



1. In the *Aeneid*, one of these beings witnesses Achaemenides escaping his clutches with Aeneas. One story says that Apollo strikes down these creatures after his son is killed by Zeus. Some of these creatures, including Brontes and Steropes, forged the lightning bolts which Zeus wields. One member of this race is defeated by a man who claims to be named “nobody,” but is actually Odysseus. That creature from this race is a son of Poseidon named Polyphemus. For 10 points, name this race of ancient Greek giants with one eye.

ANSWER: cyclops [or cyclopes]

052-11-44-08101

2. When this phenomenon occurs at two different angles at once, it is called birefringence. One formula describing it, which can be derived from Fermat’s principle of least time, uses the ratio of the speed of light in a vacuum to that in a medium, this phenomenon’s namesake “index.” The angle of a beam undergoing this phenomenon is related to the angle of incidence by Snell’s law. It explains why objects in water appear to bend at the water’s surface. For 10 points, name this bending of light rays.

ANSWER: refraction

132-11-44-08102

3. Recurring characters in this man's works include Major Cassius de Spain and Colonel Sartoris. A chapter of one work by this man is narrated by Vardaman and consists of the sentence "My mother is a fish." A Harvard student commits suicide in a work by this man that also concerns Benjy's memories of Caddy. For 10 points, name this author who wrote about residents of Yoknapatawpha County like the Bundren and Compson families in *As I Lay Dying* and *The Sound and the Fury*.

ANSWER: William Faulkner

142-11-44-08103

4. Ben Milam captured this location from General Cos. General Sesma mistakenly marched to Goliad instead of to this place where Captain John W. Smith and his reinforcements were killed. One commander of this site drew a line in the dirt to challenge men to stay and defend it. That commander, William Travis, was killed by Santa Anna's forces at this place along with Davie Crockett and Jim Bowie. Sam Houston invoked the name of this mission at the Battle of San Jacinto. For 10 points, name this mission in San Antonio.

ANSWER: Alamo [or Mission San Antonio de Valero]

124-11-44-08104

5. This author portrayed divorce through the eyes of a child in *What Maisie Knew*. One work by this man concerns the title character's relationships with Giovanelli and Winterbourne, and her subsequent death from Roman fever. This author of *Daisy Miller* also created a child who distracts her governess by playing the piano, so that his sister can sneak out to see Miss Jessel. For 10 points, name this author who wrote about Miles and Flora in *The Turn of the Screw*.

ANSWER: Henry James

142-11-44-08105

6. Due to being caught in this mountain range in the winter, members of the Donner Party resorted to cannibalism to survive. The Giant Sequoia, the largest tree in the world, only exists naturally on the western slopes of this mountain range. This mountain range contains the largest alpine lake in North America and Yosemite's Half Dome. For 10 points, name this mountain range which contains Lake Tahoe and the highest point in the contiguous United States, Mount Whitney.

ANSWER: **Sierra Nevadas**

066-11-44-08106

7. In this novel, the asylum patient Renfield devours spiders and flies to gain strength from their lives. The second half of this novel is dominated by a search for fifty boxes of earth. The protagonists of this novel fail to save the sleepwalking Lucy Westenra. In this novel, Dr. Seward, Jonathan Harker, and Abraham van Helsing struggle to save Mina Harker, who was forced to drink the blood of the title character. For 10 points, name this Bram Stoker novel about a Transylvanian vampire.

ANSWER: **Dracula**

080-11-44-08107

8. In one short story by this author, a deaf child wakes up from an afternoon nap to discover the aftermath of the title battle. This author of "Chickamauga" also called love "a temporary insanity curable by marriage." Another work by this author describes a dream of escaping from hanging by swimming down a river experienced by the Confederate sympathizer Peyton Farquhar. For 10 points, name this American author of *The Devil's Dictionary* and "An Occurrence at Owl Creek Bridge."

ANSWER: Ambrose **Bierce**

105-11-44-08108

9. One candidate in this election lost support after his running mate advocated "bomb[ing an enemy] back into the Stone Age." The Republicans capitalized on growing fears to attempt to regain a lost base in this election with the Southern Strategy. The competition for the Democratic nomination in this election was changed by the assassination of Robert Kennedy. For 10 points, name this election in which Hubert Humphrey and George Wallace were defeated by Richard Nixon.

