

1. As part of its 2010 roster restructuring, this NBA team was forced to trade the Minnesota Timberwolves Michael Beasley for very little in return. Other moves made by this team in the offseason were the signing of veterans Juwan Howard and Zydrunas Ilgauskas. Ilgauskas followed his teammate from another team who decided in a special on ESPN that he would bring his "talents to South Beach." For 10 points, name this NBA team that added Chris Bosh and LeBron James and re-signed Dwyane (dwayne) Wade.

ANSWER: **Miami** Heat [or Miami **Heat**]

023-10-22-03101

2. One common variety of these compounds contains a central carbon atom bonded to one amino group and three methanol groups. That compound is called Tris. Blood acts as one through a mixture of carbonic acid and carbonate ions. These compounds, whose effectiveness can be measured using the Henderson-Hasselbach equation, typically consist of a weak acid and its conjugate base. For 10 points, name these compounds that resist a change in pH.

ANSWER: **buffer** solutions [or **buffer** agents]

064-10-22-03102

3. This country's 1383 to 1385 interregnum ended with the Battle of Aljubarrota (AL-hoo-bar-AH-tah) and the rise of the House of Aviz. This country's colonies included Cape Verde, Mozambique, and Angola. During the twentieth century, it was led under the Estado Novo by Antonio Salazar. This country's capital suffered a devastating earthquake in 1755. This country split the New World with Spain in the Treaty of Tordesillas (tor-dey-SEE-yas). For 10 points, name this country that colonized Brazil.

ANSWER: **Portugal** [or **Portuguese** Republic; or Republica **Portuguesa**]

015-10-22-03103

4. Two different types of these proteins are used in sandwich assays. These proteins can be further divided into classes such as opsonins and agglutinins (uh-GLUE-tin-ins). These proteins can be classified as polyclonal or monoclonal depending on the B lymphocytes they are produced by. These proteins consist of two heavy and two light chains, arranged in a Y shape, and their variable regions interact with epitopes. For 10 points, name these proteins found in the immune system, whose primary purpose is to bind to antigens.

ANSWER: **antibodies** [or **antibody**; or **immunoglobulins**]

003-10-22-03104

5. In an inspiring speech, the title character of this film asserts, "The day may come when the courage of men fails...but it is not this day." Another character in this film cannot be slain by man, but is slain by a woman, Eowyn, instead. In this film, the Army of the Dead arrives in time to lift the siege of Minas Tirith. Afterwards, Aragorn leads his army to the Black Gate while Frodo, Sam, and Gollum destroy the ring in Mount Doom. For 10 points, name this third and final film in the *Lord of the Rings* series.

ANSWER: *The Lord of the Rings: The **Return of the King*** [do not accept or prompt on "Lord of the Rings"]

080-10-22-03105

6. He's not Eudoxus, but he names a property stating that there exists a natural number greater than a given real number. This author of *The Sand Reckoner* created an odometer for use in the First Punic War. He used a form of infinite series to calculate the area enclosed by a parabola and line. He created a namesake screw to move water and stated that the weight of a fluid displaced by an object equals the buoyant force on that object. For 10 points, name this Greek thinker who apocryphally defended Syracuse with a death ray.

ANSWER: **Archimedes** of Syracuse

001-10-22-03106

7. Measurements of this constant are based on x-ray diffraction of a crystal silicon lattice. Its namesake developed a law stating equal volumes of gas in the same conditions will have the same number of molecules. Multiplying this constant by the charge of an electron gives Faraday's constant. Multiplying it by Boltzmann's constant gives the gas constant. It was once defined using 12 grams of carbon-12. For 10 points, name this number of atoms in a mole, roughly equal to 6.02 times ten to the twenty-third.

ANSWER: **Avogadro's number** [prompt on **number of atoms in a mole** or similar answers]

064-10-22-03107

8. This man's administration saw the establishment of the Federal Trade Commission and the Federal Reserve. This President appointed Louis Brandeis to the Supreme Court. He signed into law the Clayton Antitrust Act. Incapacitated for much of his second term, this man's campaign slogan was "he kept us out of war," on which he ran before his re-election in 1916. For 10 points, name this 28th President who introduced the Fourteen Points and pushed for the founding of the League of Nations after World War I.

