s background

**B**   public response to its work

**C**   the source of its subject matter

**D**   the technical standard of its output

**30**   What point does Simon Colton make in the fourth paragraph?

**A**   Software-produced art is often dismissed as childish and simplistic.

**B**   The same concepts of creativity should not be applied to all forms of art.

**C**   It is unreasonable to expect a machine to be as imaginative as a human being.

**D**   People tend to judge computer art and human art according to different criteria.

**31**   The writer refers to the paintings of a chair as an example of computer art which

**A**   achieves a particularly striking effect.

**B**   exhibits a certain level of genuine artistic skill.

**C**   closely resembles that of a well-known artist.

**D**   highlights the technical limitations of the software.

**Questions 32-37**

Complete each sentence with the correct ending, **A-G** below.

*Write the correct letter,****A-G****, in boxes****32-37****on your answer sheet.*

**32**   Simon Colton says it is important to consider the long-term view then

**33**   David Cope’s EMI software surprised people by

**34**   Geraint Wiggins criticized Cope for not

**35**   Douglas Hofstadter claimed that EMI was

**36**   Audiences who had listened to EMI’s music became angry after

**37**   The participants in David Moffat’s study had to assess music without

**List of Ideas**

**A**     generating work that was virtually indistinguishable from that of humans.

**B**     knowing whether it was the work of humans or software.

**C**     producing work entirely dependent on the imagination of its creator.

**D**     comparing the artistic achievements of humans and computers.

**E**    revealing the technical details of his program.

**F**    persuading the public to appreciate computer art.

**G**   discovering that it was the product of a computer program

**Questions 38-40**

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

*In boxes****38-40****on your answer sheet, write*

**YES**                  if the statement agrees with the claims of the writer

**NO**                   if the statement contradicts the claims of the writer

**NOT GIVEN**    if it is impossible to say what the writer thinks about this

**38**   Moffat’s research may help explain people’s reactions to EMI.

**39**   The non-experts in Moffat’s study all responded in a predictable way.

**40**   Justin Kruger’s findings cast doubt on Paul Bloom’s theory about people’s prejudice towards computer art.