ANSWER: Election of **1968**

105-11-44-08109

10. In a speech delivered at Cooper Union, this man argued the framers of the Constitution would agree with his position that the federal government could halt the spread of slavery in the West. In another speech, he promised war would continue, if God willed it, "until every drop of blood drawn with the lash, shall be paid by another drawn with the sword." That speech was this President's second inaugural address. For 10 points, name this speaker of the Gettysburg Address and sixteenth President.

ANSWER: Abraham **Lincoln**

121-11-44-08110

11. This artist depicted a dancer in a white skirt bending her body backwards in his painting *El Jaleo*. A gigantic vase can be seen in his portrait of the four *Daughters of Edward Darley Boit*, while two girls light Chinese lanterns in his *Carnation, Lily, Lily, Rose*. His most famous work, a portrait of a woman with her hand on a table which caused a scandal at the Paris Salon of 1884, depicts Virginie Gautreau in a black dress. For 10 points, name this painter of *Portrait of Madame X*.

ANSWER: John Singer **Sargent**

040-11-44-08111

12. In one story from this collection, Tom's friends take him on a retreat after he bites off part of his tongue while drunk. In addition to "Grace," it contains a story in which the narrator fails to buy a gift for Mangan's sister at the title bazaar. In another story in this collection, Gretta reveals her old love for Michael Furey to her husband, Gabriel Conroy. Stories in this collection include "Araby" and "The Dead." For 10 points, name this James Joyce collection about the title residents of an Irish city.

ANSWER: Dubliners

080-11-44-08112

13. Max von Laue won the 1912 Physics Nobel Prize for his discovery of the diffraction of this kind of electromagnetic radiation. John Kendrew and Max Perutz studied the three-dimensional structure of proteins using the "crystallography" of this kind of radiation. It has a wavelength slightly longer than that of gamma rays. For 10 points, name this kind of radiation used in CT scans and other medical imaging techniques, such as those used to image the chest.

ANSWER: X rays [or X radiation; or Roentgen radiation]

003-11-44-08113

14. In one work by this man, the protagonist paints the title character's mother without knowing who it is. Earlier in that work, the title character tells the protagonist that they share the mark of Cain. Besides *Demian*, this man wrote a novel that takes place in Castalia, in which Joseph Knecht becomes the Magister Ludi. Another of this author's title characters meets Kamala and Kamaswami before being reunited with Govinda, a follower of Buddha. For 10 points, name this German novelist of *Siddhartha*.

ANSWER: Hermann Hesse

142-11-44-08114

15. This country's southeastern corner contains an autonomous Jewish district, less than two percent of whose residents are Jewish. Its easternmost point is located on the uninhabited Big Diomedes Island. Its highest point, located in the Caucasus Mountains, is Mount Elbrus. This country contains an archipelago to the west of the Kara Sea known as Novaya Zemlya, as well as most of the length of the Ural Mountains. For 10 points, name this largest country in the world by area, which has its capital at Moscow.

ANSWER: Russia

132-11-44-08115



1A. Dr. Elizabeth Shannon and her husband Jim are the two main characters of what television show in which a colony run by Commander Taylor interacts with dinosaurs?

ANSWER: Terra Nova

1B. What feathered serpent Mesoamerican deity is the rival of his brother, the smoking mirror deity Tezcatlipoca?

ANSWER: Quetzalcoatl

2A. Young's modulus is the ratio of what quantity, the measure of a force acting on a body, divided by strain?

ANSWER: stress

2B. Which biblical figure's namesake book is read on Purim and tells of such characters as Mordechai and Haman?

ANSWER: Esther

3A. This is a 10-second computation question. What is the perimeter of a circle with area 9π square units? Express your answer in terms of π .

ANSWER: 6π units

3B. This is a 10-second calculation question. What is the greatest common factor of 72, 108 and 39?

ANSWER: 3

4A. During what event did protestors burn down a campus ROTC building during demonstrations that ended with four students being killed by the Ohio National Guard?

