

Question 1. Michael Faraday was the first person to recognize Perkin's ability as a student of chemistry.

Passage: *As a student at the City of London School, Perkin became immersed in the study of chemistry. His talent and devotion to the subject were perceived by his teacher, Thomas Hall, who encouraged him to attend a series of lectures given by the eminent scientist Michael Faraday at the Royal Institution.*

Question 2. Michael Faraday suggested Perkin should enroll in the Royal College of Chemistry.

Passage: *His talent and devotion to the subject were perceived by his teacher, Thomas Hall, who encouraged him to attend a series of lectures given by the eminent scientist Michael Faraday at the Royal Institution. Those speeches fired the young chemist's enthusiasm further, and he later went on to attend the Royal College of Chemistry, which he succeeded in entering in 1853, at the age of 15.*

Question 3. Perkin employed August Wilhelm Hofmann as his assistant.

Passage: *At the time of Perkin's enrollment, the Royal College of Chemistry was headed by the noted German chemist August Wilhelm Hofmann. Perkin's scientific gifts soon caught Hofmann's attention and within two years, he became Hofmann's youngest assistant.*

Question 4. Perkin was still young when he made the discovery that made him rich and famous.

Passage: *He later went on to attend the Royal College of Chemistry, which he succeeded in entering in 1853, at the age of 15.*

At the time of Perkin's enrollment, the Royal College of Chemistry was headed by the noted German chemist August Wilhelm Hofmann. Perkin's scientific gifts soon caught Hofmann's attention and within two years, he became Hofmann's youngest assistant. Not long after that, Perkin made the scientific breakthrough that would bring him both fame and fortune.

Question 5. The trees from which quinine is derived grow only in South America.

Passage: *At the time, quinine was the only viable medical treatment for malaria. The drug is derived from the bark of the cinchona tree, native to South America. Thus, when Hofmann made some passing comments about the desirability of a synthetic substitute for quinine, it was unsurprising that his star pupil was moved to take up the challenge.*

Question 6. Perkin hoped to manufacture a drug from a coal tar waste product.

Passage: *At the time, quinine was the only viable medical treatment for malaria. The drug is derived from the bark of the cinchona tree, native to South America and by 1856 demand for the drug was surpassing the available supply. Thus, when Hofmann made some passing comments about the desirability of a synthetic substitute for quinine, it was unsurprising that his star pupil was moved to take up the challenge.*

During his vacation in 1856, Perkin spent his time in the laboratory on the top floor of his family's house. He was attempting to manufacture quinine from aniline, an inexpensive and readily available coal tar waste product

Question 7. Perkin was inspired by the discoveries of the famous scientist Louis Pasteur.

Passage: *Luckily, Perkins's scientific training and nature prompted him to investigate the substance further. Incorporating potassium dichromate and alcohol into the aniline at various stages of the experimental process, he finally produced a deep purple solution. And, proving the truth of the famous scientist Louis Pasteur's words 'chance favors only the prepared mind'. Perkin saw the potential of his unexpected find.*

Question 8. Alien civilizations may be able to help the human race to overcome serious problems

Passage: *The mere existence of such a civilization will tell us that long-term survival is possible, and gives us some cause for optimism. It is even possible that the older civilization may pass on the benefits of their experience in*

dealing with threats to survival such as nuclear war and global pollution, and other threats that we haven't yet discovered.

Question 9. SETI scientists are trying to find a life form that resembles humans in many ways.

Passage: *Second, we make a very conservative assumption that we are looking for a life form that is pretty well like us, since if it differs radically from us we may well not recognize it as a life form, quite apart from whatever we are able to communicate with it. In other words, the life form we are looking for may well have two green heads and seven fingers, but it will nevertheless resemble us in that it should communicate with its fellows.*

Question 10. The Americans and Australians have cooperated on joint research projects.

Passage: *It turns out that, for a given amount of transmitted power: radio waves in the frequency range 1000 to 3000 MHz travel the greatest distance, and so all searches to date have concentrated on looking for radio waves in this frequency range. So far there have been a number of searches by various groups around the world, including Australian searches using the radio*

telescope at Parkes, New South Wales. Until now there have not been any detections from the few hundred stars which have been searched.

Question 11. So far SETI scientists have picked up radio signals from several stars.

Passage: *Until now there have not been any detections from the few hundred stars which have been searched. The scale of the searches has been increased dramatically since 1992, when the US Congress voted NASA \$10 million per year for ten years to conduct a thorough search for extraterrestrial life.*

Question 12. The NASA project attracted criticism from some members of Congress.

Passage: *The scale of the searches has increased dramatically since 1992, when the US Congress voted NASA \$10 million per year for ten years to conduct a thorough search for extraterrestrial life. Much of the money in this project is being spent on developing the special hardware needed to search many frequencies at once.*

Question 13. If a signal from outer space is received, it will be important to respond promptly.

Passage: *Everybody agrees that we should not reply immediately. Quite apart from the impracticality of sending a reply over such large distances at short notice, it raises a host of ethical questions that would have to be addressed by the global community before any reply could be sent. Would the human race face culture shock if faced with a superior and much older civilization?*

Question 14. Turtles were among the first group of animals to migrate back to the sea.

Passage: *There is evidence that all modern turtles are descended from a terrestrial ancestor which lived before most of the dinosaurs. There are two key fossils called *Proganochelys quenstedti* and *Palaeochersis talampayensis* dating from early dinosaur times, which appear to be close to the ancestry of all modern turtles and tortoises.*

15. It is always difficult to determine where an animal lived when its fossilized remains are incomplete.

Passage: *You might wonder how we can tell whether fossil animals lived on land or in water, especially if only fragments are found. Sometimes it's obvious. Ichthyosaurs were reptilian contemporaries of the dinosaurs, with fins and streamlined bodies. The fossils look like dolphins and they surely lived like dolphins, in the water. With turtles it is a little less obvious. One way to tell is by measuring the bones of their forelimbs.*

16. The habitat of ichthyosaurs can be determined by the appearance of their fossilized remains.

Passage: *Ichthyosaurs were reptilian contemporaries of the dinosaurs, with fins and streamlined bodies. The fossils look like dolphins and they surely lived like dolphins, in the water.*