ANSWER: Thomas Woodrow **Wilson**

081-10-22-03108

9. Viruses causing this disease are in family Orthomyxoviridae (OR-tho-MIX-oh-VEER-ih-day). One of those viruses has antigenic shifts, an unpredictable recombination of surface proteins, making it hard to make true vaccines for this disease. Those viruses are classified by the types of hemagglutinins (HE-muh-GLUE-tin-ins) and neuraminidases (NOOR-uh-MIN-ih-day-sez) in their envelopes, making strains such as H3N2 and H2N1. For 10 points, name this disease for which people are often vaccinated in the fall.

ANSWER: **influenza**

003-10-22-03109

10. Standing committees in this body are created by its twenty-fifth rule. Its details are given in Section Three, Article One of the Constitution. Impeachment trials are run here. Appointments by the President must have the "advice and consent" of this body, meaning it must confirm those appointments. Members of it must be over thirty years of age. The Seventeenth Amendment made its members directly elected to their six year terms. For 10 points, name this upper house of Congress with one hundred members.

ANSWER: United States **Senate** [prompt on **Congress**]

001-10-22-03110

11. One of these entities is a son of Anu named Teshub. In addition to being a god of death, the Aztec deity Xolotl (show-LOT-ul) is depicted as a god of this type. Another example of one of these figures is a deity in Hindu mythology who was cursed by Gautama and was named Indra. One of these figures battles with the serpent Jormungandr (YOUR-mun-gone-dur) and is the possessor of the hammer Mjolnir (MYOL-neer). For 10 points, name this type of god that includes the Norse god Thor.

ANSWER: gods of **thunder** [or **storm** gods]

081-10-22-03111

12. One version of this poetic form includes a *volta* in the ninth line, which usually signals a change in theme. Philip Sydney's *Astrophel and Stella* is a sequence of these poems. Another poet addressed a number of these poems to the "Dark Lady." In English, these poems generally consist of three quatrains and a heroic couplet, amounting to fourteen lines in all. For 10 points, name these poems that include Shakespeare's "Shall I Compare Thee to a Summer's Day?"

ANSWER: **sonnets**

080-10-22-03112

13. When the polar vortex slows, this region can undergo sudden warming. This layer is subject to the quasi-biennial oscillation. The distribution of water and another substance in this layer and an associated sublayer are explained by the Brewer-Dobson circulation. Like the thermosphere, its temperature increases with altitude. This layer contains the ozone layer. Its bottom boundary is called the tropopause, below which is the troposphere. For 10 points, name this second layer of the atmosphere.

ANSWER: **stratosphere**

001-10-22-03113

14. One fairy tale collection by this author includes the story "The Birthday of the Infanta" and is named *A House of Pomegranates*. He renounced his friendship with Alfred Douglas in *De Profundis*. This man's works include a play in which Algernon Moncrieff is delighted to find out that he actually possesses the title name, and a novel whose protagonist remains youthful even as his portrait ages. For 10 points, name this Irish author of *The Importance of Being Earnest* and *The Picture of Dorian Grey*.

ANSWER: Oscar Fingal O'Flahertie Wills **Wilde**

081-10-22-03114

15. As First Lord of the Admiralty under Asquith, this man constructed a huge British fleet to stay ahead of the Germans leading up to World War I. In that role, this man was disgraced for the failure of an attempt to seize the Dardanelles in the Gallipoli Campaign. During the evacuation of Dunkirk, this man proclaimed, "We shall fight them on the beaches." This man led the British delegation at Yalta and signed the Atlantic Charter with Franklin Roosevelt. For 10 points, name this British Prime Minister for most of World War II.

ANSWER: Winston Leonard Spencer **Churchill**

080-10-22-03115

1A. Its adherents carry ritual knives and wear turbans. Name this Indian religion that Guru Nanak established as a compromise between Hinduism and Islam.

ANSWER: **Sikhism**

1B. What South American country is the location of Lake Maracaibo and Angel Falls?

ANSWER: Bolivarian Republic of **Venezuela** [or Republica Bolivariana de **Venezuela**]

2A. She took office in June 2010, following the resignation of Kevin Rudd. Name this woman, the first female Prime Minister of Australia.

ANSWER: Julia Eileen **Gillard**

2B. Which Dutch artist often wrote to his brother Theo and painted *Bedroom in Arles* and *Starry Night*?

ANSWER: Vincent Willem **van Gogh**

3A. This is a 10-second computation question. If the sample standard deviation is 15 and the sample size is 9, what is the standard error?

ANSWER: **5**

3B. This is a 10-second computation question. Suppose you have two shopping carts. If the probability of randomly picking a carton of orange juice from the first is  $\frac{3}{4}$  and the probability of picking out a container of ice cream from the second is  $\frac{1}{3}$ , then what is the probability of picking orange juice from the first and ice cream from the second?