ANSWER: Kent State shootings

4B. Named after a medieval French city, in which game do players place tiles to form cities, roads, coisters, and fields, employing their followers in such roles as thieves, knights, and farmers to earn points?

ANSWER: Carcassonne

5A. A nine-point circle is associated with what type of polygon whose namesake inequality places conditions on the lengths of its sides?

ANSWER: triangle

5B. What poetic form consisting of fourteen lines is commonly divided into the Shakespearean and Petrarchan varieties?

ANSWER: sonnet

6A. This is a 20-second computation question. If 62 divided by x gives a remainder of 6 and 87 divided by x gives a remainder of 7, what is x ?

ANSWER: 8

6B. This is a 20-second computation question. Find the square of the cosine of 15 degrees. Express your answer in simplest radical form.

ANSWER: $(2 + \sqrt{3})/4$ [or $(1/2) + (\sqrt{3})/4$]; or quantity 2 plus the square root of 3 all over 4; or quantity one-half plus square root of 3 over 4; do not accept answers mentioning "square root of three-fourths"]

7A. What is the term for the simple type of data structure that stores elements by using at least one index to represent each element?

ANSWER: **array**

7B. What confessional poet wrote the novel *The Bell Jar* and died of carbon monoxide poisoning after sealing herself in her kitchen and sticking her head in the oven?

ANSWER: Sylvia **Plath**

8A. This is a 30-second computation question. If you randomly select five of the letters in QUIZ BOWL, what is the probability they are all consonants? Express your answer as a fraction in lowest terms.

ANSWER: **1/56** [there are $8C5 = 56$ ways to select 5 letters and only one selection results in all consonants]

8B. This is a 30-second calculation question. Factor $x^3 + 4x^2 - 9x - 36$.

ANSWER: **$(x - 3)(x + 3)(x + 4)$**

9A. What closest spiral galaxy to the Milky Way is predicted to collide and merge with the Milky Way in around four billion years?

ANSWER: **Andromeda** galaxy

9B. What English meaning is shared by the Mandarin *wo*, Latin *ego*, German *ich*, and Spanish *yo*?

ANSWER: **"I"** [or **first-person singular** pronoun; do not accept or prompt on "me" or other words]

10A. Which Rossini opera contains the aria *Una voce poco fa* and is based on the first part of the Figaro trilogy by Beaumarchais?

ANSWER: *The **Barber of Seville**, or The Futile Precaution* [or *Il **barbiere di Siviglia**, ossia L'inutile precauzione*]

10B. Ten of these, along with two ricercars and a sonata, are found in Bach's *The Musical Offering*. Name this musical form, which also includes Pachelbel's most famous work.

ANSWER: **canon**



1. In one work by this author, Lionel Verney lives in the year 2100 where almost every other person has died from plague, giving him the title appellation of *The Last Man*. In another work by this writer, the main character destroys a project he is working on, leading to the death of Henry Clerval. That story is told to the Arctic explorer Robert Walton by a Swiss scientist who reanimates dead tissue into a living being. For 10 points, name this British author who wrote about the creation of a monster in *Frankenstein*.

ANSWER: Mary Shelley [or Mary Wollstonecraft Godwin; prompt on Shelley]

023-11-44-08117

2. The theoretical foundation for this project was laid by Otto Frisch and Rudolf Peierls. Leo Szilard penned a letter, which Albert Einstein signed, that led to the development of this project. Leslie Groves directed this project. Trinity was chosen as the site to first test the results of this project. That test saw the use of an implosion-type plutonium device. For 10 points, name this project whose weapons laboratory was headed by Robert Oppenheimer and which developed the atomic bomb.

ANSWER: Manhattan Project

066-11-44-08118

3. At this work's conclusion, one of the main characters marries his girlfriend Graüben. In this work, a sixteenth-century manuscript by Arne Saknussemm inspires the protagonist. The title event in this novel begins at Mount Snaeffels and ends with Axel, the Icelandic guide Hans Bjelke, and Otto Lidenbrock emerging from a volcano on Stromboli Island. For 10 points, name this Jules Verne novel about an underground expedition.

