

Round 10

Lilly Chavez • Brad Fischer • Natalie Howell • Clare Keenan • Mike Laudermith
Sophie Netzel • Lauren Onel • Aleija Rodriguez • Zane Smalley • Kristin Strey
Ethan Strombeck • Lana Kay Tutterow • Tyler Vaughan • Trevor Vice

Tossups

(1) **A choral piece by this composer in which the choir enters at full volume after a soft introduction has been played at every English coronation since 1727. This composer wrote a piece with sections such as *La Paix* [lah pay] to celebrate the (*) Treaty of Aix-La-Chapelle [ayx lah shah-pell]. Another of this man's works was premiered on the Thames River. For ten points, name this composer of *Music for the Royal Fireworks* and *Water Music*, as well as *Messiah*.**

ANSWER: George Frideric Handel

(2) **An author from this country wrote about the teacher Bird, who struggles with the knowledge that his baby has brain damage in the novel *A Personal Matter*. Another author from this country wrote the stories "In a Grove" and (*) "Rashomon." This country was the home of the author of "Confessions of a Mask," who committed seppuku during an attempted coup. For ten points, name this home country of the authors Akutagawa [ah-koo-tah-gah-wah], Oe [oh-ay], and Mishima [mee-shee-mah].**

ANSWER: Japan (accept Nippon-koku or Nihon-koku)

(3) **Population changes due to drought in this location have been studied by Peter and Rosemary Grant. Lonesome George, the final member of a species from this location, died in 2012. The most northerly species of penguin is found in this location, as are (*) blue-footed boobies and marine iguanas. This region's variety of food sources produce insect-catching and seed-crushing beak shapes in its native birds. For ten points, name this equatorial location where Charles Darwin observed finches, leading to the theory of natural selection.**

ANSWER: Galápagos Islands

(4) **After fighting back a Spanish army, this man was declared the Hero of Tampico. This man formed the Plan of Casa Mata with Guadalupe Victoria to overthrow Agustin Iturbide [ee-toor-bih-day]. This man introduced Americans to chicle after being exiled to Staten Island, and his (*) wooden leg was paraded around the US. The Gadsden Purchase was given to America by, for ten points, what eleven-term Mexican president who led the attack on the Alamo?**

ANSWER: Antonio de Padua Maria Severino Lopez de Santa Anna y Perez de Lebron

(5) **Members of this religion honor children at ages three, five, and seven on a November 15th holiday that includes handing out “thousand year” candy. Priestesses in this religion traditionally wear a (*) red and white outfit and perform a ritualistic dance called kagura. A temple complex for this religion is rebuilt every twenty years and may house its country’s Sacred Mirror. Amaterasu [ah-mah-tay-rah-soo] is one of the kami [kah-mee] worshiped in, for ten points, what traditional Japanese religion?**

ANSWER: Shintoism

(6) **Martin Luther King’s “I Have a Dream” speech opens with a reference to this policy, which had been signed “five score years ago.” This policy said a class of people should “labor faithfully for reasonable wages” and offered (*) military service as an option. Although this policy was announced five days after the Battle of Antietam, it did not take effect until January 1, 1863. Only rebellious territory was affected by, for ten points, what act by President Lincoln that freed American slaves?**

ANSWER: Emancipation Proclamation

(7) **The first enemy in this game can enter “Cruise Elroy” mode, in which he speeds up and refuses to “scatter.” This game’s maximum score of 3,333,360 can only be reached after the computer fails to draw dozens of keys in the level counter, instead overwriting the (*) right half of the map with an impassable “kill screen.” Blinky, Pinky, Inky, and Clyde are ghosts that chase the player in, for ten points, what classic arcade game in which pellets are eaten by a yellow circle?**

ANSWER: Pac-Man

(8) **This novel’s protagonist is kidnapped by Salé pirates and, after escaping from slavery, sells his friend Xury as a slave. In this novel, a sailor living near the Orinoco River on the “Island of Despair” rescues a man from a group of (*) cannibals, converts him to Christianity, and names him Friday. For ten points, name this novel about a man who spends twenty-eight years on an island after being shipwrecked, written by Daniel Defoe.**