ANSWER:  **$\frac{1}{4}$**  [or **0.25**]

4A. What author of *The Bluest Eye* and *Beloved* won the 1993 Nobel Prize in Literature and remains the last American to do so?

ANSWER: Toni **Morrison** [or Chloe Anthony **Wofford**]

4B. Name the programming construct, used for iteration, that comes in "while" and "for" types.

ANSWER: **loops**

5A. This is a 20-second computation question. What is the slant height of a cone with height 10 and radius 2? Give your answer in reduced radical form.

ANSWER: **2 square root of 26**

5B. This is a 20-second computation question. What is the period of sine of  $2x$  plus cosine of  $8x$  in radians?

ANSWER: **pi**

6A. What diacritical marking above letters can be replaced in German by putting an e after the letters a, o, or u?

ANSWER: **umlaut**

6B. What Egyptian author wrote *Palace Walk*, *Palace of Desire*, and *Sugar Street* as the parts of his Cairo Trilogy?

ANSWER: Naguib **Mahfouz**

7A. This is a 30-second computation question. Solve for the positive real solution of  $x$  in  $xy = \text{square root of the quantity } x^2 + y^2 + 1 \text{ end quantity and } x^2 - y^2 = 4 - x^2$ .

ANSWER:  $x = \text{square root of } 3$

7B. This is a 30-second computation question. Solve for y in the system of equations  $2x - y = 30$ ,  $5y = z$ ,  $z + x = 16 - y$ .

ANSWER:  $y = \underline{1/10}$  [or  $y = \underline{0.1}$ ]

8A. Name the state that is home to Lake Okechobee and the Everglades.

ANSWER: **Florida**

8B. Which French mathematician names a formula that states that the quantity cosine of x plus i sine of x to the nth power is equal to cosine of n x plus i sine of n x?

ANSWER: Abraham **de Moivre** (dih MAH-vwuh)

9A. What body is now the largest known dwarf planet in the solar system, after its discovery led to the demotion of Pluto?

ANSWER: 136199 **Eris**

9B. What term is used to describe medieval tales about the battles and travels of early Germanic and Scandinavian people?

ANSWER: **saga**

10A. What American pop artist gained fame for his comic strip style paintings, such as *Drowning Girl* and *Whaam!*?

ANSWER: Roy **Lichtenstein**

10B. What series of video games follows Starkiller, who starts out as Darth Vader's apprentice?

ANSWER: *Star Wars: The **Force Unleashed***

1. Near this work's end, the author rejects such practical plans as "using neither cloaths, nor household furniture, except which is our own." The author of this work calculates that his land holds "two hundred thousand couple whose wives are breeders," from which he subtracts thirty thousand "able to maintain their own children." The central plan of this work would "greatly lessen the number of papists" by having Irish one year olds be sold and eaten. For 10 points, name this satirical pamphlet by Jonathan Swift.

ANSWER: A ***Modest Proposal*** For Preventing The Children of Poor People in Ireland From Being Aburden to Their Parents or Country, and For Making Them Beneficial to The Public

080-10-22-03117

2. This composer of the concert overture "In Autumn" wrote a five-movement Baroque-style suite for string orchestra called "In Holberg's Time." A tympani roll opens this man's Piano Concerto in A minor, his only completed concerto. He included "Anitra's Dance" and "Morning Mood" in a set of two four-movement suites taken from incidental music to an Ibsen play. For 10 points, name this Norwegian composer whose "In The Hall Of The Mountain King" comes from his *Peer Gynt* Suites.

ANSWER: Edvard Hagerup **Grieg**

082-10-22-03118

3. In the Lagrangian, an additive term representing this quantity does not have its sign changed. This value is equal to three halves temperature times Boltzmann's constant. For an object, the increase in it is equal to the definite integral of force over time, meaning its change is equal to the work performed on the object. It is conserved in an elastic collision. It has a rotational form and a translation form, which is equal to one half mass times velocity squared. For 10 points, name this energy of motion.

ANSWER: **kinetic** energy

001-10-22-03119

4. Hans Toch and Kenneth Adams's studies on these places include one on "maladaptation" in them. The Auburn Plan of them experimented with congregate work and the "silent system." Alexis de Tocqueville originally came to America to study these. Michel Foucault's *Discipline and Punish* is about these. Jeremy Bentham proposed one called the Panopticon. Philip Zimbardo ran an experiment on these facilities at Stanford. High security ones are called "supermax." For 10 points, name these places of incarceration.