ANSWER: A Journey to the Center of the Earth [or Voyage au Centre de la Terre]

030-11-44-08119

4. Louis Aggasiz (AH-gah-see) was the first to propose that these events had occurred. The ratio of oxygen-18 to oxygen-16 is used to determine the timing of these events. Variations in the eccentricity, axial tilt and precession of the Earth's orbit, known as Milankovitch (MIH-lank-UH-vitch) cycles, are thought to contribute to the start of these periods. Though not a real one, the "Little" one of these occurred after the Medieval Warm Period. For 10 points, name these periods of time when large parts of the Earth are covered with ice sheets.

ANSWER: ice age

066-11-44-08120

5. In this novel, Enoch causes a riot by killing the sacred python. The protagonist of this novel is forced to appease the gods when he beats his wife during the Week of Peace, and he is banished after he accidentally shoots Ezeudu's son. In this novel, the protagonist's son Nwoye enters a missionary school, and the protagonist participates in the ritual killing of his adopted son Ikemefuna. This novel's protagonist hangs himself after rebelling against British influence in Umuofia. For 10 points, name this novel about Okonkwo written by Chinua Achebe.

ANSWER: Things Fall Apart

105-11-44-08121

6. Two genes separated by this phenomenon are called orthologous. One theory of this phenomenon proposes that it occurs in bursts. That theory, proposed by Gould and Eldridge, is known as punctuated equilibrium. A genetic polymorphism may cause its sympatric variety, while geographic separation causes its allopatric type. It occurs when members of a new taxonomic group develop until they can only mate within the group. For 10 points, name this process, the creation of a new taxonomic group below genus.
ANSWER: **speciation** [prompt on "evolution" or "natural selection"]

132-11-44-08122

7. Its not the Netherlands, but Zealand is an eastern island in this country that contains Roskilde, where this country's monarchs are buried, as well as its current capital. That capital contains the amusement park Tivoli and is connected by the Oresund Bridge to Malmo, Sweden. In terms of area, most of this country exists on the Jutland peninsula. For 10 points, name this Scandinavian country with capital Copenhagen.
ANSWER: **Denmark**

121-11-44-08123

8. This artist painted himself looking away from a pond in *Swans Reflecting Elephants*, a work from his paranoiac-critical period. He collaborated with Luis Bunuel on the film *An Andalusian Dog*, which included a scene of a blade slicing through an eyeball. In one of this artist's paintings, ants crawl all over an orange clock and three watches melt into their surroundings. For 10 points, name this artist of *The Persistence of Memory*, a Spanish surrealist painter with a flamboyant mustache.
ANSWER: Salvador **Dali** [or Salvador Felipe Jacinto **Dali** i Domenech, Marquis de Pubol]

015-11-44-08124

9. Under this ruler, Loris Melikof was tasked with writing a new constitution for this ruler's country. During his reign, the Okhrana was created to infiltrate reform organizations. This ruler's country won a war that resulted in Bulgarian independence. This ruler created local councils called zemstvos to govern districts in his country. Succeeding Nicholas I, this man was assassinated by a bomb thrown by a member of the terrorist organization People's Will. For 10 points, name this Russian tsar who freed the serfs.
ANSWER: **Alexander II** of Russia [or **Alexander Nikolayevich**; prompt on **Alexander**]

140-11-44-08125

10. *Missi dominici* were men sent by this ruler to examine local living and report to the king. Forces under this man lost the Battle of Roncevaux Pass, which occurred when this man's army retreated across the Pyrenees. That occurred after this man attempted an invasion of the caliph of Cordova. This man's biographer was Einhard, who recorded this ruler's crowning as Holy Roman Emperor by Pope Leo III on Christmas in 800 CE. For 10 points, name this king of the Franks.
ANSWER: **Charlemagne** [or **Charles I**; or **Charles the Great**; or **Charles le Grand**; or **Karl der Grosse**; or **Carolus Magnus**; prompt on **Charles**]

140-11-44-08126

11. This politician resigned from an Oil and Gas Conservation Commission after encountering resistance in an investigation of Randy Ruedrich. This politician was featured in the documentary *The Undefeated* and wrote two memoirs, one of which was entitled *Going Rogue*. For 10 points, name this American politician who resigned as governor of Alaska a year after serving as John McCain's Vice-Presidential nominee.
ANSWER: Sarah Louise Heath **Palin**

130-11-44-08127

12. Members of this conference can face Conference USA opponents in the Beef 'O' Brady's and Liberty Bowls. This conference removed Temple as a football-only member due to its lack of success in that sport. This conference initially convinced TCU to join, only for it to later renege to join the Big 12, TCU. For 10 points, name this collegiate athletic conference which includes West Virginia University as a member, and has seen members Syracuse and Pittsburgh announce their intentions to join the ACC.