ANSWER: Robinson Crusoe

(9) **Aristarchos of Samos is the first known proponent of this idea, which had early success explaining apparent retrograde motion. A full description of this idea appears in *De revolutionibus* and opposed the longstanding (*) Ptolemaic model [TOH-lah-may-ick model]. The discovery of elliptical orbits greatly improved this theory. Because he defended this theory, Galileo was tried by the Inquisition. For ten points, name this theory of Copernicus that says the planets travel around a nearby star rather than around the Earth.**

ANSWER: heliocentric theory (accept heliocentrism; accept any description of the Sun as the center of the Solar System or universe)

(10) **This mountain range lies above the world’s largest rail tunnel, the Gotthard tunnel, which opened in 2016. A subrange of these mountains reaches into Slovenia and is named for Julius Caesar. The Saint Bernard (*) Pass cuts through this mountain range in a ridge between Monte Rosa and Mont Blanc, its two highest peaks. The Matterhorn is in, for ten points, what European mountain range that is primarily in France, Italy, and Switzerland?**

ANSWER: the Alps (accept Swiss Alps; accept Julian Alps after “Slovenia” is read; accept French Alps or Italian Alps after those countries are read)

(11) **This man's father was named Creticus for his military operations on the island of Crete. This man, who led the left flank of an army at the Battle of Pharsalus, was granted certain regions of Gaul and Italy by the Roman Senate and was openly (*) attacked by Cicero in the *Philippics*. This member of the Second Triumvirate died after losing at Actium. For ten points, name this Roman politician, an ally of Julius Caesar and lover of Cleopatra.**

ANSWER: Mark Antony (or Marcus Antonius)

(12) **In the 18th century, a scientist from this country used a torsion balance to determine the density of the Earth. A later scientist from this country discovered the neutron and headed this country's phase of the Manhattan Project, code-named Tube Alloys. Both the Crookes radiometer and Newcomen (*) steam engine were invented in this country, where the law of the spring was stated by Robert Hooke, a curator of its Royal Society. For ten points, name this country where Sir Isaac Newton wrote the law of gravity.**

ANSWER: England (accept UK or United Kingdom; accept Great Britain)

(13) **A small white dog peers upward near a rake on the ground in this painting. A putto in this work puts its finger to its lips, hinting that a man in this painting's background is unaware of its subject. This painting's central figure kicks a (*) shoe into the air as another figure in a bush looks up toward her. For ten points, name this Fragonard painting showing a man pushing his lover on the title object, while another man secretly gets a glimpse up her pink dress.**

ANSWER: The Happy Accidents of the Swing (accept Les hasards heureux de l'escarpolette)

(14) **The Conway criterion judges whether this action is possible by rotating a shape and checking a set of six points. This task can be performed using 15 types of irregular pentagons, three types of hexagons, or any (*) triangle or quadrilateral, but cannot be done with other convex polygons. When making this kind of drawing, you must not have any overlap or any gaps. For ten points, name this type of mathematical art that often uses a repeating pattern to fill the plane.**

ANSWER: making a tessellation (accept word forms like tesselating; accept making a periodic tiling of the plane)

(15) **Three years after this Supreme Court case was decided, Henry Hyde sponsored an amendment restricting how federal funds could be spent on its subject. Sarah Weddington represented the plaintiff in this case, who used an alias to avoid publicity. The (*) balancing test in question in this case between governmental interests and a right to privacy was decided using a three-trimester framework. For ten points, name this landmark Supreme Court case that legalized abortion.**

ANSWER: Roe v. Wade

(16) **In a short story by this author, a smart house cooks and cleans, unaware that its inhabitants have died in a nuclear holocaust. This author of "There Will Come Soft Rains" wrote a novel in which a rulebook calls Benjamin Franklin the first (*) fireman and gives the order to "start the fire swiftly." In a novel by this man, Clarisse McClellan's disappearance makes Guy Montag lose faith in his job as a book burner. For ten points, name this author of *Fahrenheit 451*.**

ANSWER: Ray Douglas Bradbury

(17) **The splitting in the energy levels of these constructs can be modeled by crystal field theory. Linear combination approximation is used to form their molecular type. The Aufbau principle gives the order in which these entities are filled, and the (*) Pauli exclusion principle limits each atomic one to only two electrons. An element's electron configuration is a list of, for ten points, what regions around the nucleus with names like S, P, D, and F?**

ANSWER: orbitals (accept d orbitals before "linear" is read)