ANSWER: **prison** [or **jail**; or **correctional institution**; or **penitentiary**; or **penal system**; or **correctional facility**; prompt on **work house**]

001-10-22-03120

5. Colonel Richard Mason sent a report to the President about the early days of this event. This event began near New Helvetia. Samuel Brannan profited from this event. This period was sparked by James Marshall, who made a discovery at Sutter's Mill. The people who took part in this event were referred to as the 49ers. It saw San Francisco grow from a small settlement into a city. For 10 points, name this event in which people went to what is now a western state in hopes of finding a valuable metal.

ANSWER: **California Gold Rush** [or **discovery of gold at Sutter's Mill** before "Sutter's Mill" is read; prompt on **gold rush**]

001-10-22-03121

6. One process of this type moves a glycine intermediate from the peroxisome to another organelle, and occurs because the enzyme rubisco cannot distinguish between two possible substrates. In addition to the "photo" form of this process, another type begins with a ten-step pathway breaking down glucose into pyruvic acid. In anatomy, a type of this process involves a system including the trachea, bronchi, and lungs. For 10 points, give this term that names oxygen-consuming, energy-generating processes and breathing.  
ANSWER: **respiration** [or **cellular respiration**; or **photorespiration** before it is read]

003-10-22-03122

7. One poem by this author is set on a hill overlooking a town, where a lone man pretends to revel with his dead friends while clutching a jug of liquor. This author of "Mr. Flood's Party" wrote a poem about a "child of scorn" who was "born too late." He created an "imperial slim" character whom he contrasted with people who "cursed their bread" in one poem. In that poem, the title character goes home and puts a bullet in his head. For 10 points, name this American poet who wrote "Miniver Cheevy" and "Richard Cory."  
ANSWER: Edwin Arlington **Robinson**

026-10-22-03123

8. By the equivalence principle, a homogenous gravitational field is equivalent to this quantity. The time derivative of this quantity is jerk. In the kinematic equation for position as a function of time, this quantity is the coefficient of the time-squared term, because it is the second derivative of position. By Newton's Second Law, it is equal to force over mass. For 10 points, name this quantity that is the "a" in "F equals m a."  
ANSWER: **acceleration**

003-10-22-03124

9. One poet from this country included "Song to Autumn" in his *Saturnian Poems*. That poet's lover, also from this country, wrote about the sinking of "The Drunken Boat" and penned *A Season in Hell*. Those men were Paul Verlaine and Arthur Rimbaud (RAM-boh), respectively. Another poet from this country included "The Litanies of Satan" after the "Spleen and Ideal" section in the collection *The Flowers of Evil*. For 10 points, name this home of Charles Baudelaire, Gustave Flaubert, and Alexandre Dumas.  
ANSWER: **France** [or **French** Republic; or Republique **Francaise**]

079-10-22-03125

10. This figure once masqueraded as Bolverk to gain access to a substance made after the murder of Kvasir (kuh-VAH-sear). One of this deity's sons will avenge his death at Ragnarok using a shoe. This possessor of the spear Gungnir rides an eight-legged horse who is the child of Loki. This god is attended to by Huginn and Muninn. The tribute that this god paid to be able to drink from Mimir's well means that he has only one eye. For 10 points, name this husband of Frigg, the chief god of the Norse pantheon.  
ANSWER: **Odin**

081-10-22-03126

11. Like barbiturates, this compound binds to GABA-A receptors in the body. One method for detecting this compound is by mixing it with chromic acid to produce chromium (III) and acetic acid. Fractional distillation can purify this compound up to about 95%, with a desiccator required for higher purity. Corn and sugar cane are popular sources of this compound when used as a biofuel. Its concentration is often measured in "proof." For 10 points, name this alcohol with formula C<sub>2</sub>H<sub>5</sub>OH that is consumed in liquor.  
ANSWER: **ethanol** [or **ethyl alcohol**; or **C<sub>2</sub>H<sub>5</sub>OH** before it is read]

064-10-22-03127

12. In one play set in this city, Serafina learns that her late, truck-driving husband, Rosario, was unfaithful. In addition to being the setting of *The Rose Tattoo*, this city is home to Ignatius J. Reilly in John Kennedy Toole's *A Confederacy of Dunces*. In another play set here, Allan Grey's wife befriends Mitch Mitchell. That play about Stella Kowalski's sister, Blanche DuBois, is *A Streetcar Named Desire*. For 10 points, name this city depicted in *Old Creole Days* by George Washington Cable, an author from Louisiana.