ANSWER: **Big East** Conference

088-11-44-08128

13. This country was the site of a brainwashing experiment conducted on political prisoners at Pitesti prison. The last king of this country, who was forced to abdicate in 1947, was Michael I. Other leaders of this country have included a dictator who was deposed and then executed with his wife on Christmas Day in 1989. For 10 points, identify this Eastern European country with capital at Bucharest that was formerly ruled by Nicolae Ceaucescu.

ANSWER: **Romania**

126-11-44-08129

14. Catalysts composed entirely of this substance include ones named GlnS and Hammerhead, while another type of this substance catalyzes the peptidyltransferase reaction. One type of it bonds with itself to form a cloverleaf shape; that type is responsible for delivering amino acids to ribosomes. Unlike a similar compound, it has hydroxyl groups on its 2-prime carbons and uses uracil instead of thymine. For 10 points, name this single-stranded nucleic acid which is synthesized from DNA.

ANSWER: **RNA** [or **ribonucleic acid**; do not accept or prompt on "DNA" or "deoxyribonucleic acid"]

132-11-44-08130

15. One theory of this condition concerns its non-accelerating inflation rate. In the US, the prevalence of this condition is determined by the household and payroll surveys. High rates of this condition occurred along with high inflation in the stagflation of the 1970s. Types of it include frictional, seasonal, and structural. Its primary measure does not include those who have become discouraged or exited the work force. For 10 points, name this condition in which a person is unable to find a job.

ANSWER: **unemployment**

132-11-44-08131



1. Hexokinase adds a functional group with a central atom of this element in the first step of glycolysis. The radioactive 32-isotope of this element was used to track viral DNA in the Hershey-Chase experiment. The electron transport chain reattaches a functional group containing it. The backbone of DNA consists of oxygen, carbon, and this element. This element and oxygen break off when ATP is hydrolyzed. For 10 points, name this element which is bonded to four oxygen atoms in phosphate.

ANSWER: **phosphorus**

132-11-44-08132

2. This leader outlined "Five Principles of Peaceful Coexistence" with a country he later went to war with in 1962. One of this man's other foreign policy objectives was successful when his country captured Goa in Operation Vijay. Upon coming to power, this man gave the "Tryst With Destiny" speech. The leader of the Congress party following Gandhi, for 10 points, name this first prime minister of India.

ANSWER: Jawaharlal **Nehru**

141-11-44-08133

3. Along with copper, this element can be obtained through in-situ leaching, which results in yellowcake. This element's hexafluoride (hex-ah-FLOOR-ide) is used in enrichment, and it is found bonded to oxygen in the mineral pitchblende. This element is the heaviest one known to occur naturally with isotopes such as 235 and 238, the former of which splits into barium and krypton during nuclear fission. For 10 points, name this radioactive element with symbol U.

ANSWER: **uranium**

140-11-44-08134

4. Parts of this nation use a system of customary law known as the Xeer. An autonomous section of this country that does not seek independence from this nation is known as Puntland. The Islamic militant group Al-Shabaab seeks to control this nation. American intervention in this country's civil war in Operation Restore Hope led to events portrayed in the movie *Black Hawk Down*. For 10 points, name this war-torn East African country that is a hotbed of piracy.

ANSWER: **Somalia**

030-11-44-08135

5. Hydrogenation is a specific form of this process that can turn double bonds into single bonds. Highly electropositive chemical species serve well as this process's namesake agents. Electrochemical half-reactions are usually described by the potential for this process to occur. This process happens to the cationic (CAT-eye-on-ik) metal reactant in a single-replacement reaction, turning it from positively charged into neutral. For 10 points, name this process of gaining electrons, which is paired with oxidation.

ANSWER: **reduction**

132-11-44-08136