(18) **Robert Merton's strain theory seeks to explain why this phenomenon exists. A late 20th century decrease in this activity may be the result of unleaded gasoline. Jeremy Bentham argued that those that participated in this type of activity should be put in the Panopticon, in which one central (*) guard could observe everyone. For ten points, name this type of deviant activity that is investigated and punished by law enforcement.**

ANSWER: crime (accept equivalent answers, such as breaking the law)

(19) **This man was hid in the court of Lycomedes, where he had an affair with Deidamia that resulted in the birth of Neoptolemus. This man killed Penthesilea during a truce with (*) Priam to allow for a funeral. After his death, the remains of this warrior were mixed with those of Patroclus. This man's mother, Thetis, dipped him in the river Styx, which made most of his body invulnerable. Paris killed, for ten points, what enemy of Hector, a Greek warrior with a weak heel?**

ANSWER: Achilles (accept Achilleus)

(20) **A journal in this novel speculates that a chapel in Carfax received boxes of dirt from the *Demeter*, a ship whose crew disappeared at the hands of a wolf-like creature. Arthur Holmwood, John Seward, and Quincey Morris provide transfusions to (*) Lucy Westenra in this novel, and a sacrament wafer burns Mina Murray after she is bitten by the title character. Jonathan Harker recruits Van Helsing to help him defeat the title character in, for ten points, what Bram Stoker Gothic novel about a vampire?**

ANSWER: Dracula

Bonuses

(1) This event followed the removal of its target from the Politburo in 1926 and his exile from Russia in 1929. For ten points each,

Name this August 20, 1940 attack against a former Communist politician. Ramón Mercader carried out this attack in Mexico City with an ice axe.

ANSWER: assassination (or murder, etc.) of Leon Trotsky

The assassination of Leon Trotsky was ordered by this dictator of the Soviet Union, who had struggled to work with Trotsky after the death of Vladimir Lenin.

ANSWER: Joseph Stalin (or Joseph Dzughasvili)

Trotsky was initially exiled to Almaty, which served as the capital of this country within the Soviet Union and as an independent nation. In 1997, this country moved its capital to Astana.

ANSWER: Kazakhstan

(2) Answer these questions about consequences of the special theory of relativity, for ten points each.

Perhaps the most significant consequence is that this quantity must remain constant in all inertial reference frames. This quantity is represented by c in equations such as E equals $m c$ squared.

ANSWER: speed of light in a vacuum

Because the speed of light is constant, the theory implies that this substance, the medium through which light waves were thought to travel, does not exist. The non-existence of this substance was first suggested by the Michelson-Morley experiment.

ANSWER: luminiferous aether

Time dilation, another consequence of the theory, requires that the clocks on the thirty-two satellites of this system be corrected by about seven microseconds per day. The correction allows this system to give a location on Earth accurate to within four meters.

ANSWER: Global Positioning System (accept GPS)

(3) In Gustave Flaubert's novel *Madame Bovary*, Emma Bovary has affairs with Léon Dupuis and Rudolphe Boulanger before taking this action to escape her massive debt. For ten points each,

Name this action, which Emma Bovary commits by swallowing arsenic. In other novels from the late 1800s, unfaithful women commit this action by throwing themselves under trains or swimming too far into the Gulf of Mexico.

ANSWER: committing suicide (accept descriptions like killing herself or dying)

The title woman of this Leo Tolstoy novel kills herself by jumping under a train after a torrid love affair with Count Vronsky.

ANSWER: Anna Karenina

In this novel by Kate Chopin [shoh-PAN], Edna Pontellier has affairs with Alcée Arobin and Robert Lebrun, but swims into the Gulf of Mexico to die when Robert's dedication to social norms prevents her escape from a stifling marriage.

ANSWER: The Awakening

(4) Answer the following about talented drummers from the 1990s, for ten points each.

Dave Grohl drummed on hits like "Heart-Shaped Box" and "Smells Like Teen Spirit" for this band. Grohl formed the Foo Fighters after the suicide of this band's lead singer, Kurt Cobain.

ANSWER: Nirvana

Travis Barker was key in the success of this band, whose debut album included "What's my Age Again?", "Adam's Song," and "All the Small Things."

ANSWER: Blink-182

Jazz drummer Jimmy Chamberlin was fired from this band in 1996 and 2009 and briefly left it in 2017. He was a member of this band for the release of "1979" and "Bullet with Butterfly Wings" on the album *Mellon Collie and the Infinite Sadness*.