ANSWER: **New Orleans**

079-10-22-03128

13. This event was immediately preceded by the issuance of the Fourteen Part Message, written in response to the Hull Note. This event began at Wheeler Field. A message relayed during this event said, "This is not a drill." Although this event did not damage the *Lexington* and *Enterprise*, it did destroy four battleships, including the *Arizona*, leading the day it occurred on to be called "a date which will live in infamy." For 10 points, name this Japanese surprise attack on a naval base in Hawaii.

ANSWER: attack on **Pearl Harbor**

003-10-22-03129

14. The protagonist of this story is described as "one of those pretty and charming girls, born by a blunder of destiny in a family of employees." The protagonist of this story washes dishes for ten years in order to pay off a ruinous debt, which she incurred by attending a ball held by the Minister of Education. In this story, Madame Loisel pays 36,000 francs to replace the title object, lent to her by Madame Forester, which she discovers is false. For 10 points, name this ironic story by Guy de Maupassant.

ANSWER: "The **Necklace**" [or "La **Parure**"]

080-10-22-03130

15. *Roper v. Simmons* established age limits for this practice. In one case concerning it, a 5-4 majority found it "wantonly and freakishly imposed" after a writ of certiorari (sur-shee-uh-RAIR-ree) was granted to a defendant named Furman. After that case was overturned by *Gregg v. Georgia*, this practice was applied to Gary Gilmore. For 10 points, name this practice by which chairs named Old Sparky or lethal injections are used to end the lives of convicted murderers.

ANSWER: **capital punishment** [or **death penalty**; or **execution**; or any specific method of capital punishment]

079-10-22-03131

1. In one of this author's plays, Boy Willie returns home to convince Doaker Charles to sell an item which is carved with scenes from his family's enslavement. Another of this man's characters makes a deal to finish building the title object if Bono buys his wife a refrigerator. This author of *The Piano Lesson* wrote a ten-play series covering each decade of the twentieth century, including one in which Corey feuds with his father, Troy Maxson. For 10 points, name this author of *The Pittsburgh Cycle*, including *Fences*.

ANSWER: August **Wilson**

080-10-22-03132

2. This period saw the pinnacle of production of erotic art called shunga. It was preceded by a period of strife called the Sengoku period. This government was established after the Battle of Sekigahara by a namesake founder with given name Ieyasu. It was ended by the start of the Meiji Restoration. This government ruled from a capital whose name lent itself to another name for this period, Edo, which is now named Tokyo. For 10 points, name this final shogunate of Japan, that ruled from 1603 to 1868.

ANSWER: **Tokugawa** Shogunate [or **Edo** Period before it is read]

081-10-22-03133

3. Riccardo Drigo revised the score of this work, adding in parts of the composer's *Eighteen Pieces for Piano*. Julius Reisinger did the original choreography for this work, but performances today are based on the work of Lev Ivanov and Marius Petipa. Prince Siegfried confesses his love to the wrong woman in this ballet, which also features the evil sorcerer Von Rothbart. For 10 points, name this ballet by Tchaikovsky, in which Odette has been transformed into one of the title birds.

ANSWER: **Swan Lake** [**Lebedinoje ozero**]

001-10-22-03134

4. One politician from this state claimed that Dearborn, Michigan had been taken over by Sharia law. That politician is a Tea Party member who was the subject of rumours that she was a Scientologist. This state's junior Senator, John Ensign, is the nation's only Pentecostal Senator. This state's senior Senator is also the Senate Majority Leader, and defeated Sharron Angle in the 2010 midterm elections. For 10 points, name this state whose senior Senator is Harry Reid.

ANSWER: **Nevada**

024-10-22-03135

5. One treaty named for this city created the European Coal and Steel Community. Another treaty named for this city mandated that Guam, the Philippines, and Puerto Rico be given up by the loser of the Spanish-American War. Another treaty named for it gave Louisiana to Spain in 1763, ending the Seven Years' and French and Indian Wars. A suburb of this capital city named the treaty that ended World War I. For 10 points, name this city near Versailles where many treaties were signed to end wars involving France.

ANSWER: **Paris**

079-10-22-03136

Humans are incapable of naturally producing this vitamin, whose deficiency can lead to scurvy. Name this vitamin, also known as ascorbic acid.

ANSWER: Vitamin **C**

079-10-22-03137

This is a calculation question. If you roll 6 die at once, what is the chance of not rolling a 6 on any of them?

ANSWER: **15625/46656**

079-10-22-03137