ANSWER: Smashing Pumpkins

(5) In the course of a week, this country's Minister for Home Affairs, Peter Dutton, lost a challenge for party leadership, quit his Cabinet post, lost a second challenge for party leadership, and was then re-appointed to his previous post by the winner of that second challenge. For ten points each,

Name this country, which underwent two leadership spills in August 2018, resulting in Scott Morrison becoming Prime Minister and taking office in Canberra.

ANSWER: **Australia**

Scott Morrison succeeded this man as Australia's Prime Minister. This man gained the office in a 2015 leadership spill against Tony Abbott.

ANSWER: Malcolm **Turnbull**

As a member of Parliament, Scott Morrison opposed attempts to legalize this activity, which was the subject of a 2017 postal survey.

ANSWER: **same-sex marriage** (accept equivalents)

(6) One of these substances, saccharin, generated a scare in the 1970s when a controversial study linked it to bladder cancer in rats. For ten points each,

Give the general term for compounds such as cyclamate and aspartame that contain almost no calories and substitute for sugar in diet soft drinks and other foods. In the US, these substances are color-coded pink, blue, and yellow in restaurant packets.

ANSWER: **artificial sweeteners**

An ancient artificial sweetener that may have contributed to the decline of Rome is sugar of lead, which consists of the toxic metal bonded to this anion with formula $C_2H_3O_2^{-1}$ [**C-two-H-three-O-two, one minus**]. This anion results when the acid in vinegar gives up a hydrogen ion.

ANSWER: **acetate**

Nearly half of the artificial sweetener sold in the US in 2017 was sucralose marketed under this brand name owned by Heartland Food Products Group. Due to legal action by its rival Equal, this brand no longer uses the slogan, "Made from sugar, so it tastes like sugar."

ANSWER: **Splenda**

(7) On October 20, 1973, this man ordered Elliot Richardson to fire Archibald Cox; when Richardson refused and resigned as Attorney General, this man went down the line to William Ruckelshaus, who also refused to fire Cox and resigned. For ten points each,

Name this US President who orchestrated the “Saturday Night Massacre.” Six months later, this man resigned once it was clear he would be impeached for his part in the coverup of the Watergate scandal.

ANSWER: Richard **Nixon**

Nixon asked Richardson and Ruckelshaus to fire Archibald Cox from this position, the leader of the investigation into the Watergate scandal.

ANSWER: **special prosecutor** (accept **special counsel**; accept **independent prosecutor**; accept **independent counsel**; prompt on prosecutor or counsel alone)

The Saturday Night Massacre was completed when Nixon made this third man the acting Attorney General and got him to fire Cox. In 1987, President Reagan nominated this man to the Supreme Court, but the Senate voted him down.

ANSWER: Robert **Bork**

(8) An ancient, armless sculpture of this goddess by Alexandros of Antioch probably once held the golden apple this woman received in the judgement of Paris. For ten points each,

Name this Greco-Roman goddess, who rises from the sea on a shell in Botticelli’s painting *The Birth of this goddess*.

ANSWER: **Venus** (accept **Aphrodite**; accept **Venus de Milo** or **Aphrodite of Milos**; accept The **Birth of Venus**)

This Italian artist painted the *Venus of Urbino*, in which a nude woman reclines on a bed with a small dog asleep at her feet. This man was also inspired by classical myth to paint *The Rape of Europa*.

ANSWER: **Titian** (accept Tiziano **Vicellio**)

This French painter of *Luncheon on the Grass* was inspired by Titian’s *Venus of Urbino* to paint *Olympia*, in which a nude woman is offered flowers by a dark-skinned servant.

ANSWER: Édouard **Manet** (do not accept or prompt on “Monet”)

(9) This author wrote the novel *Oil!*, which was adapted into the film *There Will Be Blood*. For ten points each,

Name this author, who wrote about Jurgis Rudkus, a Lithuanian immigrant who becomes a socialist, in another novel.

ANSWER: Upton Sinclair

Although this novel by Upton Sinclair was meant to draw attention to the poor working conditions suffered by factory workers like Jurgis Rudkus, the American public was shocked by the appalling food safety measures this novel described.

ANSWER: The Jungle

Upton Sinclair was a member of this early 1900s journalistic movement, which sought to expose corrupt leaders and institutions. Investigative journalism is sometimes referred to by this term.

ANSWER: muckraking journalism (accept word forms like muckraker)

(10) This deity was punished for plotting to kill the god of light by having snake venom dripped onto his skin. For ten points each,

Name this Norse trickster god who fooled the blind Hodr into killing Baldr with a spear made of mistletoe.

ANSWER: Loki

Loki is the father of Hel, Jormungandr [YOR-moon-gahn-durr], and this gigantic wolf, who is predicted to kill Odin and be killed by Vidarr at Ragnarök.

ANSWER: Fenrir (accept Fenris wolf)

Loki's monstrous children were also the children of Angrbotha, who was one of these mythical descendants of Ymir [EE-meer]. Although they were not usually depicted as extraordinarily large, these creatures are now often called "giants."

ANSWER: Jotunn [YOH-tunn] (accept Jotnar)

(11) This scientist used a buzzer, tuning fork, and metronome in his most famous experiment, but never a bell. For ten points each,

Name this Russian scientist who trained dogs to salivate upon hearing a certain stimulus, often thought to be a bell.

ANSWER: Ivan Pavlov

Pavlov's dogs learned to associate the sound of a buzzer with their food through this process in which an existing response is tied to an unrelated stimulus. B.F. Skinner later experimented with the "operant" form of this process.

ANSWER: classical conditioning (accept conditioned reflex; accept conditional reflex; prompt on reflex)

Pavlov's 1904 Nobel Prize was not for his animal behavior experiments, but for studying the secretion of gastric juice by this digestive organ. This hollow organ breaks down protein and other food components before releasing it to the small intestine.

ANSWER: stomach

(12) This war included a nearly year-long siege of Sevastopol, where the Black Sea fleet was based. For ten points each,

Name this 1850s war between Russia and an alliance of the Ottomans, France, and Britain, fought in a peninsula that was annexed by Russia in 2014.

ANSWER: Crimean War

War nursing was revolutionized during the Crimean War by this “Lady with the Lamp,” a statistician who organized and managed nursing for the English and their allies.

ANSWER: Florence Nightingale

Three years after the end of the Crimean War, the bloody Battle of Solferino in the Franco-Austrian War inspired the creation of this organization, which advocated for better treatment of wounded soldiers and safety for medics and field hospitals. Clara Barton founded the American branch of this organization.

ANSWER: Red Cross (accept International and/or American Red Cross)

(13) This author of *Zadig* wrote about a metaphysico-theologo-cosmonigologist who stubbornly insists that “all is for the best in this best of all possible worlds.” For ten points each,

Name this French satirist, who wrote about a young student of Doctor Pangloss in a novel subtitled “Optimism.”

ANSWER: Voltaire (accept François-Marie Arouet)

In this novel by Voltaire, Doctor Pangloss teaches the title young man to remain optimistic, even after they are exiled, beaten, robbed, tortured, and, in Pangloss’s case, apparently killed.

ANSWER: Candide or Optimism (accept Candide ou l’optimisme)

Candide watches Pangloss’s apparent execution at the hands of the Portuguese Inquisition shortly after this violent tectonic event that shook the city of Lisbon in real life in 1755. Estimated to have been an 8.5 magnitude event, this disaster caused a tsunami and widespread fires.

ANSWER: Lisbon earthquake

(14) Two of these instruments play the flowing melody at the start of Smetana’s tone poem *The Moldau*. For ten points each,

Name these reedless woodwind instruments. They often play high orchestral parts alongside their smaller relatives, the piccolo.

ANSWER: flute

This composer’s *Prelude to the Afternoon of a Faun* begins with a chromatic flute solo. This composer’s other piano pieces include “The Sunken Cathedral” and “Clair de Lune.”

ANSWER: Claude Debussy

This composer’s 8th symphony begins with a flute solo, and a flute plays a solo at the bottom of its range in this composer’s *New World Symphony*.

ANSWER: Antonín Dvořák

(15) In 1844, a mob attacked a jail where this man and his brother, Hiram, were awaiting trial; Hiram was shot through a door, and this man was shot three times before he fell out of a second-story window. For ten points each, Name this man. After his death, James Strang, Sidney Rigdon, and Brigham Young quarreled over who should succeed him as leader of their religious group.

ANSWER: Joseph Smith

Joseph Smith was a leader of the Latter-Day Saints, a religious movement that uses this sacred text. Smith translated this text into English out of “reformed Egyptian” that had been written on a set of golden plates revealed to him in New York in 1827.

ANSWER: Book of Mormon

Joseph Smith led the Mormons in this Illinois town, where as mayor he ordered the destruction of a newspaper critical of him and declared martial law.

ANSWER: Nauvoo

(16) A line of best fit may be drawn through one of these graphs to indicate a relationship between the variables in question. For ten points each,

Name this type of chart that displays points of data with a labeled set of x and y axes, named for the unorganized form it often takes.

ANSWER: scatter plot (accept scatter diagram, scatter graph, etc.)

A scatter plot can be used to demonstrate this type of association, often symbolized r , between two variables. A statistician must be careful not to use a scatter plot to imply that there is a cause and effect relationship between the variables, although this relationship is much weaker.

ANSWER: correlation (accept word forms; accept (Pearson’s) correlation coefficient)

The quantity r will have this value if a scatter plot’s points all lie on a single, downward sloping line.

ANSWER: negative one (prompt on “negative” alone; do not accept or prompt on “one” alone)

(17) Answer some questions about religious rites of passage, for ten points each.

This rite of passage is commonly performed on Jewish boys when they turn 13 or Jewish girls when they turn 12 or 13. During the ceremony, the child reads a portion of the Torah and official becomes responsible for themselves as an adult under Jewish law.

ANSWER: mitzvah (accept Bar Mitzvah or Bat Mitzvah; accept B’nai Mitzvah; accept B’not Mitzvah)

In Catholicism, this sacrament is performed to solidify the process of joining Christianity that began with baptism.

ANSWER: confirmation

In Hinduism, a young child must undergo Chundakarana, or the performing of this action, as the eighth step of their rite of passage. This action is against the Sikh belief of Kesh, which is meant to reflect god’s perfect creation.

ANSWER: having their hair cut

(18) This ruler is described as a “a fair vestal thronèd by the west” in a play, and as a hawk-eyed old woman who lavishes attention on a young boy in the fictional biography *Orlando*. For ten points each,

Name this long-reigning English queen, the daughter of Henry VIII, who was a patron of Shakespeare.

ANSWER: Queen **Elizabeth I** (prompt on “Elizabeth”)

Shakespeare described Elizabeth as a “fair vestal” who “passed on / in maiden meditation, fancy-free” in this comedic play. In this play, Titania and Oberon, the queen and king of the fairies, meddle in the lives of four lovers and then erase their memories so that they think they were only asleep.

ANSWER: A **Midsummer Night’s Dream** (do not accept “A Midsummer’s Night Dream”)

In this author’s fictional biography *Orlando*, Queen Elizabeth makes Orlando her steward before Orlando mysteriously transforms into a woman. This author also wrote *Mrs Dalloway* and *To the Lighthouse*.

ANSWER: Virginia **Woolf** (accept Adeline Virginia Stephen **Woolf**)

(19) This region is home to an annual Underwater Music Festival, where divers “play” instruments like the bara-tuba and raise awareness of coral degradation. For ten points each,

Name this island chain off the southern coast of Florida.

ANSWER: Florida **Keys**

US Highway 1, which stretches all the way from Maine to Key West, enters the Florida Keys at this key. Its name reflects the fact that it is the longest of the islands that make up the Keys.

ANSWER: Key **Largo**

Coral reefs aren’t the only ecosystem in Florida in need of environmental protection. This wetlands region of central and southern Florida is plagued with hundreds of invasive species of plants and threatened by urban development.

ANSWER: **Everglades**

(20) According to the Köppen climate classification system, these arid regions of the planet have expanded by seven percent since 1950. For ten points each,

Identify this biome with an average annual temperature above eighteen degrees Celsius and very little precipitation. Saudi Arabia and most of North Africa reside in this biome.

ANSWER: hot **desert**

The Köppen system uses a mathematical formula to differentiate deserts from these semiarid grasslands that have hot summers and cold winters. Much of Mongolia, Kazakhstan, and Ukraine consists of these plains.

ANSWER: mid-latitude **steppes**

Deserts and steppes are designated by this letter of the alphabet in the Köppen system. This letter also designates the layer of soil found just below the topsoil.

ANSWER: **B**